

BECKHOFF New Automation Technology

Manual | EN

TE1000

TwinCAT 3 | PLC Library: Tc2_LON

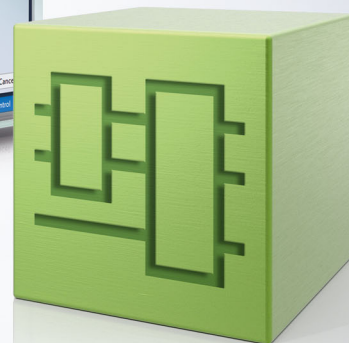
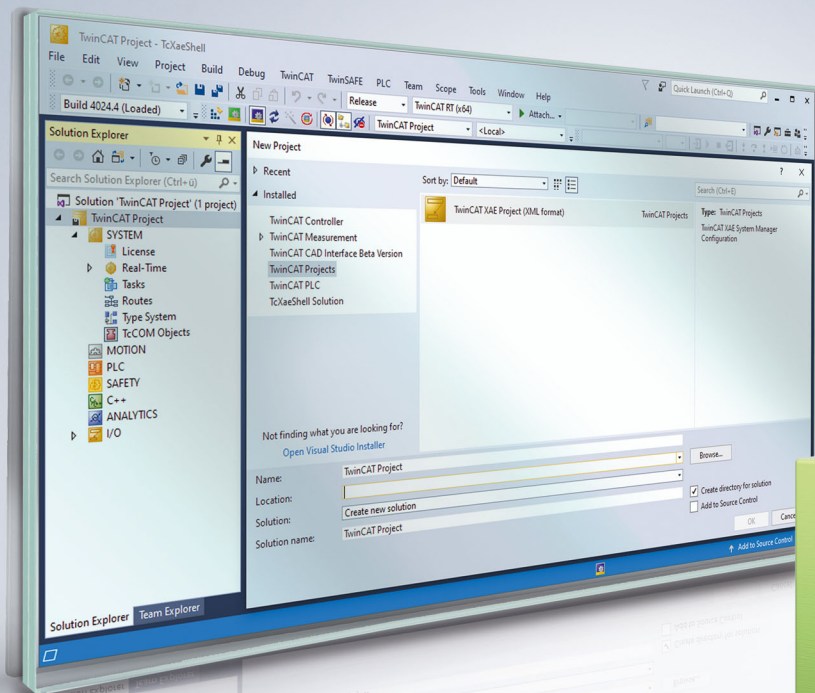


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1 Foreword

1.1 Notes on the documentation

This description is intended exclusively for trained specialists in control and automation technology who are familiar with the applicable national standards.

The documentation and the following notes and explanations must be complied with when installing and commissioning the components.

The trained specialists must always use the current valid documentation.

The trained specialists must ensure that the application and use of the products described is in line with all safety requirements, including all relevant laws, regulations, guidelines, and standards.

Disclaimer

The documentation has been compiled with care. The products described are, however, constantly under development.

We reserve the right to revise and change the documentation at any time and without notice.

Claims to modify products that have already been supplied may not be made on the basis of the data, diagrams, and descriptions in this documentation.

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1.2 For your safety

Safety regulations

Read the following explanations for your safety.

Always observe and follow product-specific safety instructions, which you may find at the appropriate places in this document.

Exclusion of liability

All the components are supplied in particular hardware and software configurations which are appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation, and drive technology who are familiar with the applicable national standards.

Signal words

The signal words used in the documentation are classified below. In order to prevent injury and damage to persons and property, read and follow the safety and warning notices.

Personal injury warnings

 DANGER
Hazard with high risk of death or serious injury.
 WARNING
Hazard with medium risk of death or serious injury.
 CAUTION
There is a low-risk hazard that could result in medium or minor injury.

Warning of damage to property or environment

NOTICE
The environment, equipment, or data may be damaged.

Information on handling the product

This information includes, for example:
recommendations for action, assistance or further information on the product.

1.3 Notes on information security

The products of Beckhoff Automation GmbH & Co. KG (Beckhoff), insofar as they can be accessed online, are equipped with security functions that support the secure operation of plants, systems, machines and networks. Despite the security functions, the creation, implementation and constant updating of a holistic security concept for the operation are necessary to protect the respective plant, system, machine and networks against cyber threats. The products sold by Beckhoff are only part of the overall security concept. The customer is responsible for preventing unauthorized access by third parties to its equipment, systems, machines and networks. The latter should be connected to the corporate network or the Internet only if appropriate protective measures have been set up.

In addition, the recommendations from Beckhoff regarding appropriate protective measures should be observed. Further information regarding information security and industrial security can be found in our <https://www.beckhoff.com/secguide>.

Beckhoff products and solutions undergo continuous further development. This also applies to security functions. In light of this continuous further development, Beckhoff expressly recommends that the products are kept up to date at all times and that updates are installed for the products once they have been made available. Using outdated or unsupported product versions can increase the risk of cyber threats.

To stay informed about information security for Beckhoff products, subscribe to the RSS feed at <https://www.beckhoff.com/secinfo>.

2 Introduction

The Tc2_LON library is an extensive TwinCAT PLC library for data exchange with LON devices. The communication with these devices is realized via SNVTs (**S**tandard **N**etwork **V**ariable **T**ypes). These SNVTs are defined in the LONMark (see also [LONMARK](#) and [LONMARK Network Variables](#)). For each SNVT there is a function block for sending and another function block for receiving.

This library should only be used in conjunction with a KL6401 (LON master terminal).

The SNVT should be configured with the [KS2000](#) [[▶ 15](#)] in the terminal.

The SNVTs are linked with a LON configuration tool (e.g. LonMaker from Echelon). This tool is not provided by Beckhoff.

The user of this library requires basic knowledge of the following:

- TwinCAT XAE
- KS2000
- PC and network knowledge
- Structure and properties of the Beckhoff Embedded PC and its Bus Terminal system
- Technology of LON devices / LON configuration tools
- Relevant safety regulations for building technical equipment

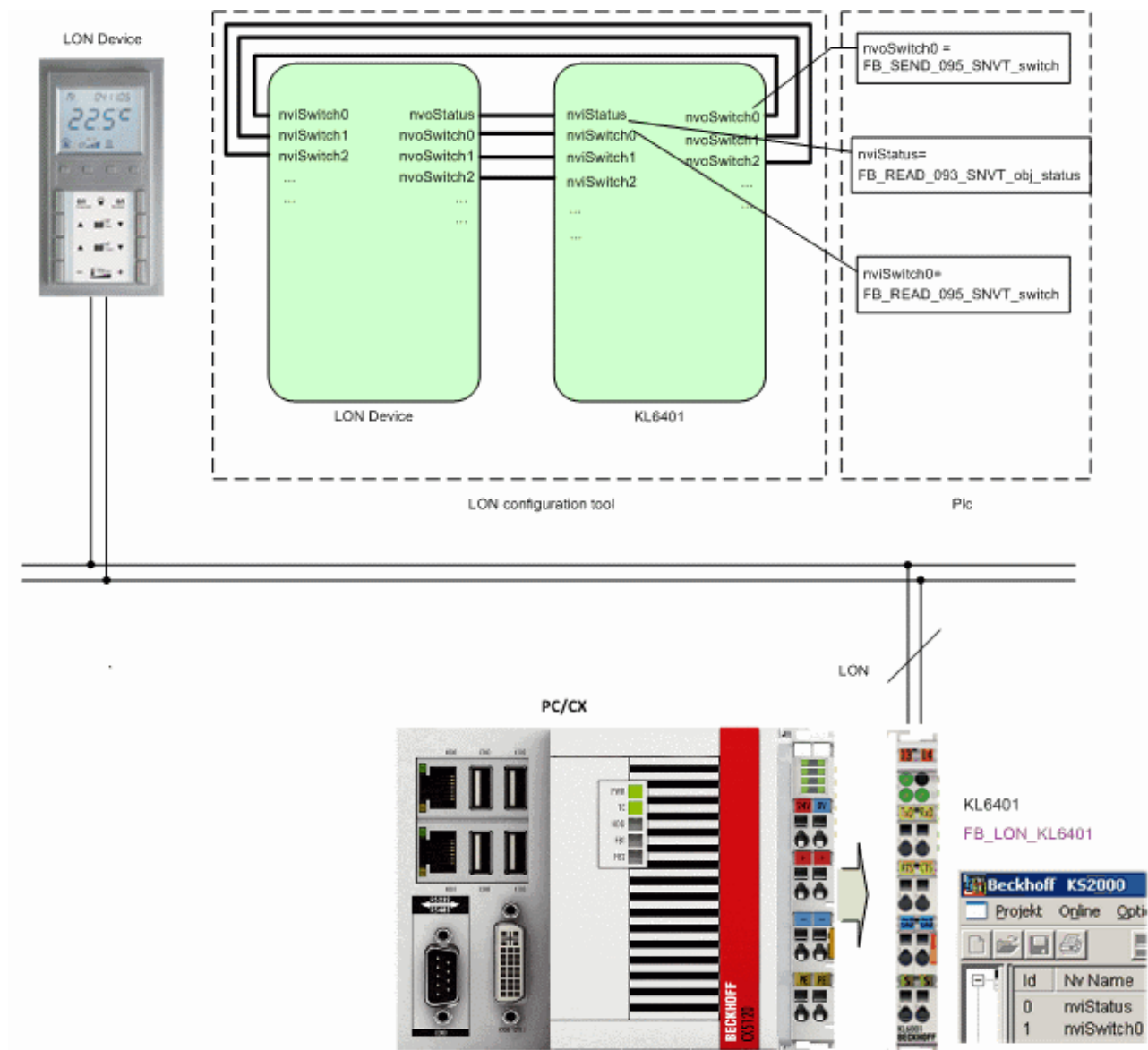
This software library is intended for building automation system partners of Beckhoff Automation GmbH & Co. KG. The system partners operate in the field of building automation and are concerned with the installation, commissioning, expansion, maintenance and service of measurement, control and regulating systems for the technical equipment of buildings.

The Tc2_LON library is usable on all hardware platforms that support TwinCAT 3.1 or higher.

Hardware documentation in the Beckhoff information system:

[KL6401](#).

3 LON



Each LON device provides network variables (SNVTs) for communication with other devices. The required variables are selected based on the device documentation or the Xif file (machine-readable representation of all used SNVTs) and entered in the KL6401 via the [KS2000](#) [► 15]. The [KS2000](#) [► 15] can now be used to create another Xif file. Both Xif files are read and combined with a LON configuration tool (not provided by Beckhoff). For further information please refer to the respective tool.

For each SNVT entered in the KL6401, a suitable function block has to be programmed on the PLC side. These function blocks can then be used to access the SNVTs of the devices.

How the KL6401 functions

Sending

The KL6401 sends single SNVT variables. This means that an SNVT variable sent to the KL6401 is sent to the LON network individually. Only when this has successfully been sent can the next SNVT variable be transferred to the KL6401.

Receiving

The KL6401 has 2 buffers, the telegram buffer and the index buffer.

The input variables of a LON telegram that has been received are placed in the telegram buffer. The index number of the incoming telegram is also entered into the index buffer.

The TwinCAT LON function block evaluates the index buffer, transfers input variables that have been received to the application program, and removes them from the index buffer. If the function block does not read the data out of the telegram buffer quickly enough, it can save up to 62 entries (i.e. the maximum number of SNVT variables).

If a telegram that has already been received (which the function block has not yet transferred to the application program, and which therefore still has an entry in the index buffer) is received from the KL6401 again, then a new entry is not made in the index buffer, but the input variables in the telegram buffer are updated.

3.1 Supported SNVTs

General information on SNVTs can be found online under www.lonmark.org.

The KL6401 supports the following SNVTs (LonMark data types).

SNVT ID	SNVT NAME	Read	Send	Additional information
1	SNVT_amp	Read [► 33]	Send [► 240]	
2	SNVT_amp_mil	Read [► 34]	Send [► 242]	
3	SNVT_angle	Read [► 35]	Send [► 243]	
4	SNVT_angle_vel	Read [► 36]	Send [► 245]	
5	SNVT_btu_kilo	Read [► 37]	Send [► 247]	
6	SNVT_btu_mega	Read [► 38]	Send [► 248]	
7	SNVT_char_ascii	Read [► 39]	Send [► 250]	
8	SNVT_count	Read [► 40]	Send [► 251]	
9	SNVT_count_inc	Read [► 42]	Send [► 253]	
10	SNVT_date_cal			SNVT outdated, not implemented
11	SNVT_date_day	Read [► 43]	Send [► 255]	
12	SNVT_date_time			SNVT outdated, not implemented
13	SNVT_elec_kwh	Read [► 44]	Send [► 256]	
14	SNVT_elec_whr	Read [► 45]	Send [► 258]	
15	SNVT_flow	Read [► 46]	Send [► 259]	
16	SNVT_flow_mil	Read [► 47]	Send [► 261]	
17	SNVT_length	Read [► 48]	Send [► 263]	
18	SNVT_length_kilo	Read [► 49]	Send [► 264]	
19	SNVT_length_micr	Read [► 50]	Send [► 266]	
20	SNVT_length_mil	Read [► 51]	Send [► 268]	
21	SNVT_lev_cont	Read [► 52]	Send [► 269]	
22	SNVT_lev_disc			SNVT outdated, not implemented
23	SNVT_mass	Read [► 53]	Send [► 271]	
24	SNVT_mass_kilo	Read [► 54]	Send [► 273]	
25	SNVT_mass_mega	Read [► 55]	Send [► 274]	
26	SNVT_mass_mil	Read [► 56]	Send [► 276]	
27	SNVT_power	Read [► 57]	Send [► 278]	
28	SNVT_power_kilo	Read [► 59]	Send [► 279]	

SNVT ID	SNVT NAME	Read	Send	Additional information
29	SNVT_ppm	Read [► 60]	Send [► 281]	
30	SNVT_press	Read [► 61]	Send [► 283]	
31	SNVT_res	Read [► 62]	Send [► 284]	
32	SNVT_res_kilo	Read [► 63]	Send [► 286]	
33	SNVT_sound_db	Read [► 64]	Send [► 288]	
34	SNVT_speed	Read [► 65]	Send [► 289]	
35	SNVT_speed_mil	Read [► 66]	Send [► 291]	
36	SNVT_str_asc	Read [► 67]	Send [► 293]	
37	SNVT_str_int	Read [► 68]	Send [► 294]	
38	SNVT_telcom	Read [► 69]	Send [► 296]	
39	SNVT_temp	Read [► 70]	Send [► 297]	
40	SNVT_time_passed			SNVT outdated, not implemented
41	SNVT_vol	Read [► 71]	Send [► 299]	
42	SNVT_vol_kilo	Read [► 72]	Send [► 300]	
43	SNVT_vol_mil	Read [► 73]	Send [► 302]	
44	SNVT_volt	Read [► 74]	Send [► 304]	
45	SNVT_volt_dbmv	Read [► 75]	Send [► 305]	
46	SNVT_volt_kilo	Read [► 76]	Send [► 307]	
47	SNVT_volt_mil	Read [► 77]	Send [► 309]	
48	SNVT_amp_f	Read [► 78]	Send [► 310]	
49	SNVT_angle_f	Read [► 79]	Send [► 312]	
50	SNVT_angle_vel_f	Read [► 80]	Send [► 314]	
51	SNVT_count_f	Read [► 81]	Send [► 315]	
52	SNVT_count_inc_f	Read [► 82]	Send [► 317]	
53	SNVT_flow_f	Read [► 84]	Send [► 319]	
54	SNVT_length_f	Read [► 85]	Send [► 320]	
55	SNVT_lev_cont_f	Read [► 86]	Send [► 322]	
56	SNVT_mass_f	Read [► 87]	Send [► 324]	
57	SNVT_power_f	Read [► 88]	Send [► 325]	
58	SNVT_ppm_f	Read [► 89]	Send [► 327]	
59	SNVT_press_f	Read [► 90]	Send [► 329]	
60	SNVT_res_f	Read [► 91]	Send [► 330]	
61	SNVT_sound_db_f	Read [► 92]	Send [► 332]	
62	SNVT_speed_f	Read [► 93]	Send [► 334]	
63	SNVT_temp_f	Read [► 94]	Send [► 335]	
64	SNVT_time_f	Read [► 95]	Send [► 337]	
65	SNVT_vol_f	Read [► 96]	Send [► 339]	
66	SNVT_volt_f	Read [► 97]	Send [► 340]	
67	SNVT_btu_f	Read [► 98]	Send [► 342]	
68	SNVT_elec_whr_f	Read [► 99]	Send [► 344]	
69	SNVT_config_src	Read [► 100]	Send [► 345]	
70	SNVT_color	Read [► 101]	Send [► 347]	

SNVT ID	SNVT NAME	Read	Send	Additional information
71	SNVT_grammage	Read [► 102]	Send [► 348]	
72	SNVT_grammage_f	Read [► 103]	Send [► 350]	
73	SNVT_file_req	Read [► 104]	Send [► 351]	In preparation, please do not use for the time being.
74	SNVT_file_status	Read [► 105]	Send [► 353]	
75	SNVT_freq_f	Read [► 106]	Send [► 354]	
76	SNVT_freq_hz	Read [► 107]	Send [► 356]	
77	SNVT_freq_kilohz	Read [► 108]	Send [► 358]	
78	SNVT_freq_milhz	Read [► 109]	Send [► 359]	
79	SNVT_lux	Read [► 110]	Send [► 361]	
80	SNVT_ISO_7811			SNVT outdated, not implemented
81	SNVT_lev_percent	Read [► 111]	Send [► 363]	
82	SNVT_multiplier	Read [► 112]	Send [► 364]	
83	SNVT_state	Read [► 113]	Send [► 366]	
84	SNVT_time_stamp	Read [► 114]	Send [► 367]	
85	SNVT_zerospans	Read [► 116]	Send [► 369]	
86	SNVT_magcard	Read [► 117]	Send [► 370]	
87	SNVT_elapsed_tm	Read [► 118]	Send [► 372]	
88	SNVT_alarm	Read [► 119]	Send [► 373]	
89	SNVT_currency	Read [► 120]	Send [► 375]	
90	SNVT_file_pos	Read [► 121]	Send [► 376]	
91	SNVT_muldiv	Read [► 122]	Send [► 378]	
92	SNVT_obj_request	Read [► 123]	Send [► 379]	
93	SNVT_obj_status	Read [► 124]	Send [► 381]	
94	SNVT_preset	Read [► 125]	Send [► 383]	
95	SNVT_switch	Read [► 126]	Send [► 385]	
96	SNVT_trans_table	Read [► 127]	Send [► 386]	
97	SNVT_override	Read [► 129]	Send [► 388]	
98	SNVT_pwr_fact	Read [► 130]	Send [► 389]	
99	SNVT_pwr_fact_f	Read [► 131]	Send [► 391]	
100	SNVT_density	Read [► 132]	Send [► 392]	
101	SNVT_density_f	Read [► 133]	Send [► 394]	
102	SNVT_rpm	Read [► 134]	Send [► 396]	
103	SNVT_hvac_emerg	Read [► 135]	Send [► 397]	
104	SNVT_angle_deg	Read [► 136]	Send [► 399]	
105	SNVT_temp_p	Read [► 137]	Send [► 400]	
106	SNVT_temp_setpt	Read [► 138]	Send [► 402]	
107	SNVT_time_sec	Read [► 139]	Send [► 403]	
108	SNVT_hvac_mode	Read [► 140]	Send [► 405]	
109	SNVT_occupancy	Read [► 141]	Send [► 407]	
110	SNVT_area	Read [► 142]	Send [► 408]	
111	SNVT_hvac_overid	Read [► 143]	Send [► 410]	
112	SNVT_hvac_status	Read [► 145]	Send [► 411]	

SNVT ID	SNVT NAME	Read	Send	Additional information
113	SNVT_press_p	Read [► 146]	Send [► 413]	
114	SNVT_address	Read [► 147]	Send [► 414]	
115	SNVT_scene	Read [► 148]	Send [► 416]	
116	SNVT_scene_cfg	Read [► 149]	Send [► 417]	
117	SNVT_setting	Read [► 150]	Send [► 419]	
118	SNVT_evap_state	Read [► 151]	Send [► 421]	
119	SNVT_therm_mode	Read [► 152]	Send [► 422]	
120	SNVT_defr_mode	Read [► 153]	Send [► 424]	
121	SNVT_defr_term	Read [► 154]	Send [► 425]	
122	SNVT_defr_state	Read [► 155]	Send [► 427]	
123	SNVT_time_min	Read [► 156]	Send [► 428]	
124	SNVT_time_hour	Read [► 157]	Send [► 430]	
125	SNVT_ph	Read [► 159]	Send [► 431]	
126	SNVT_ph_f	Read [► 160]	Send [► 433]	
127	SNVT_chlr_status	Read [► 161]	Send [► 435]	
128	SNVT_tod_event	Read [► 162]	Send [► 436]	
129	SNVT_smo_obscur	Read [► 163]	Send [► 438]	
130	SNVT_fire_test	Read [► 164]	Send [► 439]	
131	SNVT_temp_ror	Read [► 165]	Send [► 441]	
132	SNVT_fire_init	Read [► 166]	Send [► 442]	
133	SNVT_fire_indcte	Read [► 167]	Send [► 444]	
134	SNVT_time_zone	Read [► 168]	Send [► 445]	
135	SNVT_earth_pos	Read [► 169]	Send [► 447]	
136	SNVT_reg_val	Read [► 170]	Send [► 448]	
137	SNVT_reg_val_ts	Read [► 171]	Send [► 450]	
138	SNVT_volt_ac	Read [► 172]	Send [► 451]	
139	SNVT_amp_ac	Read [► 173]	Send [► 453]	
143	SNVT_turbidity	Read [► 175]	Send [► 454]	
144	SNVT_turbidity_f	Read [► 176]	Send [► 456]	
145	SNVT_hvac_type	Read [► 177]	Send [► 458]	
146	SNVT_elec_kwh_l	Read [► 178]	Send [► 459]	
147	SNVT_temp_diff_p	Read [► 179]	Send [► 461]	
148	SNVT_ctrl_req	Read [► 180]	Send [► 462]	
149	SNVT_ctrl_resp	Read [► 181]	Send [► 464]	
150	SNVT_ptz	Read [► 182]	Send [► 465]	
151	SNVT_privacyzone	Read [► 183]	Send [► 467]	
152	SNVT_pos_ctrl	Read [► 184]	Send [► 468]	
153	SNVT_enthalpy	Read [► 185]	Send [► 470]	
154	SNVT_gfci_status	Read [► 186]	Send [► 471]	
155	SNVT_motor_state	Read [► 187]	Send [► 473]	
156	SNVT_pumpset_mn	Read [► 188]	Send [► 474]	
157	SNVT_ex_control	Read [► 189]	Send [► 476]	

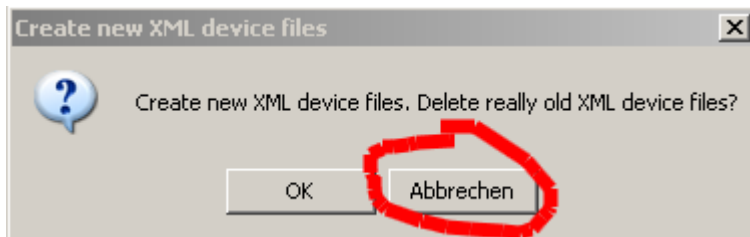
SNVT ID	SNVT NAME	Read	Send	Additional information
158	SNVT_pumpset_sn	Read [▶ 190]	Send [▶ 477]	
159	SNVT_pump_sensor	Read [▶ 192]	Send [▶ 479]	
160	SNVT_abs_humid	Read [▶ 193]	Send [▶ 480]	
161	SNVT_flow_p	Read [▶ 194]	Send [▶ 482]	
162	SNVT_dev_c_mode	Read [▶ 195]	Send [▶ 484]	
163	SNVT_valve_mode	Read [▶ 196]	Send [▶ 485]	
164	SNVT_alarm_2	Read [▶ 197]	Send [▶ 487]	
165	SNVT_state_64	Read [▶ 198]	Send [▶ 488]	
166	SNVT_nv_type	Read [▶ 199]	Send [▶ 490]	
168	SNVT_ent_opmode	Read [▶ 200]	Send [▶ 491]	
169	SNVT_ent_state	Read [▶ 201]	Send [▶ 493]	
170	SNVT_ent_status	Read [▶ 202]	Send [▶ 494]	
171	SNVT_flow_dir	Read [▶ 203]	Send [▶ 496]	
172	SNVT_hvac_satsts	Read [▶ 205]	Send [▶ 497]	
173	SNVT_dev_status	Read [▶ 206]	Send [▶ 499]	
174	SNVT_dev_fault	Read [▶ 207]	Send [▶ 500]	
175	SNVT_dev_maint	Read [▶ 208]	Send [▶ 502]	
176	SNVT_date_event	Read [▶ 209]	Send [▶ 503]	
177	SNVT_sched_val	Read [▶ 210]	Send [▶ 505]	
178	SNVT_sec_state			SNVT outdated, not implemented
179	SNVT_sec_status			SNVT outdated, not implemented
180	SNVT_sbldnd_state	Read [▶ 211]	Send [▶ 506]	
181	SNVT_rac_ctrl	Read [▶ 212]	Send [▶ 508]	
182	SNVT_rac_req	Read [▶ 213]	Send [▶ 509]	
183	SNVT_count_32	Read [▶ 214]	Send [▶ 511]	
184	SNVT_clothes_w_c	Read [▶ 215]	Send [▶ 512]	
185	SNVT_clothes_w_m	Read [▶ 216]	Send [▶ 514]	
186	SNVT_clothes_w_s	Read [▶ 218]	Send [▶ 515]	
187	SNVT_clothes_w_a	Read [▶ 219]	Send [▶ 517]	
188	SNVT_multiplier_s	Read [▶ 220]	Send [▶ 518]	
189	SNVT_switch_2	Read [▶ 221]	Send [▶ 520]	
190	SNVT_color_2	Read [▶ 222]	Send [▶ 521]	
191	SNVT_log_status	Read [▶ 223]	Send [▶ 523]	
192	SNVT_time_stamp_p	Read [▶ 224]	Send [▶ 524]	
193	SNVT_log_fx_request	Read [▶ 225]	Send [▶ 526]	
194	SNVT_log_fx_status	Read [▶ 226]	Send [▶ 527]	
195	SNVT_log_request	Read [▶ 227]	Send [▶ 529]	
196	SNVT_enthalpy_d	Read [▶ 228]	Send [▶ 530]	
197	SNVT_amp_ac_mil	Read [▶ 230]	Send [▶ 532]	
198	SNVT_time_hour_p	Read [▶ 231]	Send [▶ 534]	
199	SNVT_lamp_status	Read [▶ 232]	Send [▶ 535]	

SNVT ID	SNVT NAME	Read	Send	Additional information
200	SNVT_environment	Read [► 233]	Send [► 537]	
201	SNVT_geo_loc	Read [► 234]	Send [► 538]	

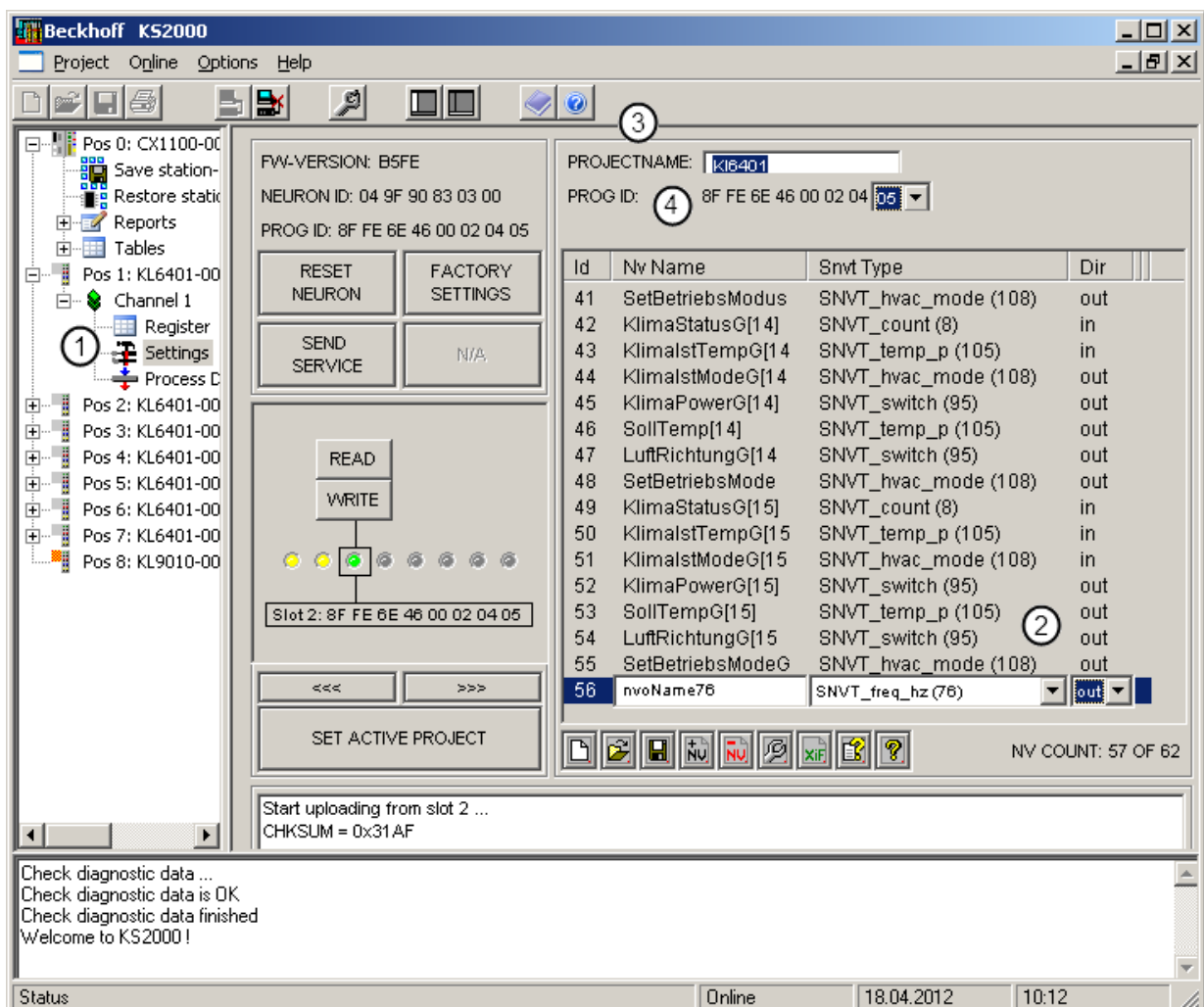
3.2 Configuration software KS2000

Commissioning procedure

1. Install the configuration software KS2000, version 4.3.0.39 or higher.
2. Plug the KL6401 into your Bus Coupler, and terminate the K-Bus with a KL9010.
3. Log on. Should the dialog box **Create new XML Device Files** be open, cancel at this point.



4. The terminal can be configured under **Settings** (①).



5. Enter the SNVTs in the table (②).



Use to add a variable and to remove a selected variable.

The column **Id** cannot be edited. It contains the NV index. This index is also required as input variable "wNVIndex" for the [PLC function blocks](#) [► 18].

6. Enter any text in column **Nv Name**. These descriptions are required in the LON configuration tool (not provided by Beckhoff) for identifying the respective variables.

7. Select the required SNVT in column **Snvt Type**.

8. In column **Dir** (Direction) you can specify whether the variable is sent (out) or received (in).

9. Enter any project name (click on **PROJECTNAME** ③).

10. Edit the program ID (Prog ID ④). Do this by clicking Program ID, and selecting a **Program ID**. This program ID may only be issued once in your LON project. A maximum of 256 (0-255) program IDs can be used. This means that you can use 256 different configurations in one project. LON terminals with the same configuration also have the same program ID.

11. Press the button to create the Xif file. This file is required in the LON configuration tool (not provided by Beckhoff).

12. Use the button to save the configuration in a BLC file. This file can be used to load the configuration if a terminal is replaced or to use the same configuration in another terminal.

⇒ The data can now be written to the terminal.

13. Use the buttons [>>>] or [<<<] to select the required slot, then use the button **WRITE** to write the data to the terminal. The slot may not be activated (green) during this process.



The terminal is delivered with active slot 0 (factory setting). This slot contains a fixed configuration and cannot be modified. To transfer other values a different slot has to be configured and activated. Only one slot at a time is active.

⇒ The project must be activated after the download has successfully been completed.

14. Press the button **SET ACTIVE PROJECT**.

15. De-energies the KL6401.

⇒ After switching on the KL6401 (switching the power supply on again) the desired configuration is active.

Description of the editing functions



Deletes the table



Opens an existing SNVT configuration file (*.BLC) for the KL6401



Saves the current configuration as a BLC file



Edits an SNVT variable



Inserts an SNVT variable



Deletes an SNVT variable



Creates an XIF file for a LON configuration tool (not provided by Beckhoff)



Opens the Help



Info

4 Programming

4.1 POU's

Function blocks	Description
FB_LON_KL6401 [► 27]	Send / receive function block

Read

POUs	Description
FB_READ_001_SNVT_amp [► 33]	Electric current (Amperes)
FB_READ_002_SNVT_amp_mil [► 34]	Electric current (milliAmperes)
FB_READ_003_SNVT_angle [► 35]	Angular distance (radians)
FB_READ_004_SNVT_angle_vel [► 36]	Angular velocity (radians/second)
FB_READ_005_SNVT_btu_kilo [► 37]	Thermal energy (kilo-Btus)
FB_READ_006_SNVT_btu_mega [► 38]	Thermal energy (mega-Btus)
FB_READ_007_SNVT_char_ascii [► 39]	ASCII character (8-bit ASCII character)
FB_READ_008_SNVT_count [► 40]	Absolute count (units)
FB_READ_009_SNVT_count_inc [► 42]	Increment count (units (delta))
FB_READ_011_SNVT_date_day [► 43]	Day of week (day names)
FB_READ_013_SNVT_elec_kwh [► 44]	Electric energy (kiloWatt-hours)
FB_READ_014_SNVT_elec_whr [► 45]	Electric energy (Watt-hours)
FB_READ_015_SNVT_flow [► 46]	Flow volume (liters/second)
FB_READ_016_SNVT_flow_mil [► 47]	Flow volume (milliliters/second)
FB_READ_017_SNVT_length [► 48]	Length (meters)
FB_READ_018_SNVT_length_kilo [► 49]	Length (kilometers)
FB_READ_019_SNVT_length_micr [► 50]	Length(micrometers (microns))
FB_READ_020_SNVT_length_mil [► 51]	Length (millimeters)
FB_READ_021_SNVT_lev_cont [► 52]	Continuous level (% of full level)
FB_READ_023_SNVT_mass [► 53]	Mass (grams)
FB_READ_024_SNVT_mass_kilo [► 54]	Mass (kilograms)
FB_READ_025_SNVT_mass_mega [► 55]	Mass (metric tons)
FB_READ_026_SNVT_mass_mil [► 56]	Mass (milligrams)
FB_READ_027_SNVT_power [► 57]	Power (Watts)
FB_READ_028_SNVT_power_kilo [► 59]	Power (kiloWatts)
FB_READ_029_SNVT_ppm [► 60]	Concentration (ppm)
FB_READ_030_SNVT_press [► 61]	Pressure (gauge) (kiloPascals)
FB_READ_031_SNVT_res [► 62]	Electric resistance (Ohms)
FB_READ_032_SNVT_res_kilo [► 63]	Electric resistance (kiloOhms)
FB_READ_033_SNVT_sound_db [► 64]	Sound level (dB)
FB_READ_034_SNVT_speed [► 65]	Linear velocity (meters/second)
FB_READ_035_SNVT_speed_mil [► 66]	Linear velocity (meters/second)
FB_READ_036_SNVT_str_asc [► 67]	Character string
FB_READ_037_SNVT_str_int [► 68]	Wide character string with locale code
FB_READ_038_SNVT_telcom [► 69]	Telecomm states

POUs	Description
FB READ 039 SNVT temp [► 70]	Temperature (degrees Celsius)
FB READ 041 SNVT vol [► 71]	Volume (liters)
FB READ 042 SNVT vol kilo [► 72]	Volume (kiloliters)
FB READ 043 SNVT vol mil [► 73]	Volume (milliliters)
FB READ 044 SNVT volt [► 74]	Electric voltage (Volts)
FB READ 045 SNVT volt dbmv [► 75]	Electric voltage (dB microVolts)
FB READ 046 SNVT volt kilo [► 76]	Electric voltage (kiloVolts)
FB READ 047 SNVT volt mil [► 77]	Electric voltage (milliVolts)
FB READ 048 SNVT amp f [► 78]	Electric current (Amperes)
FB READ 049 SNVT angle f [► 79]	Angular distance (radians)
FB READ 050 SNVT angle vel f [► 80]	Angular velocity (radians/second)
FB READ 051 SNVT count f [► 81]	Absolute count (units)
FB READ 052 SNVT count inc f [► 82]	Increment count (units (delta))
FB READ 053 SNVT flow f [► 84]	Flow volume (liters/second)
FB READ 054 SNVT length f [► 85]	Length (meters)
FB READ 055 SNVT lev cont f [► 86]	Continuous level
FB READ 056 SNVT mass f [► 87]	Mass (grams)
FB READ 057 SNVT power f [► 88]	Power (Watts)
FB READ 058 SNVT ppm f [► 89]	Concentration (ppm)
FB READ 059 SNVT press f [► 90]	Pressure (gauge) (Pascals)
FB READ 060 SNVT res f [► 91]	Electric resistance (Ohms)
FB READ 061 SNVT sound db f [► 92]	Sound level (dBspl)
FB READ 062 SNVT speed f [► 93]	Linear velocity (meters/second)
FB READ 063 SNVT temp f [► 94]	Temperature (degrees Celsius)
FB READ 064 SNVT time f [► 95]	Elapsed time (seconds)
FB READ 065 SNVT vol f [► 96]	Volume (liters)
FB READ 066 SNVT volt f [► 97]	Electric voltage (Volts)
FB READ 067 SNVT btu f [► 98]	Thermal energy (Btus)
FB READ 068 SNVT elec whr f [► 99]	Electric energy (Watt-hours)
FB READ 069 SNVT config_src [► 100]	Configuration source
FB READ 070 SNVT color [► 101]	CIELAB color (L*,a*,b)
FB READ 071 SNVT grammage [► 102]	Grammage (grams/sq meter)
FB READ 072 SNVT grammage f [► 103]	Grammage (grams/sq meter)
FB READ 073 SNVT file_req [► 104]	File request
FB READ 074 SNVT file_status [► 105]	File status
FB READ 075 SNVT freq f [► 106]	Frequency (Hertz)
FB READ 076 SNVT freq_hz [► 107]	Frequency (Hertz)
FB READ 077 SNVT freq_kilohz [► 108]	Frequency (kiloHertz)
FB READ 078 SNVT freq_milhz [► 109]	Frequency (Hertz)
FB READ 079 SNVT lux [► 110]	Illumination (lux)
FB READ 081 SNVT lev_percent [► 111]	Percentage level (% of full level)
FB READ 082 SNVT multiplier [► 112]	Multiplier
FB READ 083 SNVT state [► 113]	State vector

POUs	Description
FB READ 084 SNVT time_stamp [► 114]	Time stamp
FB READ 085 SNVT zerospan [► 116]	Zero and span
FB READ 086 SNVT magcard [► 117]	ISO 7811 (40 hexadecimal digits)
FB READ 087 SNVT elapsed_tm [► 118]	Elapsed time
FB READ 088 SNVT alarm [► 119]	Alarm status
FB READ 089 SNVT currency [► 120]	Currency
FB READ 090 SNVT file_pos [► 121]	File position
FB READ 091 SNVT muldiv [► 122]	Multiply/Divide
FB READ 092 SNVT obj_request [► 123]	Object request
FB READ 093 SNVT obj_status [► 124]	Object status
FB READ 094 SNVT preset [► 125]	Preset
FB READ 095 SNVT switch [► 126]	Switch
FB READ 096 SNVT trans_table [► 127]	Translation table
FB READ 097 SNVT override [► 129]	Override code
FB READ 098 SNVT pwr_fact [► 130]	Power factor
FB READ 099 SNVT pwr_fact_f [► 131]	Power factor (multiplier)
FB READ 100 SNVT density [► 132]	Density (kilograms/cubic meter)
FB READ 101 SNVT density_f [► 133]	Density (kilograms/cubic meter)
FB READ 102 SNVT rpm [► 134]	Angular velocity (revolutions/minute (RPM))
FB READ 103 SNVT hvac_emerg [► 135]	HVAC emergency mode
FB READ 104 SNVT angle_deg [► 136]	Angular distance(degrees)
FB READ 105 SNVT temp_p [► 137]	Temperature (degrees Celsius)
FB READ 106 SNVT temp_setpt [► 138]	Temperature
FB READ 107 SNVT time_sec [► 139]	Elapsed time (seconds)
FB READ 108 SNVT hvac_mode [► 140]	HVAC mode
FB READ 109 SNVT occupancy [► 141]	Occupancy
FB READ 110 SNVT area [► 142]	Area (square meters)
FB READ 111 SNVT hvac_overid [► 143]	HVAC override
FB READ 112 SNVT hvac_status [► 145]	HVAC status
FB READ 113 SNVT press_p [► 146]	Pressure
FB READ 114 SNVT address [► 147]	Neuron address
FB READ 115 SNVT scene [► 148]	Scene control
FB READ 116 SNVT scene_cfg [► 149]	Scene configuration
FB READ 117 SNVT setting [► 150]	Setting control
FB READ 118 SNVT evap_state [► 151]	Evaporator state
FB READ 119 SNVT therm_mode [► 152]	Thermostat mode
FB READ 120 SNVT defr_mode [► 153]	Defrost mode
FB READ 121 SNVT defr_term [► 154]	Defrost termination
FB READ 122 SNVT defr_state [► 155]	Defrost state
FB READ 123 SNVT time_min [► 156]	Elapsed time
FB READ 124 SNVT time_hour [► 157]	Elapsed time
FB READ 125 SNVT ph [► 159]	Acidity (pH)
FB READ 126 SNVT ph_f [► 160]	Acidity (pH)

POUs	Description
FB READ 127 SNVT chl_r status [► 161]	Chiller status
FB READ 128 SNVT tod_event [► 162]	Time of day event
FB READ 129 SNVT smo_obscur [► 163]	Smoke obscuration
FB READ 130 SNVT fire_test [► 164]	Fire test request
FB READ 131 SNVT temp_ror [► 165]	Temperature rate of change/rise
FB READ 132 SNVT fire_init [► 166]	Fire initiator type
FB READ 133 SNVT fire_indcte [► 167]	Fire indicator type
FB READ 134 SNVT time_zone [► 168]	Time zone descriptor
FB READ 135 SNVT earth_pos [► 169]	Earth position
FB READ 136 SNVT reg_val [► 170]	Register value
FB READ 137 SNVT reg_val_ts [► 171]	Register value
FB READ 138 SNVT volt_ac [► 172]	Voltage in alternating current
FB READ 139 SNVT amp_ac [► 173]	Amperage in alternating current
FB READ 143 SNVT turbidity [► 175]	Turbidity
FB READ 144 SNVT turbidity_f [► 176]	Turbidity
FB READ 145 SNVT hvac_type [► 177]	HVAC unit type
FB READ 146 SNVT elec_kwh_l [► 178]	Electric energy
FB READ 147 SNVT temp_diff_p [► 179]	Temp difference
FB READ 148 SNVT ctrl_req [► 180]	Control request
FB READ 149 SNVT ctrl_resp [► 181]	Control response
FB READ 150 SNVT ptz [► 182]	Camera PTZ
FB READ 151 SNVT privacyzone [► 183]	Privacy zone
FB READ 152 SNVT pos_ctrl [► 184]	Position control
FB READ 153 SNVT enthalpy [► 185]	Enthalpy (kiloJoules/kg)
FB READ 154 SNVT gfci_status [► 186]	GFCI status type
FB READ 155 SNVT motor_state [► 187]	Motor state
FB READ 156 SNVT pumpset_mn [► 188]	Pumpset
FB READ 157 SNVT ex_control [► 189]	Exclusive control
FB READ 158 SNVT pumpset_sn [► 190]	Pumpset sensor
FB READ 159 SNVT pump_sensor [► 192]	Pump sensor
FB READ 160 SNVT abs_humid [► 193]	Absolute humidity
FB READ 161 SNVT flow_p [► 194]	Flow volume
FB READ 162 SNVT dev_c_mode [► 195]	Device control mode
FB READ 163 SNVT valve_mode [► 196]	Valve mode
FB READ 164 SNVT alarm_2 [► 197]	Alarm status 2
FB READ 165 SNVT state_64 [► 198]	State vector
FB READ 166 SNVT nv_type [► 199]	Network variable type
FB READ 168 SNVT ent_opmode [► 200]	Entry operation mode
FB READ 169 SNVT ent_state [► 201]	Entry state
FB READ 170 SNVT ent_status [► 202]	Entry status
FB READ 171 SNVT flow_dir [► 203]	Flow direction
FB READ 172 SNVT hvac_satsts [► 205]	HVAC saturation status
FB READ 173 SNVT dev_status [► 206]	Device status

POUs	Description
FB READ 174 SNVT dev fault [► 207]	Device fault states
FB READ 175 SNVT dev maint [► 208]	Device maintenance
FB READ 176 SNVT date event [► 209]	Date event
FB READ 177 SNVT sched val [► 210]	Scheduler value
FB READ 180 SNVT sblnd state [► 211]	Sunblind State
FB READ 181 SNVT rac ctrl [► 212]	Rail-Audio Controller Control
FB READ 182 SNVT rac req [► 213]	Rail-Audio Controller Request
FB READ 183 SNVT count 32 [► 214]	Absolute count
FB READ 184 SNVT clothes w c [► 215]	Clothes Washer Command
FB READ 185 SNVT clothes w m [► 216]	Clothes Washer-Management Status
FB READ 186 SNVT clothes w s [► 218]	Clothes Washer Status
FB READ 187 SNVT clothes w a [► 219]	Clothes Washer Alarm
FB READ 188 SNVT multiplier s [► 220]	Value multiplier
FB READ 189 SNVT switch 2 [► 221]	Switch with scene and setting control.
FB READ 190 SNVT color 2 [► 222]	Color.
FB READ 191 SNVT log status [► 223]	Log status (hundredths of second)
FB READ 192 SNVT time stamp p [► 224]	Precision timestamp.
FB READ 193 SNVT log fx request [► 225]	Log file transfer request.
FB READ 194 SNVT log fx status [► 226]	Log file transfer status.
FB READ 195 SNVT log request [► 227]	Log status request.
FB READ 196 SNVT enthalpy d [► 228]	Enthalpy difference (kJ/kg) .
FB READ 197 SNVT amp ac mil [► 230]	Electrical current (milliAmperes) .
FB READ 198 SNVT time hour p [► 231]	Time hour (hours) .
FB READ 199 SNVT lamp status [► 232]	Lamp Status.
FB READ 200 SNVT environment [► 233]	Environment.
FB READ 201 SNVT geo loc [► 234]	Geographic Location.

Send

Function blocks	Description
FB SEND 001 SNVT amp [► 240]	Electric current (ampere)
FB SEND 002 SNVT amp mil [► 242]	Electric current (milliampere)
FB SEND 003 SNVT angle [► 243]	Angular distance (radian)
FB SEND 004 SNVT angle vel [► 245]	Angular velocity (radian / second)
FB SEND 005 SNVT btu kilo [► 247]	Thermal energy (kiloBtu)
FB SEND 006 SNVT btu mega [► 248]	Thermal energy (megaBtu)
FB SEND 007 SNVT char ascii [► 250]	ASCII character (8-bit ASCII character)
FB SEND 008 SNVT count [► 251]	Absolute number (items)
FB SEND 009 SNVT count inc [► 253]	Increment counter (items(delta))
FB SEND 011 SNVT date day [► 255]	Day of the week
FB SEND 013 SNVT elec kwh [► 256]	Electric energy (kW / hour)
FB SEND 014 SNVT elec whr [► 258]	Electric energy (Watt / hour)
FB SEND 015 SNVT flow [► 259]	Volume flow (liters / second)
FB SEND 016 SNVT flow mil [► 261]	Volume flow (milliliters / second)

Function blocks	Description
FB_SEND_017_SNVT_length [▶ 263]	Length (meter)
FB_SEND_018_SNVT_length_kilo [▶ 264]	Length (kilometer)
FB_SEND_019_SNVT_length_micr [▶ 266]	Length (micrometer)
FB_SEND_020_SNVT_length_mil [▶ 268]	Length (millimeter)
FB_SEND_021_SNVT_lev_cont [▶ 269]	Continuous change in value (% from maximum level)
FB_SEND_023_SNVT_mass [▶ 271]	Mass (gram)
FB_SEND_024_SNVT_mass_kilo [▶ 273]	Mass (kilogram)
FB_SEND_025_SNVT_mass_mega [▶ 274]	Mass (metric ton)
FB_SEND_026_SNVT_mass_mil [▶ 276]	Mass (milligram)
FB_SEND_027_SNVT_power [▶ 278]	Power (watt)
FB_SEND_028_SNVT_power_kilo [▶ 279]	Power (kilowatt)
FB_SEND_029_SNVT_ppm [▶ 281]	Concentration (ppm)
FB_SEND_030_SNVT_press [▶ 283]	Pressure (overpressure) (kilopascal)
FB_SEND_031_SNVT_res [▶ 284]	Electric resistance (ohm)
FB_SEND_032_SNVT_res_kilo [▶ 286]	Electric resistance (kiloohm)
FB_SEND_033_SNVT_sound_db [▶ 288]	Sound pressure level (dB)
FB_SEND_034_SNVT_speed [▶ 289]	Linear velocity (meters / second)
FB_SEND_035_SNVT_speed_mil [▶ 291]	Linear velocity (meters / second)
FB_SEND_036_SNVT_str_asc [▶ 293]	String (max. 30 characters) (ASCII string)
FB_SEND_037_SNVT_str_int [▶ 294]	Wide Character String
FB_SEND_038_SNVT_telcom [▶ 296]	Telephone status (telephone status name)
FB_SEND_039_SNVT_temp [▶ 297]	Temperature (°C)
FB_SEND_041_SNVT_vol [▶ 299]	Volume (liter)
FB_SEND_042_SNVT_vol_kilo [▶ 300]	Volume (kiloliter)
FB_SEND_043_SNVT_vol_mil [▶ 302]	Volume (milliliter)
FB_SEND_044_SNVT_volt [▶ 304]	Electrical voltage (volt)
FB_SEND_045_SNVT_volt_dbmv [▶ 305]	Electrical voltage (dB microvolt)
FB_SEND_046_SNVT_volt_kilo [▶ 307]	Electrical voltage (kilovolt)
FB_SEND_047_SNVT_volt_mil [▶ 309]	Electrical voltage (millivolt)
FB_SEND_048_SNVT_amp_f [▶ 310]	Electric current (ampere)
FB_SEND_049_SNVT_angle_f [▶ 312]	Angular distance (radian)
FB_SEND_050_SNVT_angle_vel_f [▶ 314]	Angular velocity (radian / second)
FB_SEND_051_SNVT_count_f [▶ 315]	Absolute number (items)
FB_SEND_052_SNVT_count_inc_f [▶ 317]	Increment counter (items(delta))
FB_SEND_053_SNVT_flow_f [▶ 319]	Volume flow (liters / second)
FB_SEND_054_SNVT_length_f [▶ 320]	Length (meter)
FB_SEND_055_SNVT_lev_cont_f [▶ 322]	Continuous change in value (% from maximum level)
FB_SEND_056_SNVT_mass_f [▶ 324]	Mass (gram)
FB_SEND_057_SNVT_power_f [▶ 325]	Power (watt)
FB_SEND_058_SNVT_ppm_f [▶ 327]	Concentration (ppm)
FB_SEND_059_SNVT_press_f [▶ 329]	Pressure (overpressure) (pascal)
FB_SEND_060_SNVT_res_f [▶ 330]	Electric resistance (ohm)
FB_SEND_061_SNVT_sound_db_f [▶ 332]	Sound pressure level (dBspl)

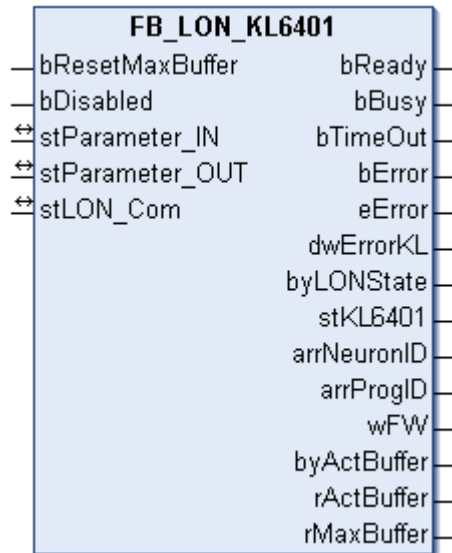
Function blocks	Description
FB SEND 062 SNVT speed f [▶ 334]	Linear velocity (meters / second)
FB SEND 063 SNVT temp f [▶ 335]	Temperature (°C)
FB SEND 064 SNVT time f [▶ 337]	Elapsed time (seconds)
FB SEND 065 SNVT vol f [▶ 339]	Volume (liter)
FB SEND 066 SNVT volt f [▶ 340]	Electrical voltage (volt)
FB SEND 067 SNVT btu f [▶ 342]	Thermal energy (Btu)
FB SEND 068 SNVT elec whr f [▶ 344]	Electric energy (Watt / hour)
FB SEND 069 SNVT config_src [▶ 345]	Configuration properties
FB SEND 070 SNVT color [▶ 347]	Color according to CIE standard
FB SEND 071 SNVT grammage [▶ 348]	American measure for paper weight and density
FB SEND 072 SNVT grammage f [▶ 350]	American measure for paper weight and density
FB SEND 073 SNVT file_req [▶ 351]	File request
FB SEND 074 SNVT file_status [▶ 353]	File information
FB SEND 075 SNVT freq f [▶ 354]	Frequency (hertz)
FB SEND 076 SNVT freq_hz [▶ 356]	Frequency (hertz)
FB SEND 077 SNVT freq_kilohz [▶ 358]	Frequency (kilohertz)
FB SEND 078 SNVT freq_milhz [▶ 359]	Frequency (millihertz)
FB SEND 079 SNVT lux [▶ 361]	Illuminance (lux)
FB SEND 081 SNVT lev_percent [▶ 363]	Percentage value
FB SEND 082 SNVT multiplier [▶ 364]	Multiplier
FB SEND 083 SNVT state [▶ 366]	Status information
FB SEND 084 SNVT time_stamp [▶ 367]	Time stamp
FB SEND 085 SNVT zerospan [▶ 369]	Zero point and proportionality factor
FB SEND 086 SNVT magcard [▶ 370]	ISO 7811 (40 hexadecimal numbers)
FB SEND 087 SNVT elapsed_tm [▶ 372]	Elapsed time
FB SEND 088 SNVT alarm [▶ 373]	Alarm status
FB SEND 089 SNVT currency [▶ 375]	Currency
FB SEND 090 SNVT file_pos [▶ 376]	File position
FB SEND 091 SNVT muldiv [▶ 378]	Gain factor/attenuation factor
FB SEND 092 SNVT_obj_request [▶ 379]	Function selection
FB SEND 093 SNVT_obj_status [▶ 381]	Object status
FB SEND 094 SNVT_preset [▶ 383]	Preliminary setting
FB SEND 095 SNVT_switch [▶ 385]	Switch
FB SEND 096 SNVT_trans_table [▶ 386]	Conversion table
FB SEND 097 SNVT_override [▶ 388]	Override mode
FB SEND 098 SNVT_pwr_fact [▶ 389]	Power factor
FB SEND 099 SNVT_pwr_fact_f [▶ 391]	Power factor
FB SEND 100 SNVT_density [▶ 392]	Density (kg/m³)
FB SEND 101 SNVT_density_f [▶ 394]	Density (kg/m³)
FB SEND 102 SNVT_rpm [▶ 396]	Angular velocity (revolutions/minute (RPM))
FB SEND 103 SNVT_hvac_emerg [▶ 397]	HVAC emergency mode
FB SEND 104 SNVT_angle_deg [▶ 399]	Angle indication
FB SEND 105 SNVT_temp_p [▶ 400]	Temperature (°C)

Function blocks	Description
FB_SEND 106 SNVT temp_setpt [► 402]	Temperature (6 temperature values)
FB_SEND 107 SNVT time_sec [► 403]	Elapsed time (second)
FB_SEND 108 SNVT hvac_mode [► 405]	HVAC operating mode
FB_SEND 109 SNVT occupancy [► 407]	Occupancy signal (states)
FB_SEND 110 SNVT area [► 408]	Area (square meter)
FB_SEND 111 SNVT hvac_overid [► 410]	HVAC override mode
FB_SEND 112 SNVT hvac_status [► 411]	HVAC status
FB_SEND 113 SNVT_press_p [► 413]	Pressure (overpressure) (pascal)
FB_SEND 114 SNVT_address [► 414]	Neuron address (16-bit address value)
FB_SEND 115 SNVT_scene [► 416]	Scenes
FB_SEND 116 SNVT_scene_cfg [► 417]	Scene setting
FB_SEND 117 SNVT_setting [► 419]	Settings
FB_SEND 118 SNVT_evap_state [► 421]	Evaporator status
FB_SEND 119 SNVT_therm_mode [► 422]	Thermostat mode
FB_SEND 120 SNVT_defr_mode [► 424]	Defrost mode
FB_SEND 121 SNVT_defr_term [► 425]	Completion of the defrost cycle
FB_SEND 122 SNVT_defr_state [► 427]	Defrost status (enumeration)
FB_SEND 123 SNVT_time_min [► 428]	Elapsed time (minutes)
FB_SEND 124 SNVT_time_hour [► 430]	Elapsed time (hour)
FB_SEND 125 SNVT_ph [► 431]	Acidity (pH)
FB_SEND 126 SNVT_ph_f [► 433]	Acidity (pH)
FB_SEND 127 SNVT_chlr_status [► 435]	Refrigeration unit status
FB_SEND 128 SNVT_tod_event [► 436]	Presence time
FB_SEND 129 SNVT_smo_obscur [► 438]	Darkening due to smoke
FB_SEND 130 SNVT_fire_test [► 439]	Request fire alarm system test
FB_SEND 131 SNVT_temp_ror [► 441]	Value of the temperature change/increase
FB_SEND 132 SNVT_fire_init [► 442]	Fire detector type
FB_SEND 133 SNVT_fire_indcte [► 444]	Fire alarm display
FB_SEND 134 SNVT_time_zone [► 445]	Time zone description
FB_SEND 135 SNVT_earth_pos [► 447]	Position on Earth
FB_SEND 136 SNVT_reg_val [► 448]	Register value
FB_SEND 137 SNVT_reg_val_ts [► 450]	Register value
FB_SEND 138 SNVT_volt_ac [► 451]	Alternating voltage
FB_SEND 139 SNVT_amp_ac [► 453]	Alternating current
FB_SEND 143 SNVT_turbidity [► 454]	Turbidity
FB_SEND 144 SNVT_turbidity_f [► 456]	Turbidity
FB_SEND 145 SNVT_hvac_type [► 458]	HVAC plant type
FB_SEND 146 SNVT_elec_kwh_l [► 459]	Electric energy (kW / hour)
FB_SEND 147 SNVT_temp_diff_p [► 461]	Temperature difference (°C)
FB_SEND 148 SNVT_ctrl_req [► 462]	Control request
FB_SEND 149 SNVT_ctrl_resp [► 464]	Control response
FB_SEND 150 SNVT_ptz [► 465]	Camera PTZ (SNZ)
FB_SEND 151 SNVT_privacyzone [► 467]	Private zone

Function blocks	Description
FB SEND 152 SNVT_pos_ctrl [► 468]	Position setting for cameras in networks
FB SEND 153 SNVT_enthalpy [► 470]	Enthalpy (kilojoules/kg)
FB SEND 154 SNVT_gfci_status [► 471]	Residual current circuit breaker status
FB SEND 155 SNVT_motor_state [► 473]	Motor status (motor status designation)
FB SEND 156 SNVT_pumpset_mn [► 474]	Pump group
FB SEND 157 SNVT_ex_control [► 476]	Exclusive control
FB SEND 158 SNVT_pumpset_sn [► 477]	Pump group sensor
FB SEND 159 SNVT_pump_sensor [► 479]	Pump sensor (speed, temperature, status)
FB SEND 160 SNVT_abs_humid [► 480]	Absolute humidity
FB SEND 161 SNVT_flow_p [► 482]	Volume flow (cubic meters / hour)
FB SEND 162 SNVT_dev_c_mode [► 484]	Device operating mode
FB SEND 163 SNVT_valve_mode [► 485]	Valve state
FB SEND 164 SNVT_alarm_2 [► 487]	Alarm status 2
FB SEND 165 SNVT_state_64 [► 488]	Status information (64 individual bit values)
FB SEND 166 SNVT_nv_type [► 490]	Network variable type
FB SEND 168 SNVT_ent_opmode [► 491]	Operating mode for access objects
FB SEND 169 SNVT_ent_state [► 493]	State for access objects
FB SEND 170 SNVT_ent_status [► 494]	Status of access objects
FB SEND 171 SNVT_flow_dir [► 496]	Flow direction
FB SEND 172 SNVT_hvac_satsts [► 497]	HVAC saturation status
FB SEND 173 SNVT_dev_status [► 499]	Device status
FB SEND 174 SNVT_dev_fault [► 500]	Error state
FB SEND 175 SNVT_dev_maint [► 502]	Device maintenance status
FB SEND 176 SNVT_date_event [► 503]	Event status
FB SEND 177 SNVT_sched_val [► 505]	Calendar value
FB SEND 180 SNVT_sblnd_state [► 506]	Blind status
FB SEND 181 SNVT_rac_ctrl [► 508]	Sound function control
FB SEND 182 SNVT_rac_req [► 509]	Sound function request
FB SEND 183 SNVT_count_32 [► 511]	Absolute counter
FB SEND 184 SNVT_clothes_w_c [► 512]	Washing machine / commands
FB SEND 185 SNVT_clothes_w_m [► 514]	Washing machine /management status
FB SEND 186 SNVT_clothes_w_s [► 515]	Washing machine / status
FB SEND 187 SNVT_clothes_w_a [► 517]	Washing machine / status
FB SEND 188 SNVT_multiplier_s [► 518]	Multiplier
FB SEND 189 SNVT_switch_2 [► 520]	Switch for setting scenes and settings.
FB SEND 190 SNVT_color_2 [► 521]	Color
FB SEND 191 SNVT_log_status [► 523]	Log status
FB SEND 192 SNVT_time_stamp_p [► 524]	Precise time stamp
FB SEND 193 SNVT_log_fx_request [► 526]	Log file transfer request
FB SEND 194 SNVT_log_fx_status [► 527]	Log file transfer status.
FB SEND 195 SNVT_log_request [► 529]	Log status request
FB SEND 196 SNVT_enthalpy_d [► 530]	Enthalpy difference (kJ/kg)
FB SEND 197 SNVT_amp_ac_mil [► 532]	Electric current (milliampere)

Function blocks	Description
FB_SEND 198 SNVT time hour p [► 534]	Time in hours
FB_SEND 199 SNVT lamp status [► 535]	Lamp status
FB_SEND 200 SNVT environment [► 537]	Environment
FB_SEND 201 SNVT geo loc [► 538]	Geographical location

4.1.1 FB_LON_KL6401



This function block is used for sending / receiving LON SNVTs via Bus Terminal KL6401. An instance of this block is required for each terminal. One instance can send or receive up to 62 SNVTs.

The FB must be tied to the send/receive blocks via the VAR_IN_OUT structure stLON_Com [stLON_Com](#) [► 665].



Restrictions

- Only one call per instance
- Call must be made once per PLC cycle
- Instance must be called in the same PLC task as the send and receive blocks assigned to it

Inputs

```
VAR_INPUT
    bResetMaxBuffer : BOOL;
    bDisabled       : BOOL := FALSE;;
END_VAR
```

Name	Type	Description
bResetMaxBuffer	BOOL	Deletes the value <i>rMaxBuffer</i> for the maximum utilization of the transmit buffer.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stParameter_IN      : ST_LON_Parameter_IN_36B;
    stParameter_OUT     : ST_LON_Parameter_OUT_36B;
    stLON_Com           : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stParameter_IN	ST_LON_Parameter_IN_36 B [► 663]	Input variable of the hardware.
stParameter_OUT	ST_LON_Parameter_OUT_36 B [► 664]	Output variable of the hardware.
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link the function block with the send/receive blocks. The actual sending and receiving is realized in this function block. The transmit/receive blocks only deal with preparation/evaluation of the data.

Outputs

```

VAR_OUTPUT
  bReady      : BOOL;
  bBusy       : BOOL;
  bTimeout    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
  dwErrorKL   : DWORD;
  byLONState  : BYTE;
  stKL6401    : ST_KL6401;
  arrNeuronID : ARRAY [0..5] OF BYTE;
  arrProgID   : ARRAY [0..7] OF BYTE;
  wFW         : WORD;
  byActBuffer : BYTE;
  rActBuffer  : REAL;
  rMaxBuffer  : REAL;
END_VAR

```

Name	Type	Description
bReady	BOOL	The initialization is complete.
bBusy	BOOL	The output is TRUE as long as values are sent.
bTimeout	BOOL	Timeout during initialization.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.
dwErrorKL	DWORD	Error ID [► 707] of the function block. In this case the variable <i>eError</i> has the value "eKL6401_Error". <i>bError</i> goes TRUE at the same time.
byLONState	BYTE	LON state.
stKL6401	ST_KL6401 [► 667]	Structure for the configuration (for future applications).
arrNeuronID	ARRAY OF BYTE	Neuron ID of the terminal (supported since firmware 4C).
arrProgID	ARRAY OF BYTE	Program ID of the terminal (supported since firmware 4C).
wFW	WORD	Terminal firmware (supported since firmware 4C).
byActBuffer	BYTE	Number of instructions in the transmit buffer.
rActBuffer	REAL	Current utilization of the transmit buffer in percent.
rMaxBuffer	REAL	Maximum utilization of the transmit buffer in percent. The value can be reset with the input variable <i>bResetMaxBuffer</i> .

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2 Read

Function blocks	Description
FB_READ_001_SNVT_amp [► 33]	Electric current (ampere)
FB_READ_002_SNVT_amp_mil [► 34]	Electric current (milliampere)
FB_READ_003_SNVT_angle [► 35]	Angular distance (radian)
FB_READ_004_SNVT_angle_vel [► 36]	Angular velocity (radian / second)
FB_READ_005_SNVT_btu_kilo [► 37]	Thermal energy (kiloBtu)
FB_READ_006_SNVT_btu_mega [► 38]	Thermal energy (megaBtu)
FB_READ_007_SNVT_char_ascii [► 39]	ASCII character (8-bit ASCII character)
FB_READ_008_SNVT_count [► 40]	Absolute number (items)
FB_READ_009_SNVT_count_inc [► 42]	Increment counter (items(delta))
FB_READ_011_SNVT_date_day [► 43]	Day of the week
FB_READ_013_SNVT_elec_kwh [► 44]	Electric energy (kW/h)
FB_READ_014_SNVT_elec_whr [► 45]	Electric energy (W/h)
FB_READ_015_SNVT_flow [► 46]	Volume flow (liters / second)
FB_READ_016_SNVT_flow_mil [► 47]	Volume flow (milliliters / second)
FB_READ_017_SNVT_length [► 48]	Length (meter)
FB_READ_018_SNVT_length_kilo [► 49]	Length (kilometer)
FB_READ_019_SNVT_length_micr [► 50]	Length (micrometer)
FB_READ_020_SNVT_length_mil [► 51]	Length (millimeter)
FB_READ_021_SNVT_lev_cont [► 52]	Continuous change in value (% from maximum level)
FB_READ_023_SNVT_mass [► 53]	Mass (gram)
FB_READ_024_SNVT_mass_kilo [► 54]	Mass (kilogram)
FB_READ_025_SNVT_mass_mega [► 55]	Mass (metric ton)
FB_READ_026_SNVT_mass_mil [► 56]	Mass (milligram)
FB_READ_027_SNVT_power [► 57]	Power (watt)
FB_READ_028_SNVT_power_kilo [► 59]	Power (kilowatt)
FB_READ_029_SNVT_ppm [► 60]	Concentration (ppm)
FB_READ_030_SNVT_press [► 61]	Pressure (overpressure) (kilopascal)
FB_READ_031_SNVT_res [► 62]	Electric resistance (ohm)
FB_READ_032_SNVT_res_kilo [► 63]	Electric resistance (kilohm)
FB_READ_033_SNVT_sound_db [► 64]	Sound pressure level (dB)
FB_READ_034_SNVT_speed [► 65]	Linear velocity (meters / second)
FB_READ_035_SNVT_speed_mil [► 66]	Linear velocity (millimeters / second)
FB_READ_036_SNVT_str_asc [► 67]	String
FB_READ_037_SNVT_str_int [► 68]	Wide Character String
FB_READ_038_SNVT_telcom [► 69]	Telephone status (telephone status name)
FB_READ_039_SNVT_temp [► 70]	Temperature (°C)
FB_READ_041_SNVT_vol [► 71]	Volume (liter)
FB_READ_042_SNVT_vol_kilo [► 72]	Volume (kiloliter)
FB_READ_043_SNVT_vol_mil [► 73]	Volume (milliliter)
FB_READ_044_SNVT_volt [► 74]	Electrical voltage (volt)
FB_READ_045_SNVT_volt_dbmv [► 75]	Electrical voltage (dB microvolt)
FB_READ_046_SNVT_volt_kilo [► 76]	Electrical voltage (kilovolt)

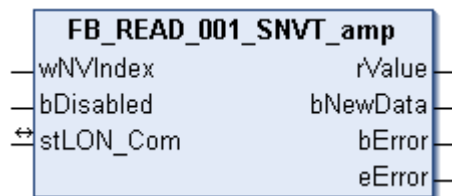
Function blocks	Description
FB READ 047 SNVT volt mil [► 77]	Electrical voltage (millivolt)
FB READ 048 SNVT amp f [► 78]	Electric current (ampere)
FB READ 049 SNVT angle f [► 79]	Angular distance (radian)
FB READ 050 SNVT angle vel f [► 80]	Angular velocity (radian / second)
FB READ 051 SNVT count f [► 81]	Absolute number (items)
FB READ 052 SNVT count inc f [► 82]	Increment counter (items(delta))
FB READ 053 SNVT flow f [► 84]	Volume flow (liters / second)
FB READ 054 SNVT length f [► 85]	Length (meter)
FB READ 055 SNVT lev cont f [► 86]	Continuous change in value (% from maximum level)
FB READ 056 SNVT mass f [► 87]	Mass (gram)
FB READ 057 SNVT power f [► 88]	Power (watt)
FB READ 058 SNVT ppm f [► 89]	Concentration (ppm)
FB READ 059 SNVT press f [► 90]	Pressure (overpressure) (pascal)
FB READ 060 SNVT res f [► 91]	Electric resistance (ohm)
FB READ 061 SNVT sound db f [► 92]	Sound pressure level (dBspl)
FB READ 062 SNVT speed f [► 93]	Linear velocity (meters / second)
FB READ 063 SNVT temp f [► 94]	Temperature (°C)
FB READ 064 SNVT time f [► 95]	Elapsed time (seconds)
FB READ 065 SNVT vol f [► 96]	Volume (liter)
FB READ 066 SNVT volt f [► 97]	Electrical voltage (volt)
FB READ 067 SNVT btu f [► 98]	Thermal energy (Btu)
FB READ 068 SNVT elec whr f [► 99]	Electric energy (Watt / hour)
FB READ 069 SNVT config_src [► 100]	Configuration properties
FB READ 070 SNVT color [► 101]	Color according to CIE standard
FB READ 071 SNVT grammage [► 102]	American measure for paper weight and density
FB READ 072 SNVT grammage f [► 103]	American measure for paper weight and density
FB READ 073 SNVT file_req [► 104]	File request
FB READ 074 SNVT file_status [► 105]	File information
FB READ 075 SNVT freq f [► 106]	Frequency (hertz)
FB READ 076 SNVT freq_hz [► 107]	Frequency (hertz)
FB READ 077 SNVT freq_kilohz [► 108]	Frequency (kilohertz)
FB READ 078 SNVT freq_milhz [► 109]	Frequency (millihertz)
FB READ 079 SNVT lux [► 110]	Illuminance (lux)
FB READ 081 SNVT lev_percent [► 111]	Percentage value
FB READ 082 SNVT multiplier [► 112]	Multiplier
FB READ 083 SNVT state [► 113]	Status information
FB READ 084 SNVT time_stamp [► 114]	Time stamp
FB READ 085 SNVT_zerospanspan [► 116]	Zero point and proportionality factor
FB READ 086 SNVT_magcard [► 117]	ISO 7811 (40 hexadecimal numbers)
FB READ 087 SNVT_elapsed_tm [► 118]	Elapsed time
FB READ 088 SNVT_alarm [► 119]	Alarm status
FB READ 089 SNVT_currency [► 120]	Currency
FB READ 090 SNVT_file_pos [► 121]	File position

Function blocks	Description
FB READ 091 SNVT muldiv [► 122]	Gain factor/attenuation factor
FB READ 092 SNVT obj_request [► 123]	Function selection
FB READ 093 SNVT obj_status [► 124]	Object status
FB READ 094 SNVT preset [► 125]	Preliminary setting
FB READ 095 SNVT switch [► 126]	Switch
FB READ 096 SNVT trans table [► 127]	Conversion table
FB READ 097 SNVT override [► 129]	Override mode
FB READ 098 SNVT pwr fact [► 130]	Power factor
FB READ 099 SNVT pwr fact f [► 131]	Power factor
FB READ 100 SNVT density [► 132]	Density (kg/m³)
FB READ 101 SNVT density f [► 133]	Density (kg/m³)
FB READ 102 SNVT rpm [► 134]	Angular velocity (revolutions/minute (RPM))
FB READ 103 SNVT hvac emerg [► 135]	HVAC emergency mode
FB READ 104 SNVT angle deg [► 136]	Angle indication
FB READ 105 SNVT temp p [► 137]	Temperature (°C)
FB READ 106 SNVT temp setpt [► 138]	Temperature (6 temperature values)
FB READ 107 SNVT time sec [► 139]	Elapsed time (second)
FB READ 108 SNVT hvac mode [► 140]	HVAC operating mode
FB READ 109 SNVT occupancy [► 141]	Occupancy signal (states)
FB READ 110 SNVT area [► 142]	Area (square meter)
FB READ 111 SNVT hvac overid [► 143]	HVAC override mode
FB READ 112 SNVT hvac status [► 145]	HVAC status
FB READ 113 SNVT press p [► 146]	Pressure (overpressure) (pascal)
FB READ 114 SNVT address [► 147]	Neuron address
FB READ 115 SNVT scene [► 148]	Scenes
FB READ 116 SNVT scene cfg [► 149]	Scene setting
FB READ 117 SNVT setting [► 150]	Settings
FB READ 118 SNVT evap state [► 151]	Evaporator status
FB READ 119 SNVT therm mode [► 152]	Thermostat mode
FB READ 120 SNVT defr mode [► 153]	Defrost mode
FB READ 121 SNVT defr term [► 154]	Completion of the defrost cycle
FB READ 122 SNVT defr state [► 155]	Defrost status (enumeration)
FB READ 123 SNVT time min [► 156]	Elapsed time (minutes)
FB READ 124 SNVT time hour [► 157]	Elapsed time (hour)
FB READ 125 SNVT ph [► 159]	Acidity (pH)
FB READ 126 SNVT ph f [► 160]	Acidity (pH)
FB READ 127 SNVT chlr status [► 161]	Refrigeration unit status
FB READ 128 SNVT tod event [► 162]	Presence time
FB READ 129 SNVT smo obscur [► 163]	Darkening due to smoke
FB READ 130 SNVT fire test [► 164]	Request fire alarm system test
FB READ 131 SNVT temp ror [► 165]	Value of the temperature change/increase
FB READ 132 SNVT fire init [► 166]	Fire detector type
FB READ 133 SNVT fire indcte [► 167]	Fire alarm display

Function blocks	Description
FB READ 134 SNVT time zone [► 168]	Time zone description
FB READ 135 SNVT earth pos [► 169]	Position on Earth
FB READ 136 SNVT reg_val [► 170]	Register value
FB READ 137 SNVT reg_val ts [► 171]	Register value
FB READ 138 SNVT volt_ac [► 172]	Alternating voltage (Volt AC)
FB READ 139 SNVT amp_ac [► 173]	Alternating current
FB READ 143 SNVT turbidity [► 175]	Turbidity
FB READ 144 SNVT turbidity f [► 176]	Turbidity
FB READ 145 SNVT hvac_type [► 177]	HVAC plant type
FB READ 146 SNVT elec_kwh_l [► 178]	Electric energy (kW / hour)
FB READ 147 SNVT temp_diff_p [► 179]	Temperature difference (°C)
FB READ 148 SNVT ctrl_req [► 180]	Control request
FB READ 149 SNVT ctrl_resp [► 181]	Control response
FB READ 150 SNVT ptz [► 182]	Camera PTZ (SNZ)
FB READ 151 SNVT privacyzone [► 183]	Private zone
FB READ 152 SNVT pos_ctrl [► 184]	Position setting for cameras in networks
FB READ 153 SNVT enthalpy [► 185]	Enthalpy (kilojoules/kg)
FB READ 154 SNVT gfci_status [► 186]	Residual current circuit breaker status
FB READ 155 SNVT motor_state [► 187]	Motor status (motor status designation)
FB READ 156 SNVT pumpset_mn [► 188]	Pump group
FB READ 157 SNVT ex_control [► 189]	Exclusive control
FB READ 158 SNVT pumpset_sn [► 190]	Pump group sensor
FB READ 159 SNVT pump_sensor [► 192]	Pump sensor
FB READ 160 SNVT abs_humid [► 193]	Absolute humidity
FB READ 161 SNVT flow_p [► 194]	Volume flow (cubic meters / hour)
FB READ 162 SNVT dev_c_mode [► 195]	Device operating mode
FB READ 163 SNVT valve_mode [► 196]	Valve state
FB READ 164 SNVT alarm_2 [► 197]	Alarm status 2
FB READ 165 SNVT state_64 [► 198]	Status information (64 individual bit values)
FB READ 166 SNVT nv_type [► 199]	Network variable type
FB READ 168 SNVT ent_opmode [► 200]	Operating mode for access objects
FB READ 169 SNVT ent_state [► 201]	State for access objects
FB READ 170 SNVT ent_status [► 202]	Status of access objects
FB READ 171 SNVT flow_dir [► 203]	Flow direction
FB READ 172 SNVT hvac_satsts [► 205]	HVAC saturation status
FB READ 173 SNVT dev_status [► 206]	Device status
FB READ 174 SNVT dev_fault [► 207]	Error state
FB READ 175 SNVT dev_maint [► 208]	Device maintenance status
FB READ 176 SNVT date_event [► 209]	Event status
FB READ 177 SNVT sched_val [► 210]	Calendar value
FB READ 180 SNVT sbld_state [► 211]	Blind status
FB READ 181 SNVT rac_ctrl [► 212]	Sound function control
FB READ 182 SNVT rac_req [► 213]	Sound function request

Function blocks	Description
FB_READ 183 SNVT count 32 [► 214]	Absolute counter
FB_READ 184 SNVT clothes w c [► 215]	Washing machine / commands
FB_READ 185 SNVT clothes w m [► 216]	Washing machine /management status
FB_READ 186 SNVT clothes w s [► 218]	Washing machine / status
FB_READ 187 SNVT clothes w a [► 219]	Washing machine / alarm messages
FB_READ 188 SNVT multiplier s [► 220]	Multiplier
FB_READ 189 SNVT switch 2 [► 221]	Switch for setting scenes and settings.
FB_READ 190 SNVT color 2 [► 222]	Color
FB_READ 191 SNVT log status [► 223]	Log status
FB_READ 192 SNVT time stamp p [► 224]	Precise time stamp
FB_READ 193 SNVT log fx request [► 225]	Log file transfer request
FB_READ 194 SNVT log fx status [► 226]	Log file transfer status
FB_READ 195 SNVT log request [► 227]	Log status request
FB_READ 196 SNVT enthalpy d [► 228]	Enthalpy difference (kJ/kg)
FB_READ 197 SNVT amp ac mil [► 230]	Electric current (milliampere)
FB_READ 198 SNVT time hour p [► 231]	Time in hours
FB_READ 199 SNVT lamp status [► 232]	Lamp status
FB_READ 200 SNVT environment [► 233]	Environment
FB_READ 201 SNVT geo loc [► 234]	Geographical location

4.1.2.1 FB_READ_001_SNVT_amp



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_amp.

SNVT number: 001.

Description: Electric current (ampere).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

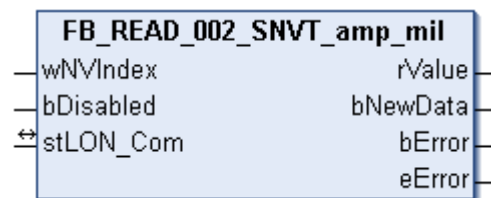
```
VAR_OUTPUT
  rValue      : REAL;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.2 FB_READ_002_SNVT_amp_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_amp_mil.

SNVT number: 002.

Description: Electric current (milliampere).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

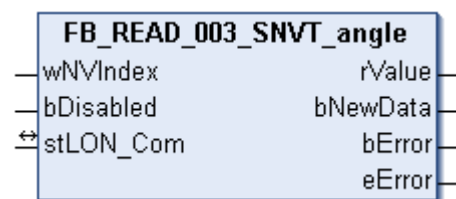
```
VAR_OUTPUT
    rValue      : REAL;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.3 FB_READ_003_SNVT_angle



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_angle.

SNVT number: 003.

Description: Angular distance (radian).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

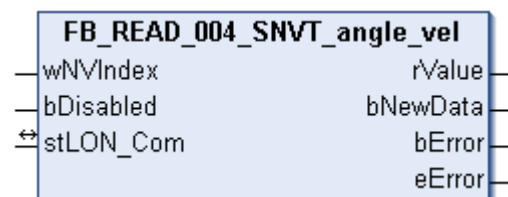
```
VAR_OUTPUT
  rValue      : REAL;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 65,535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.4 FB_READ_004_SNVT_angle_vel



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_angle_vel.

SNVT number: 004.

Description: Angular velocity (radian / second).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

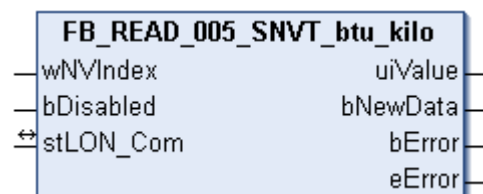
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.5 FB_READ_005_SNVT_btu_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_btu_kilo.

SNVT number: 005.

Description: Thermal energy (kiloBtu).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

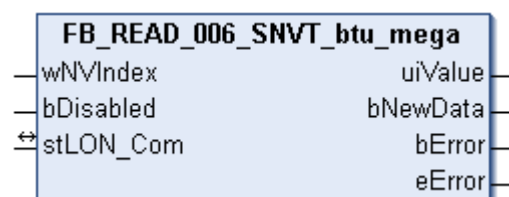
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.6 FB_READ_006_SNVT_btu_mega



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_btu_mega.

SNVT number: 006.

Description: ASCII character (8-bit ASCII character).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

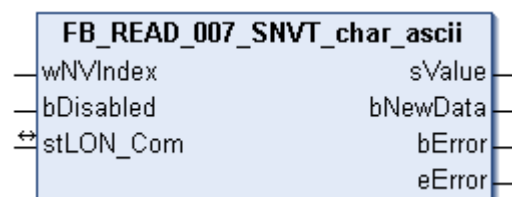
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.7 FB_READ_007_SNVT_char_ascii



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_char_ascii.

SNVT number: 007.

Description: ASCII character (8-bit ASCII character).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

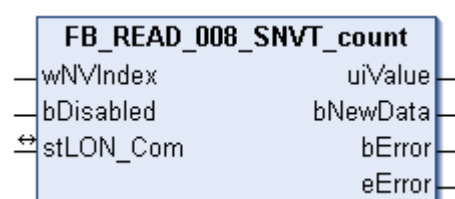
```
VAR_OUTPUT
    sValue : STRING(1);
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
sValue	STRING	STRING(1).
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.8 FB_READ_008_SNVT_count



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_count.

SNVT number: 008.

Description: Counter (only positive values).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

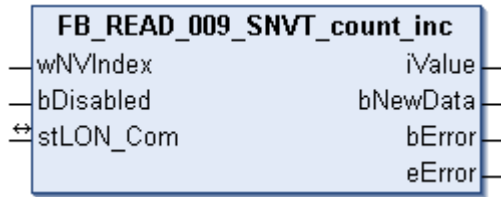
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.9 FB_READ_009_SNVT_count_inc



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_count_inc.

SNVT number: 009.

Description: Counter (negative and positive values).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    iValue : INT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

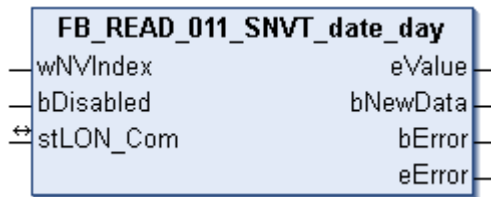
```

Name	Type	Description
iValue	INT	Min: -32768 / Max: 32767.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.10 FB_READ_011_SNVT_date_day



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_date_day.

SNVT number: 011.

Description: Day of the week.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

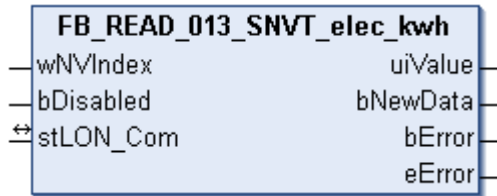
VAR_OUTPUT
    eValue : E_LON_days_of_week_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
eValue	E_LON_days_of_week_t [► 593]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.11 FB_READ_013_SNVT_elec_kwh



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_elec_kwh.

SNVT number: 013.

Description: Electric energy (kW/h).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  uiValue : UINT;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

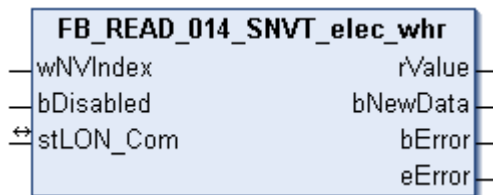
Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.12 FB_READ_014_SNVT_elec_whr



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_elec_whr.

SNVT number: 014.

Description: Electric energy (W/h).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

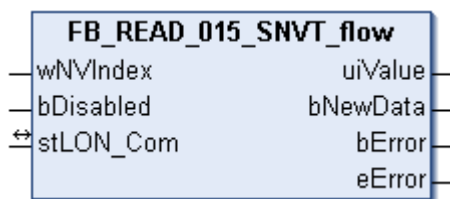
Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.13 FB_READ_015_SNVT_flow



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_flow.

SNVT number: 015.

Description: Volume flow (liters / second).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

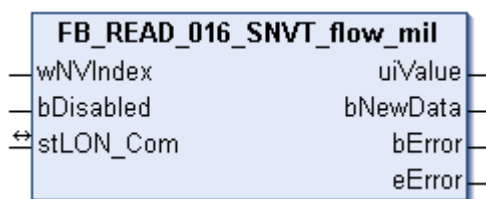
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.14 FB_READ_016_SNVT_flow_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_flow_mil.

SNVT number: 016.

Description: Volume flow (milliliters / second).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;

```



```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

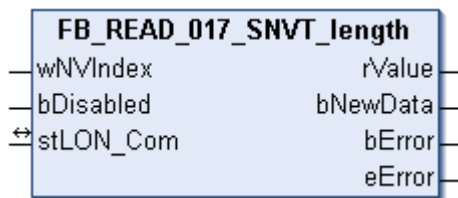
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.15 FB_READ_017_SNVT_length



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_length.

SNVT number: 017.

Description: Length (meter).

Inputs

```

VAR_INPUT
  wNVIndex    : WORD;
  bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

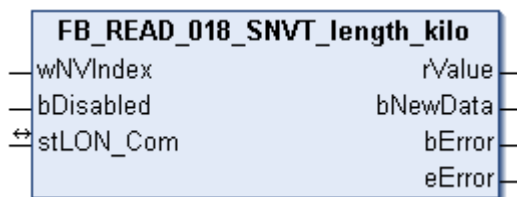
```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.16 FB_READ_018_SNVT_length_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_length_kilo.

SNVT number: 018.

Description: Length (kilometer).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST LON Communication [► 665]	This structure is used to link <u>FB LON KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

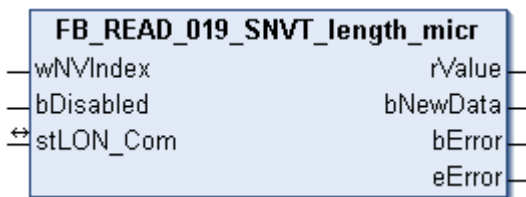
```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.17 FB_READ_019_SNVt_length_micr



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_length_micr.

SNVT number: 019.

Description: Length (micrometer).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

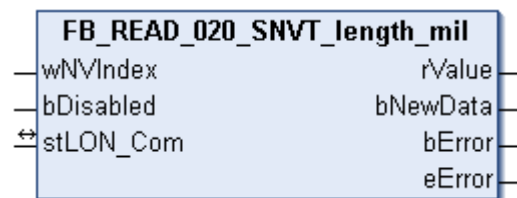
```
VAR_OUTPUT
  rValue      : REAL;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.18 FB_READ_020_SNVT_length_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_length_mil.

SNVT number: 020.

Description: Length (millimeter).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

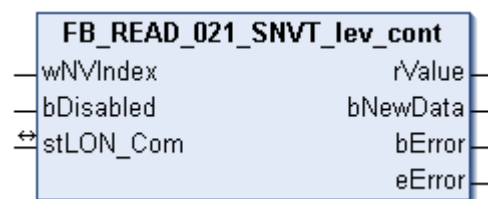
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.19 FB_READ_021_SNVT_lev_cont



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_lev_cont.

SNVT number: 021.

Description: Continuous change in value (% from maximum level).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

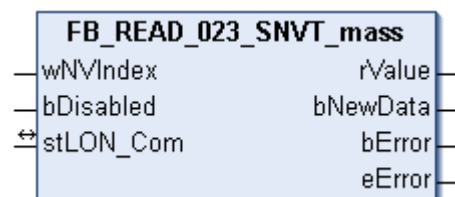
```
VAR_OUTPUT
    rValue      : REAL;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 100.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.20 FB_READ_023_SNVT_mass



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_mass.

SNVT number: 023.

Description: Mass (gram).

Inputs

```
VAR_INPUT
    wNVIndex    : WORD;
    bDisabled   : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> <u>[► 27]</u> with the transmit/receive blocks.

Outputs

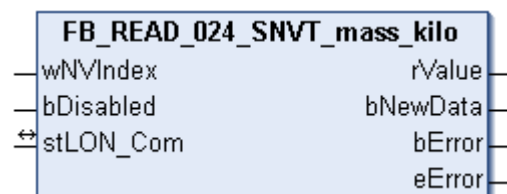
```
VAR_OUTPUT
    rValue    : REAL;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> <u>[► 557]</u>	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.21 FB_READ_024_SNVT_mass_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_mass_kilo.

SNVT number: 024.

Description: Mass (kilogram).

Inputs

```
VAR_INPUT
    wNVIndex    : WORD;
    bDisabled   : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

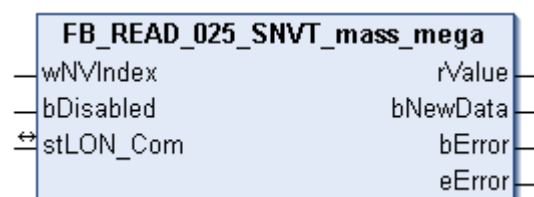
```
VAR_OUTPUT
    rValue    : REAL;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.22 FB_READ_025_SNVT_mass_mega



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_mass_mega.

SNVT number: 025.

Description: Mass (metric ton).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

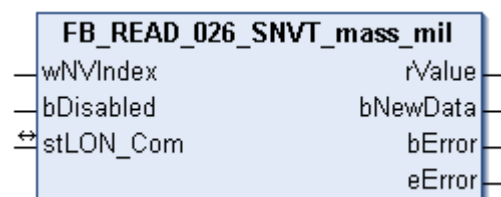
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.23 FB_READ_026_SNVT_mass_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_mass_mil.

SNVT number: 026.

Description: Mass (milligram).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> <u>[► 27]</u> with the transmit/receive blocks.

Outputs

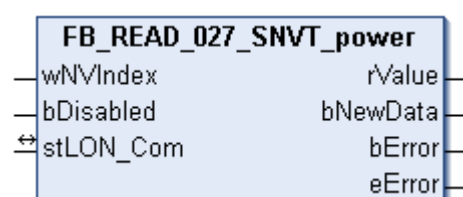
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> <u>[► 557]</u>	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.24 FB_READ_027_SNVT_power



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_power.

SNVT number: 027.

Description: Power (watt).

Inputs

```
VAR_INPUT
    wNVIndex   : WORD;
    bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

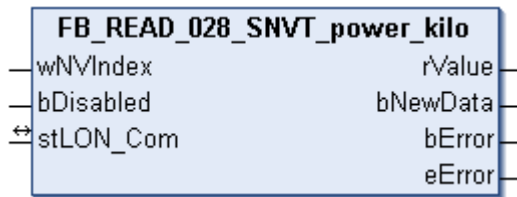
```
VAR_OUTPUT
    rValue   : REAL;
    bNewData : BOOL;
    bError   : BOOL;
    eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.25 FB_READ_028_SNVT_power_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_power_kilo.

SNVT number: 028.

Description: Power (kilowatt).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

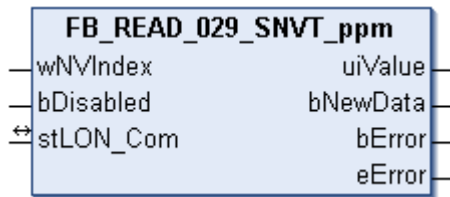
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.26 FB_READ_029_SNVT_ppm



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ppm.

SNVT number: 029.

Description: Concentration (ppm).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.27 FB_READ_030_SNVT_press



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_press.

SNVT number: 030.

Description: Pressure (overpressure) (kilopascal).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.28 FB_READ_031_SNVT_res



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_res.

SNVT number: 031.

Description: Electric resistance (ohm).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

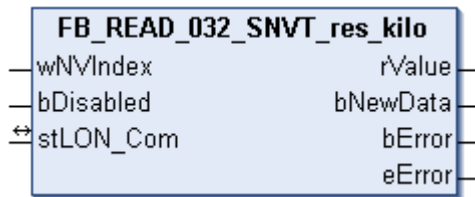
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.29 FB_READ_032_SNVT_res_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_res_kilo.

SNVT number: 032.

Description: Electric resistance (kiloohm).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

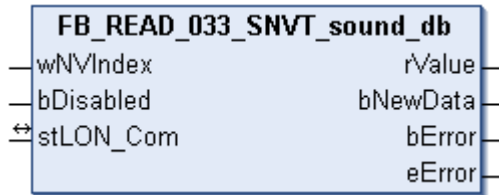
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.30 FB_READ_033_SNVT_sound_db



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_sound_db.

SNVT number: 033.

Description: Sound pressure level (dB).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

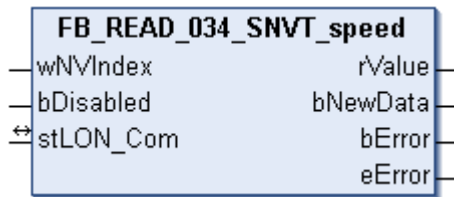
```

Name	Type	Description
rValue	REAL	Min: -327.68 / Max: 327.67.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.31 FB_READ_034_SNVT_speed



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_speed.

SNVT number: 034.

Description: Linear velocity (meters / second).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

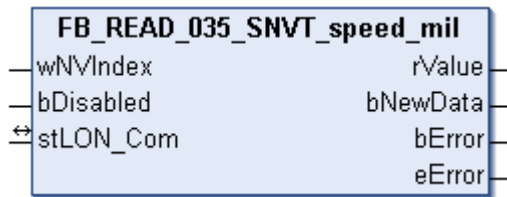
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.32 FB_READ_035_SNVT_speed_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_speed_mil.

SNVT number: 035.

Description: Linear velocity (millimeters / second).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

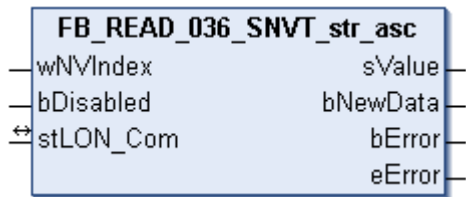
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 65,535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.33 FB_READ_036_SNVT_str_asc



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_str_asc.

SNVT number: 036.

Description: String (max. 30 characters) (ASCII string).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    sValue : STRING(31);
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

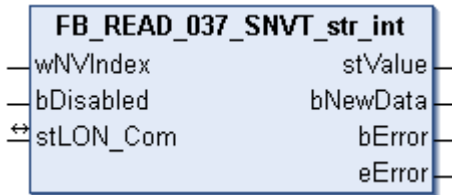
```

Name	Type	Description
sValue	STRING	STRING(31)
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.34 FB_READ_037_SNVT_str_int



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_str_int.

SNVT number: 037.

Description: Wide character string with own code (max. 15 characters) (wide character string).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

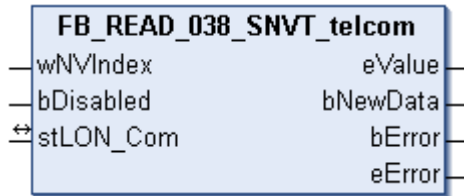
VAR_OUTPUT
    stValue : ST_LON_SNVT_str_int;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
stValue	ST_LON_SNVT_str_int [► 695]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.35 FB_READ_038_SNVT_telcom



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_telcom.

SNVT number: 038.

Description: Telephone status (telephone status name).

Inputs

```
VAR_INPUT
  wNVIndex   : WORD;
  bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  eValue   : E_LON_telcom_states_t;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

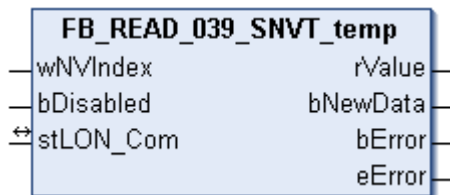
Name	Type	Description
eValue	E_LON_telcom_states_t [► 627]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.36 FB_READ_039_SNVTemp



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp.

SNVT number: 039.

Description: Temperature (°C).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL64010</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

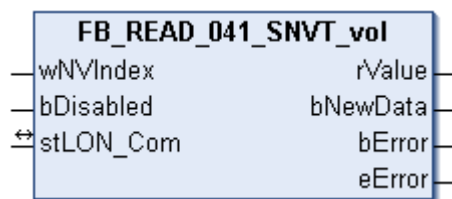
Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.37 FB_READ_041_SNVT_vol



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_vol.

SNVT number: 041.

Description: Volume (liter).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

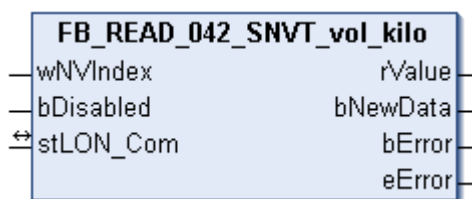
```


Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.38 FB_READ_042_SNVT_vol_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_vol_kilo.

SNVT number: 042.

Description: Volume (kiloliter).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;

```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

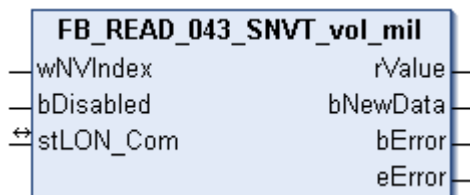
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.39 FB_READ_043_SNVT_vol_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_vol_mil.

SNVT number: 043.

Description: Volume (milliliter).

Inputs

```

VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

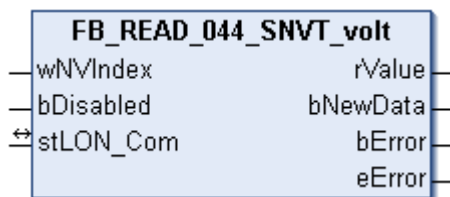
```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.40 FB_READ_044_SNVt_volt



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt.

SNVT number: 044.

Description: Electrical voltage (volt).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

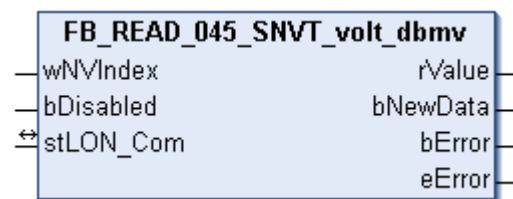
```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.41 FB_READ_045_SNVt_volt_dbmv



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt_dbmv.

SNVT number: 045.

Description: Electrical voltage (dB microvolt).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

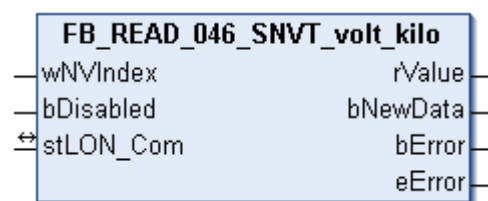
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -327.68 / Max: 327.67.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.42 FB_READ_046_SNVt_volt_kilo



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt_kilo.

SNVT number: 046.

Description: Electrical voltage (kilovolt).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

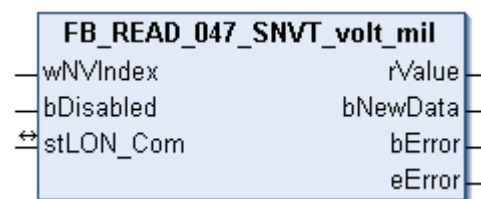
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.43 FB_READ_047_SNVt_volt_mil



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt_mil.

SNVT number: 047.

Description: Electrical voltage (millivolt).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

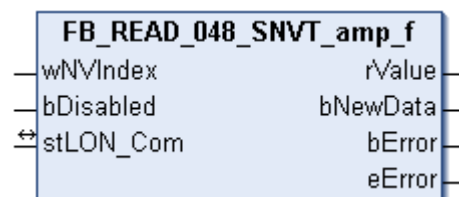
```
VAR_OUTPUT
  rValue      : REAL;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.44 FB_READ_048_SNVT_amp_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_amp_f.

SNVT number: 048.

Description: Electric current (ampere).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

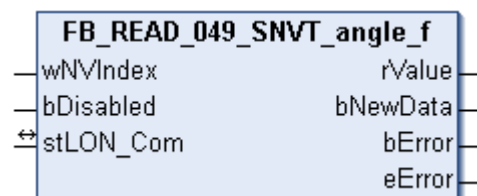
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.45 FB_READ_049_SNVT_angle_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_angle_f.

SNVT number: 049.

Description: Angular distance (radian).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

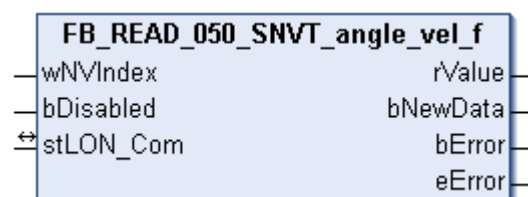
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.46 FB_READ_050_SNVT_angle_vel_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_angle_vel_f.

SNVT number: 050.

Description: Angular velocity (radian / second).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

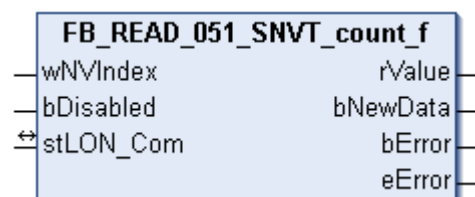
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.47 FB_READ_051_SNVT_count_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_count_f.

SNVT number: 051.

Description: Absolute number (items).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

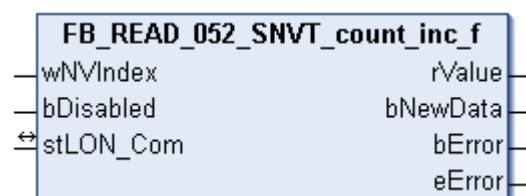
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.48 FB_READ_052_SNVT_count_inc_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_count_inc_f.

SNVT number: 052.

Description: Increment counter (items(delta)).

Inputs

```
VAR_INPUT
    wNVIndex   : WORD;
    bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

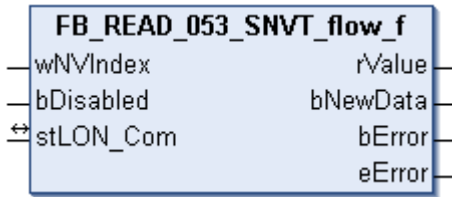
```
VAR_OUTPUT
    rValue   : REAL;
    bNewData : BOOL;
    bError   : BOOL;
    eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.49 FB_READ_053_SNVF_flow_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_flow_f.

SNVT number: 053.

Description: Volume flow (liters / second).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

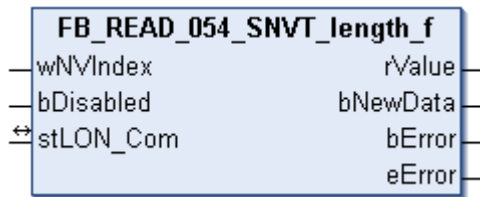
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.50 FB_READ_054_SNVT_length_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_length_f.

SNVT number: 054.

Description: Length (meter).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

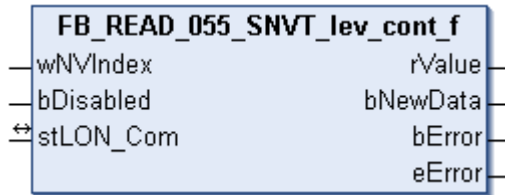
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.51 FB_READ_055_SNVT_lev_cont_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_lev_cont_f.

SNVT number: 055.

Description: Continuous change in value (% from maximum level).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

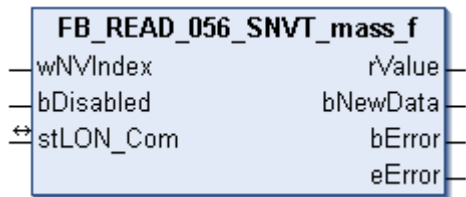
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 100.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.52 FB_READ_056_SNVT_mass_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_mass_f.

SNVT number: 056.

Description: Mass (gram).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

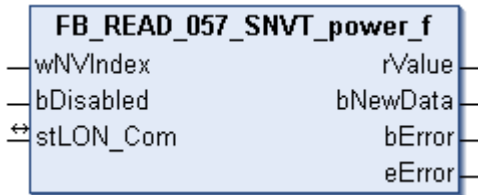
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.53 FB_READ_057_SNVT_power_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_power_f.

SNVT number: 057.

Description: Power (watt).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

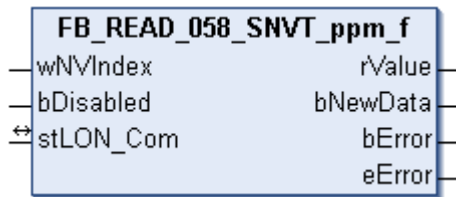
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.54 FB_READ_058_SNVT_ppm_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ppm_f.

SNVT number: 058.

Description: Concentration (ppm).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

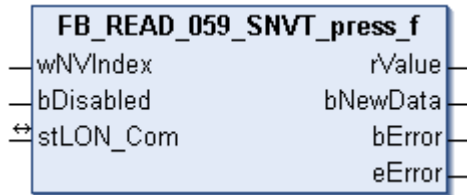
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.55 FB_READ_059_SNVT_press_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_press_f.

SNVT number: 059.

Description: Pressure (overpressure) (pascal).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.56 FB_READ_060_SNVT_res_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_res_f.

SNVT number: 060.

Description: Electric resistance (ohm).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

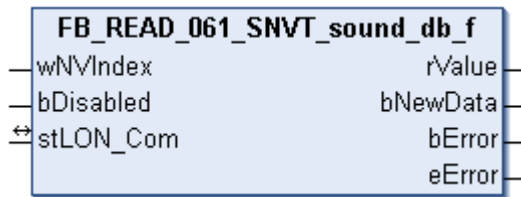
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.57 FB_READ_061_SNVT_sound_db_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_sound_db_f.

SNVT number: 061.

Description: Sound pressure level (dBspl).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

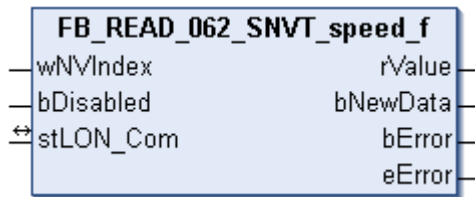
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.58 FB_READ_062_SNVT_speed_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_speed_f.

SNVT number: 062.

Description: Linear velocity (meters / second).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

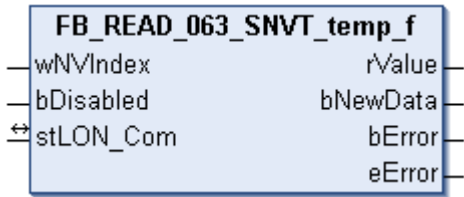
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.59 FB_READ_063_SNVTemp_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp_f.

SNVT number: 063.

Description: Temperature (°C).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

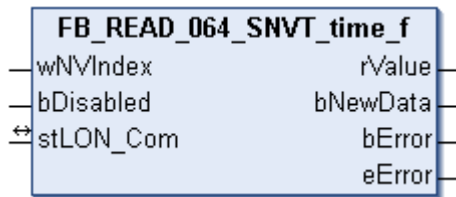
```

Name	Type	Description
rValue	REAL	Min: -273.17 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.60 FB_READ_064_SNVT_time_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_f.

SNVT number: 064.

Description: Elapsed time (seconds).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.61 FB_READ_065_SNVT_vol_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_vol_f.

SNVT number: 065.

Description: Volume (liter).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.62 FB_READ_066_SNVT_volt_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt_f.

SNVT number: 066.

Description: Electrical voltage (volt).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

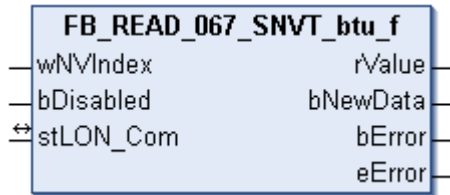
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.63 FB_READ_067_SNVt_btu_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_btu_f.

SNVT number: 067.

Description: Thermal energy (Btu).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

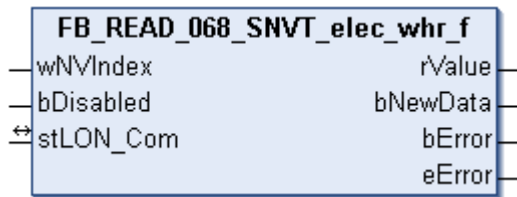
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.64 FB_READ_068_SNVT_elec_whr_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_elec_whr_f.

SNVT number: 068.

Description: Electric energy (Watt / hour).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

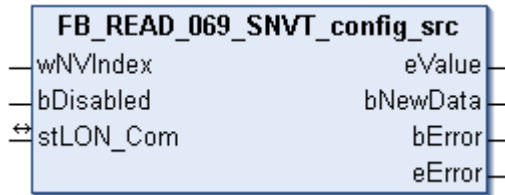
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.65 FB_READ_069_SNVT_config_src



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_config_src.

SNVT number: 069.

Description: Configuration properties (name of the configuration source (0=own, 1=external)).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

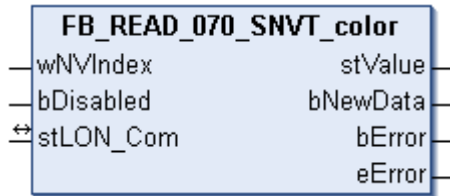
```
VAR_OUTPUT
    eValue : E_LON_config_source_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_config_source_t [► 589]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.66 FB_READ_070_SNVT_color



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_color.

SNVT number: 070.

Description: Color according to CIE standard (L*,a*,b).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_color;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

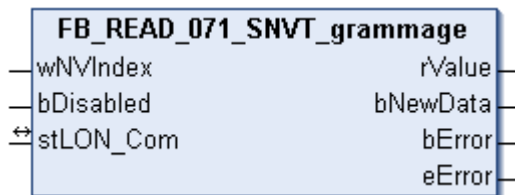
Name	Type	Description
stValue	ST_LON_SNVT_color [► 674]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.67 FB_READ_071_SNVT_grammage



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_grammage.

SNVT number: 071.

Description: American dimension for paper weight and density (gram/m2).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

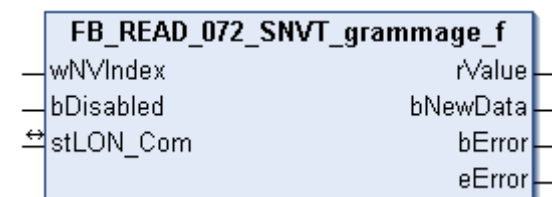
Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.68 FB_READ_072_SNVT_grammage_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_grammage_f.

SNVT number: 072.

Description: American dimension for paper weight and density (gram/m2).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

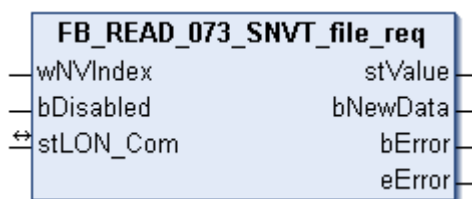
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```


Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.69 FB_READ_073_SNVT_file_req



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_file_req.

SNVT number: 073.

Description: File request.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  stValue : ST_LON_SNVT_file_req;
  bNewData : BOOL;
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

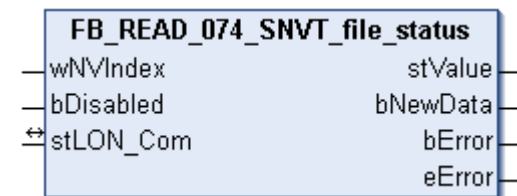
```

Name	Type	Description
stValue	ST_LON_SNVT_file_req [► 680]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.70 FB_READ_074_SNVT_file_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_file_status.

SNVT number: 074.

Description: File information (part of the LONWORKS file transfer protocol (LW-FTP)).

Inputs

```

VAR_INPUT
  wNVIndex  : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

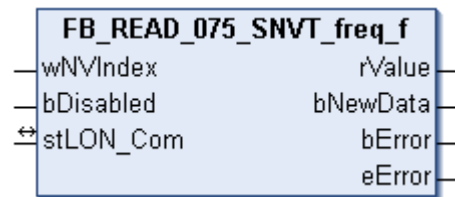
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_file_status;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_file_status [► 681]	Structure of the data that was received. If <i>stValue.eStatus</i> = eLON_FS_LOOKUP_OK (1), then the structure <i>stValue.stAddr.stDescriptor</i> is valid, otherwise <i>stValue.stAddr.stAddress</i> is valid.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.71 FB_READ_075_SNVT_freq_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_freq_f.

SNVT number: 075.

Description: Frequency (hertz).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST LON Communication [► 665]	This structure is used to link <u>FB LON KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

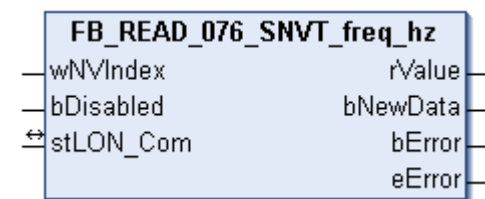
```
VAR_OUTPUT
    rValue    : REAL;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.72 FB_READ_076_SNVF_freq_hz



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_freq_hz.

SNVT number: 076.

Description: Frequency (hertz).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

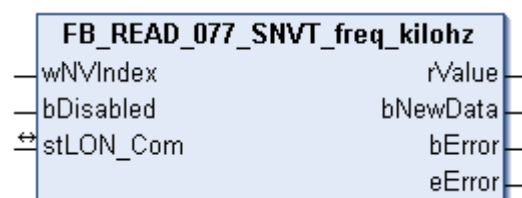
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.73 FB_READ_077_SNVF_freq_kilohz



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_freq_kilohz.

SNVT number: 077.

Description: Frequency (kilohertz).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

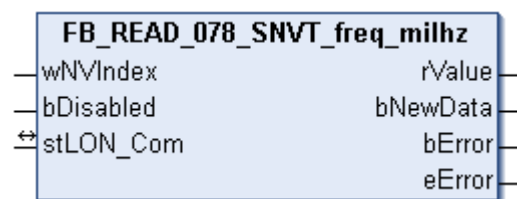
```
VAR_OUTPUT
    rValue      : REAL;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.74 FB_READ_078_SNVF_freq_milhz



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_freq_milhz.

SNVT number: 078.

Description: Frequency (millihertz).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

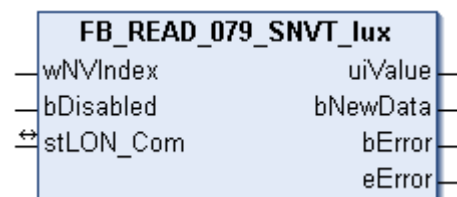
```
VAR_OUTPUT
    rValue    : REAL;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.75 FB_READ_079_SNVT_lux



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_lux.

SNVT number: 079.

Description: Illuminance (lux) 1 lux = 1 lumen/m².

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> <u>[► 27]</u> with the transmit/receive blocks.

Outputs

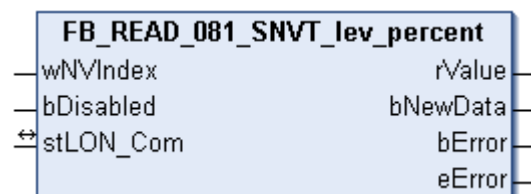
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> <u>[► 557]</u>	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.76 FB_READ_081_SNVT_lev_percent



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_lev_percent.

SNVT number: 081.

Description: Percentage value in 0.005% steps with sign.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

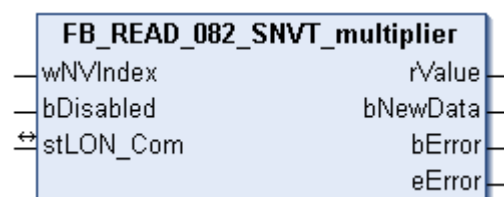
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -163.84 / Max: 163.835
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.77 FB_READ_082_SNVT_multiplier



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_multiplier.

SNVT number: 082.

Description: Multiplier in 0.0005 steps (16-bit unsigned value).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

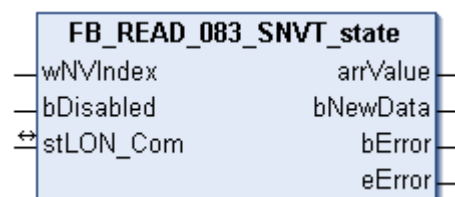
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 32.7675
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.78 FB_READ_083_SNVT_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_state.

SNVT number: 083.

Description: Status information (16 individual bit values). Each status is a Boolean value.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

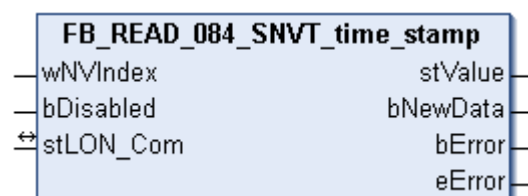
```
VAR_OUTPUT
  arrValue : ARRAY [0..15] OF BOOL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
arrValue	ARRAY OF BOOL	0–15 bit
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.79 FB_READ_084_SNVT_time_stamp



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_stamp.

SNVT number: 084.

Description: Time stamp (year, month, day, hour, minute, second).

Inputs

```
VAR_INPUT
    wNVIndex   : WORD;
    bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

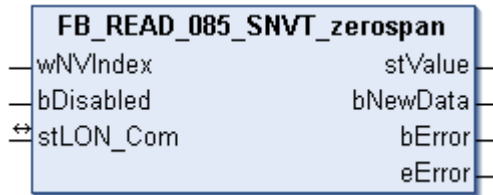
```
VAR_OUTPUT
    stValue   : TIMESTRUCT;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	TIMESTRUCT	Structure of the data that was received. The structure variables <i>wDayOfWeek</i> and <i>wMilliseconds</i> are not valid here; these values are always zero.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.80 FB_READ_085_SNVT_zerospanspan



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_zerospanspan.

SNVT number: 085.

Description: Zero point and proportionality factor. Linear transformation parameters: multiply with proportionality factor, then add origin offset.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

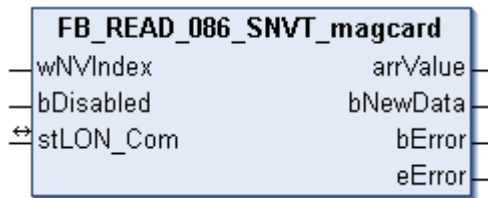
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_zerospanspan;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_zerospanspan [► 698]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.81 FB_READ_086_SNVT_magcard



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_magcard.

SNVT number: 086.

Description: ISO 7811 (40 hexadecimal numbers). Data according to ISO 7811 standard for magnetic card readers.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[▶ 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    arrValue : ARRAY [0..40] OF BYTE;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

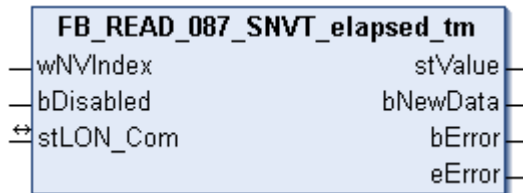
Name	Type	Description
arrValue	ARRAY OF BYTE	1–40 BYTE.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.82 FB_READ_087_SNVT_elapsed_tm



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_elapsed_tm.

SNVT number: 087.

Description: Elapsed time (day, hour, minute, second, millisecond).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    stValue : ST_LON_SNVT_elapsed_tm;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

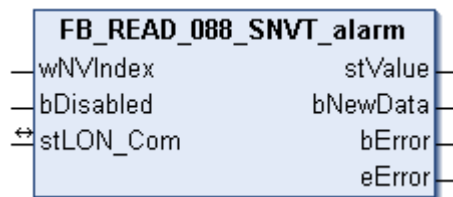
Name	Type	Description
stValue	ST_LON_SNVT_elapsed_tm [► 677]	Structure of the data that was received.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.83 FB_READ_088_SNVT_alarm



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_alarm.

SNVT number: 088.

Description: Alarm status.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_alarm;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

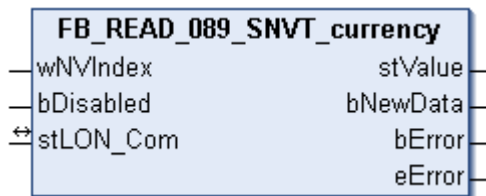
```


Name	Type	Description
stValue	ST_LON_SNVT_alarm [► 669]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.84 FB_READ_089_SNVT_currency



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_currency.

SNVT number: 089.

Description: Currency (unit (euros,...), multiplier, value).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    stValue : ST_LON_SNVT_currency;
    bNewData : BOOL;
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

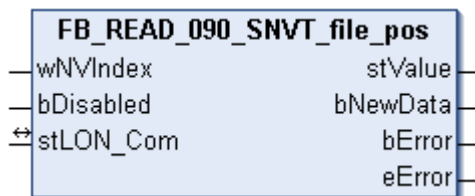
```

Name	Type	Description
stValue	ST_LON_SNVT_currency [► 675]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.85 FB_READ_090_SNVT_file_pos



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_file_pos.

SNVT number: 090.

Description: File position (pointer, length).

Inputs

```

VAR_INPUT
  wNVIndex  : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🚀 Outputs

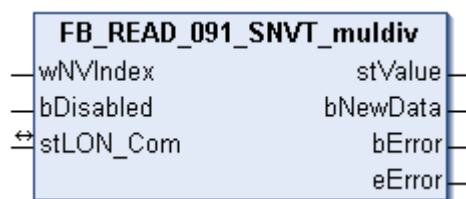
```
VAR_OUTPUT
  stValue   : ST_LON_SNVT_file_pos;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_file_pos [▶ 680]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.86 FB_READ_091_SNVT_muldiv



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_muldiv.

SNVT number: 091.

Description: Gain factor/attenuation factor (multiplier, divisor).

🚀 Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

🚀 Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🔌 Outputs

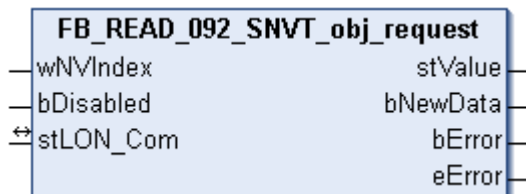
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_muldiv;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_muldiv [► 685]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.87 FB_READ_092_SNVT_obj_request



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_obj_request.

SNVT number: 092.

Description: Function selection (ID, request).

🔌 Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

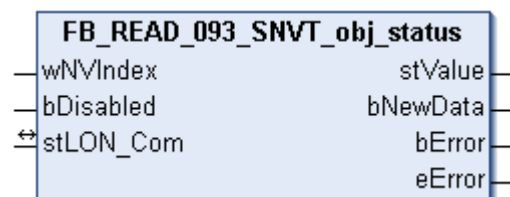
```
VAR_OUTPUT
  stValue : ST_LON_SNVt_obj_request;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVt_obj_request [► 686]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.88 FB_READ_093_SNVt_obj_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_obj_status.

SNVT number: 093.

Description: Object status (ID, status (4 byte)).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

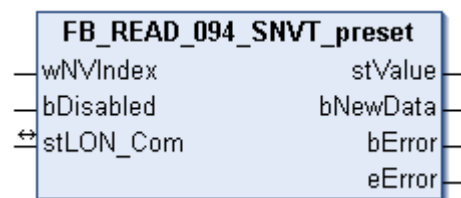
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_obj_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_obj_status</u> <u>[► 686]</u>	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.89 FB_READ_094_SNVT_preset



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_preset.

SNVT number: 094.

Description: Default (learn mode, value, time).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

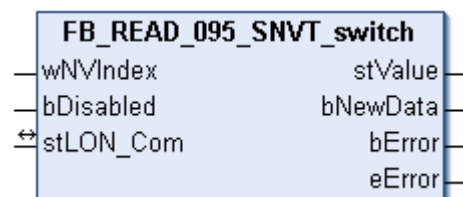
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_preset;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_preset [► 688]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.90 FB_READ_095_SNVT_switch



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_switch.

SNVT number: 095.

Description: Switch (value, status).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

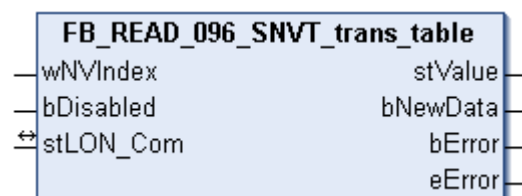
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_switch;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_switch [► 695]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.91 FB_READ_096_SNVT_trans_table



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_trans_table.

SNVT number: 096.

Description: Conversion table (number of values, interpolation).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

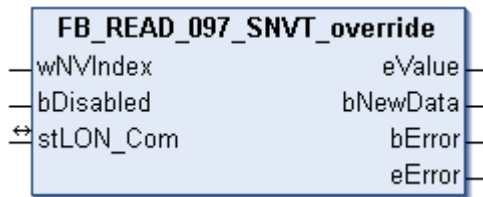
```
VAR_OUTPUT
  stValue : ST_LON_SNVT_trans_table;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_trans_table</u> [► 698]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.92 FB_READ_097_SNVT_override



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_override.

SNVT number: 097.

Description: Override mode (enumeration: 0= keep current value, 1= set specific value set, 2= set default value).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    eValue : E_LON_override_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

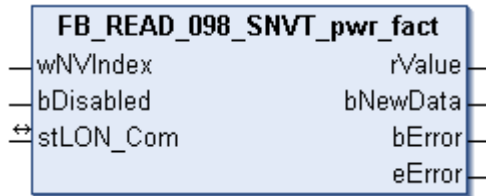
```

Name	Type	Description
eValue	E_LON_override_t [▶ 611]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.93 FB_READ_098_SNVT_pwr_fact



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pwr_fact.

SNVT number: 098.

Description: Power factor (multiplier).

Inputs

```
VAR_INPUT
  wNVIndex   : WORD;
  bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

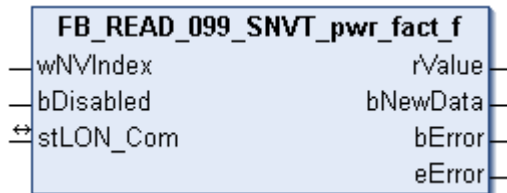
Name	Type	Description
rValue	REAL	Min: -1 / Max: 1.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.94 FB_READ_099_SNVT_pwr_fact_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pwr_fact_f.

SNVT number: 099.

Description: Power factor (multiplier).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

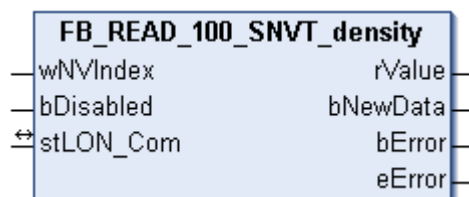
Name	Type	Description
rValue	REAL	Min: -1 / Max: 1.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.95 FB_READ_100_SNVT_density



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_density.

SNVT number: 100.

Description: Density (kg/m³).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

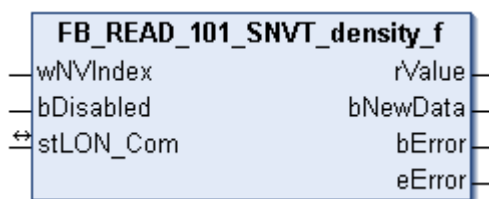
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 32767.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.96 FB_READ_101_SNVT_density_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_density_f.

SNVT number: 101.

Description: Density (kg/m³).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

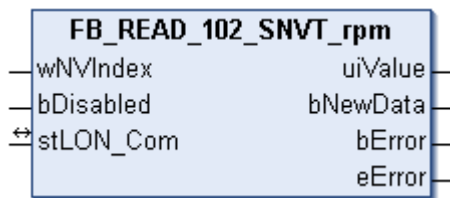
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.97 FB_READ_102_SNVT_rpm



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_rpm.

SNVT number: 102.

Description: Speed (revolutions/minute (RPM)).

Inputs

```

VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

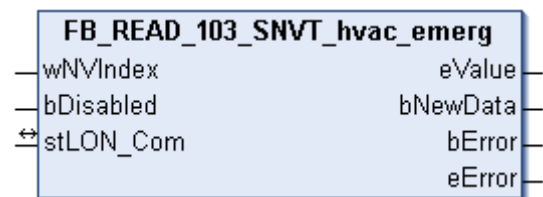
```
VAR_OUTPUT
  uiValue   : UINT;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.98 FB_READ_103_SNVT_hvac_emerg



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_emerg.

SNVT number: 103.

Description: HVAC emergency mode (operating modes).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

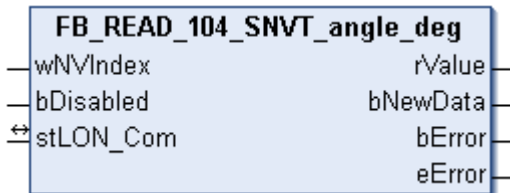
```
VAR_OUTPUT
  eValue      : E_LON_emerg_t;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_emerg_t [► 596]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.99 FB_READ_104_SNVt_angle_deg



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_angle_deg.

SNVT number: 104.

Description: Angle specification in 1/50 degree steps.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

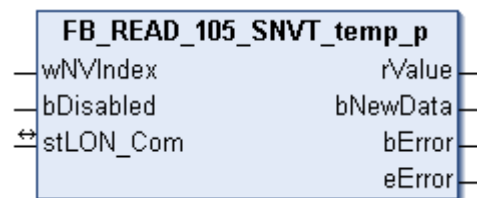
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -359.98 / Max: 360.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.100 FB_READ_105_SNVTemp_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp_p.

SNVT number: 105.

Description: Temperature (°C).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

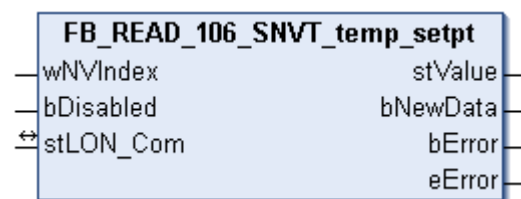
```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -273.17 / Max: 327.67.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.101 FB_READ_106_SNVt_temp_setpt



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp_setpt.

SNVT number: 106.

Description: Temperature (6 temperature values).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

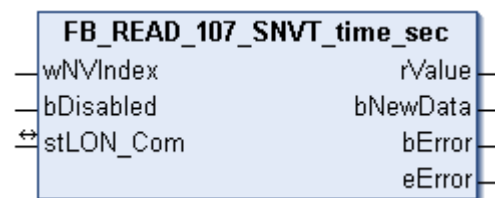
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_temp_setpt;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_temp_setpt</u> <u>[► 696]</u>	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.102 FB_READ_107_SNVT_time_sec



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_sec.

SNVT number: 107.

Description: Elapsed time (second).

Inputs

```
VAR_INPUT
    wNVIndex    : WORD;
    bDisabled   : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> <u>[► 27]</u> with the transmit/receive blocks.

Outputs

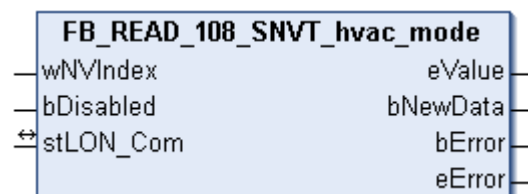
```
VAR_OUTPUT
    rValue    : REAL;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 6553.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> <u>[► 557]</u>	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.103 FB_READ_108_SNVT_hvac_mode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_mode.

SNVT number: 108.

Description: HVAC operating mode (operating modes).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

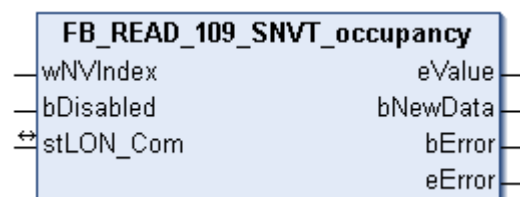
```
VAR_OUTPUT
    eValue : E_LON_hvac_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_hvac_t [► 607]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.104 FB_READ_109_SNVT_occupancy



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_occupancy.

SNVT number: 109.

Description: Occupancy signal (states).

Inputs

```
VAR_INPUT
  wNVIndex  : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

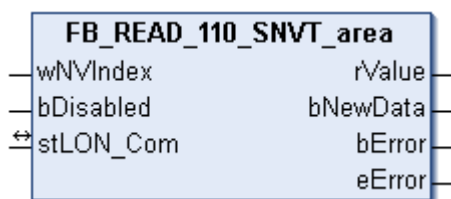
```
VAR_OUTPUT
  eValue  : E_LON_occup_t;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_occup_t [► 611].	Enum to be sent.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.105 FB_READ_110_SNVT_area



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_area.

SNVT number: 110.

Description: Area (square meter).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

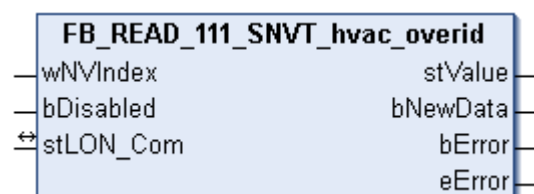
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 13,107.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.106 FB_READ_111_SNVT_hvac_overid



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_overid.

SNVT number: 111.

Description: HVAC override mode (mode, position/flow rate, min/max flow rate).

Inputs

```
VAR_INPUT
    wNVIndex   : WORD;
    bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

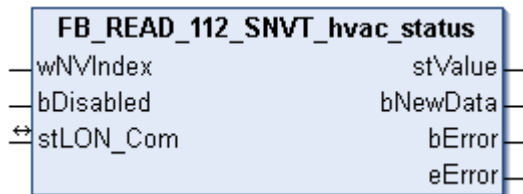
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_hvac_overid;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_hvac_overid [► 681]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.107 FB_READ_112_SNVT_hvac_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_status.

SNVT number: 112.

Description: HVAC status (mode, 5 power ratings, alarm flag).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_hvac_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

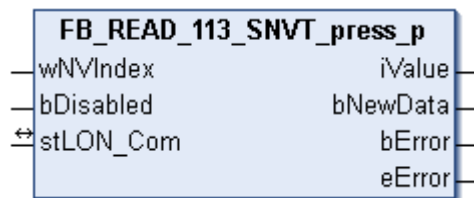
```

Name	Type	Description
stValue	ST_LON_SNVT_hvac_status [► 683]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.108 FB_READ_113_SNVT_press_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_press_p.

SNVT number: 113.

Description: Pressure (overpressure) (pascal).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  iValue : INT;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

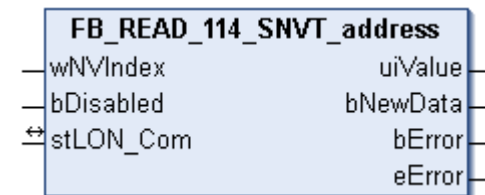
Name	Type	Description
iValue	INT	Min: -32768 / Max: 32767.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.109 FB_READ_114_SNVT_address



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_address.

SNVT number: 114.

Description: Neuron address (16-bit address value).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL64010 [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

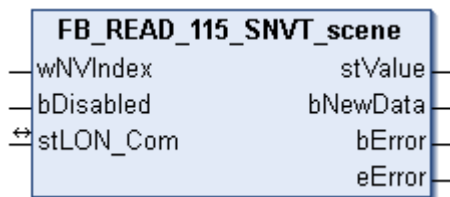
Name	Type	Description
uiValue	UINT	Min: 16384 / Max: 64767.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.110 FB_READ_115_SNVT_scene



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_scene.

SNVT number: 115.

Description: Scenes (function (retrieve/learn), scene number).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

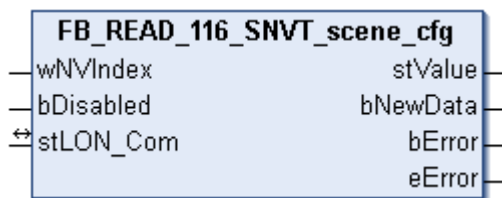
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_scene;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_scene [► 694]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.111 FB_READ_116_SNVT_scene_cfg



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_scene_cfg.

SNVT number: 116.

Description: Scene setting (function , scene number, setting, transition number, transition time, delay time, priority).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

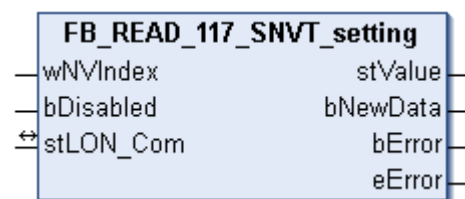
```
VAR_OUTPUT
  stValue   : ST_LON_SNVT_scene_cfg;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_scene_cfg [► 694]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.112 FB_READ_117_SNVT_setting



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_setting.

SNVT number: 117.

Description: Settings (function, value, transition number).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

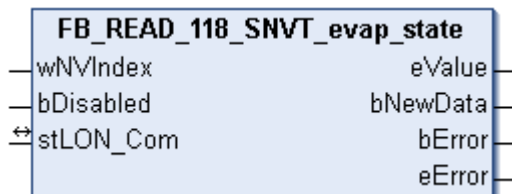
```
VAR_OUTPUT
    stValue   : ST_LON_SNVt_setting;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVt_setting [► 695]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.113 FB_READ_118_SNVt_evap_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_evap_state.

SNVT number: 118.

Description: Evaporator status (enumeration).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

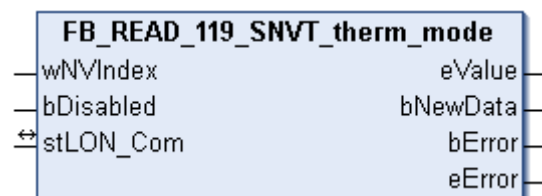
```
VAR_OUTPUT
  eValue      : E_LON_evap_t;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_evap_t [► 599]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.114 FB_READ_119_SNVt_therm_mode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_therm_mode.

SNVT number: 119.

Description: Thermostat mode (enumeration (enable, modulation)).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

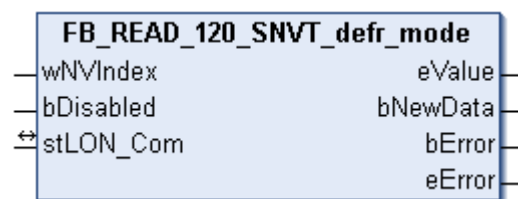
```
VAR_OUTPUT
    eValue      : E_LON_therm_mode_t;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_therm_mode_t [▶ 628]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.115 FB_READ_120_SNVT_defr_mode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_defr_mode.

SNVT number: 120.

Description: Defrost mode (enumeration).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

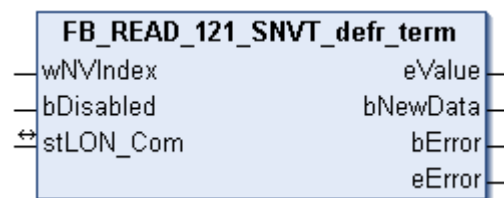
```
VAR_OUTPUT
    eValue      : E_LON_defrost_mode_t;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	<u>E_LON_defrost_mode_t</u> <u>[► 593]</u>	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.116 FB_READ_121_SNVT_defr_term



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_defr_term.

SNVT number: 121.

Description: Completion of the defrost cycle (enumeration).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

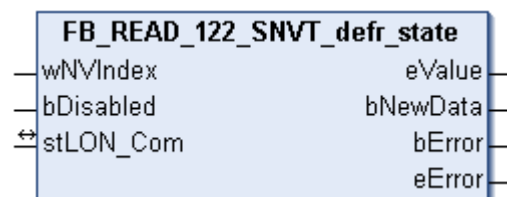
```
VAR_OUTPUT
    eValue : E_LON_defrost_term_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_defrost_term_t [► 594]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.117 FB_READ_122_SNVT_defr_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_defr_state.

SNVT number: 122.

Description: Defrost status (enumeration).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

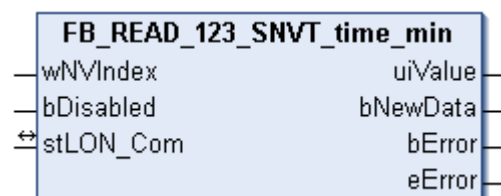
```
VAR_OUTPUT
    eValue : E_LON_defrost_state_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_defrost_state_t [► 593]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.118 FB_READ_123_SNVT_time_min



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_min.

SNVT number: 123.

Description: Elapsed time (minutes).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> <u>[► 27]</u> with the transmit/receive blocks.

Outputs

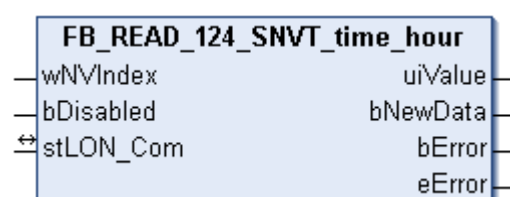
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> <u>[► 557]</u>	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.119 FB_READ_124_SNVT_time_hour



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_hour.

SNVT number: 124.

Description: Elapsed time (hour).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

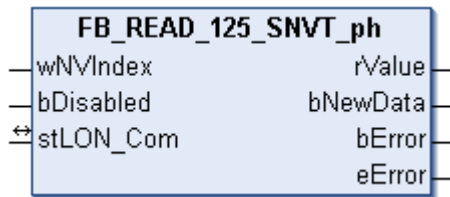
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.120 FB_READ_125_SNVT_ph



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ph.

SNVT number: 125.

Description: Acidity (pH). Ion concentration ratio.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

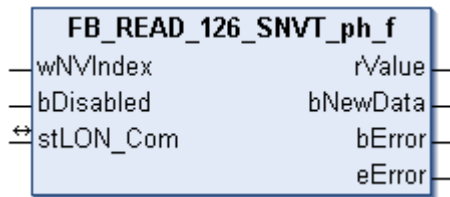
```

Name	Type	Description
rValue	REAL	Min: -32,768 / Max: 32,767.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.121 FB_READ_126_SNVT_ph_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ph_f.

SNVT number: 126.

Description: Acidity (pH). Ion concentration ratio.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

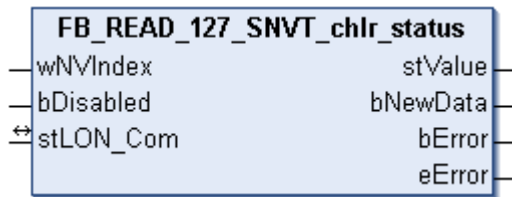
```

Name	Type	Description
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.122 FB_READ_127_SNVT_chlr_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_chlr_status.

SNVT number: 127.

Description: Refrigeration unit status (run mode, op mode, status bits).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_chlr_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

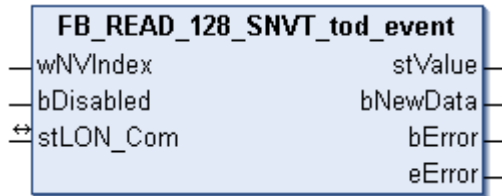
```

Name	Type	Description
stValue	ST_LON_SNVT_chlr_status [► 670]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.123 FB_READ_128_SNVT_tod_event



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_tod_event.

SNVT number: 128.

Description: Presence time (busy status, next busy time).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_tod_event;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

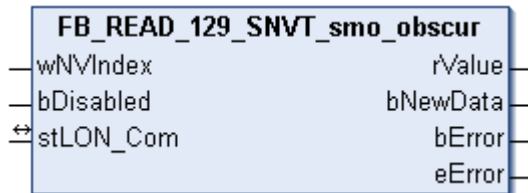
Name	Type	Description
stValue	ST_LON_SNVT_tod_event [► 697]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the eError variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.124 FB_READ_129_SNVT_smo_obscur



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_smo_obscur.

SNVT number: 129.

Description: Darkening due to smoke (darkening %).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL64010 [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

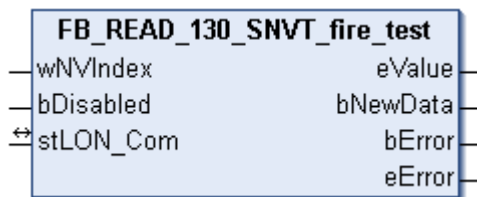
Name	Type	Description
rValue	REAL	Min: 0 / Max: 5.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.125 FB_READ_130_SNVF_fire_test



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_fire_test.

SNVT number: 130.

Description: Fire alarm system test request (fire alarm test designations).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    eValue : E_LON_fire_test_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

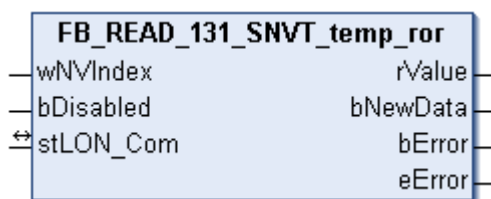
```

Name	Type	Description
eValue	E_LON_fire_test_t [► 602]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.126 FB_READ_131_SNVt_temp_ror



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp_ror.

SNVT number: 131.

Description: Value of the temperature change/increase (°C/minute).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
  
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

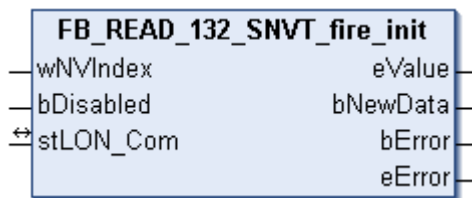
```

Name	Type	Description
rValue	REAL	Min: -16384 / Max: 16383.5.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.127 FB_READ_132_SNVT_fire_init



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_fire_init.

SNVT number: 132.

Description: Fire detector type (fire detector type names).

Inputs

```

VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

🔌 Outputs

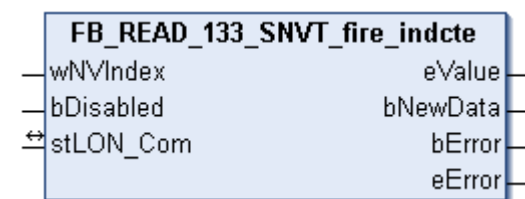
```
VAR_OUTPUT
  eValue   : E_LON_fire_initiator_t;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_fire_initiator_t [▶ 601]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.128 FB_READ_133_SNVT_fire_indcte



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_fire_indcte.

SNVT number: 133.

Description: Fire alarm display (fire alarm display names).

🔌 Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

🔌/🔌 Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```


Name	Type	Description
stLON_Com	ST LON Communication [► 665]	This structure is used to link <u>FB LON KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

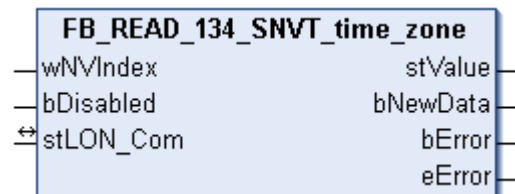
```
VAR_OUTPUT
    eValue      : E_LON_fire_indicator_t;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_fire_indicator_t [► 601]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.129 FB_READ_134_SNVT_time_zone



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_zone.

SNVT number: 134.

Description: Time zone description (offset, type, summer time start, summer time end).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

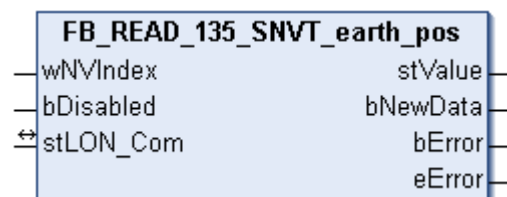
```
VAR_OUTPUT
  stValue : ST_LON_SNVt_time_zone;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVt_time_zone [► 697]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.130 FB_READ_135_SNVt_earth_pos



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_earth_pos.

SNVT number: 135.

Description: Position on Earth (width & length orientation, latitude & min, longitude & min, height).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

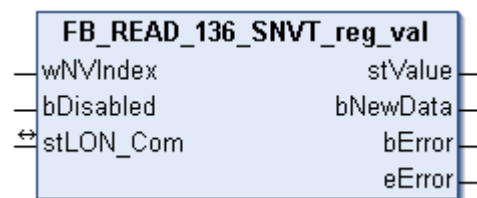
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_earth_pos;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_earth_pos [► 677]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.131 FB_READ_136_SNVT_reg_val



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_reg_val.

SNVT number: 136.

Description: Register value (raw value, bit code, number of decimal places).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

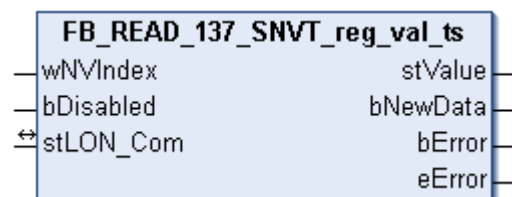
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_reg_val;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_reg_val [► 693]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.132 FB_READ_137_SNVT_reg_val_ts



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_reg_val_ts.

SNVT number: 137.

Description: Register value (raw value, bit code, number of decimal places, status, state, timestamp).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

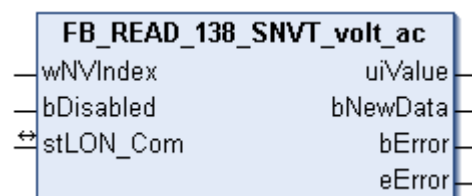
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_reg_val_ts;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_reg_val_ts [► 693]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.133 FB_READ_138_SNVT_volt_ac



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_volt_ac.

SNVT number: 138.

Description: Alternating voltage (Volt AC).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

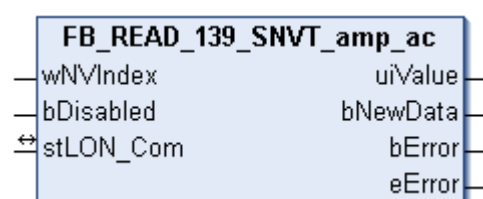
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.134 FB_READ_139_SNVT_amp_ac



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_amp_ac.

SNVT number: 139.

Description: Alternating current (ampere AC).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

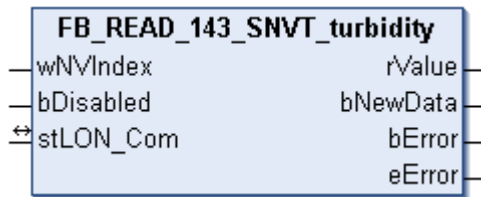
```
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.135 FB_READ_143_SNVT_turbidity



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_turbidity.

SNVT number: 143.

Description: Turbidity (turbidity unit).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

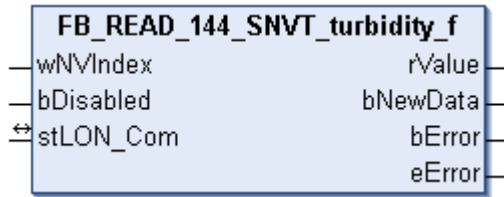
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 65,535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.136 FB_READ_144_SNVT_turbidity_f



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_turbidity_f.

SNVT number: 144.

Description: Turbidity (turbidity unit).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

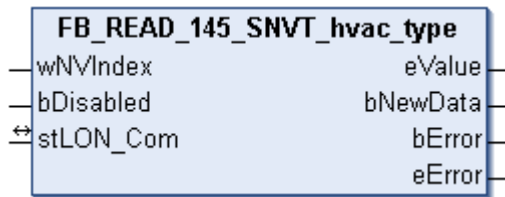
```

Name	Type	Description
rValue	REAL	Min: 0 / Max: 3.40E+38.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.137 FB_READ_145_SNVT_hvac_type



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_type.

SNVT number: 145.

Description: HVAC plant type (HVAC plant type description).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    eValue : E_LON_hvac_hvt_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

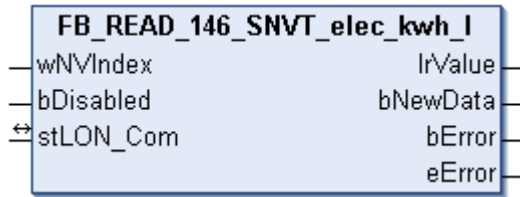
```

Name	Type	Description
eValue	E_LON_hvac_hvt_t [▶ 604]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.138 FB_READ_146_SNVT_elec_kwh_I



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_elec_kwh_I.

SNVT number: 146.

Description: Electric energy (kW / hour).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    IrValue : LREAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

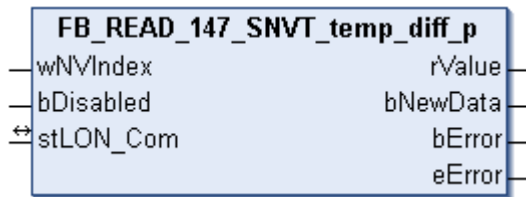
```

Name	Type	Description
IrValue	LREAL	Min: -214748364.8 / Max: 214748364.7.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.139 FB_READ_147_SNVTemp_diff_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_temp_diff_p.

SNVT number: 147.

Description: Temperature difference (°C).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

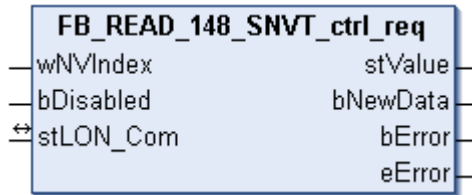
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
rValue	REAL	Min: -327.68 / Max: 327.67.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.140 FB_READ_148_SNVT_ctrl_req



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ctrl_req.

SNVT number: 148.

Description: Control request (receiver ID, sender ID, sender priority). Request for control permission for another controller.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

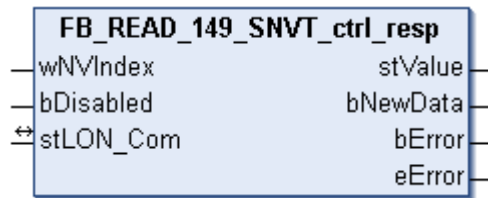
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_ctrl_req;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_ctrl_req [► 674]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.141 FB_READ_149_SNVT_ctrl_resp



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ctrl_resp.

SNVT number: 149.

Description: Control response (status, transmitter, controller ID). Response to a control request.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_ctrl_resp;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

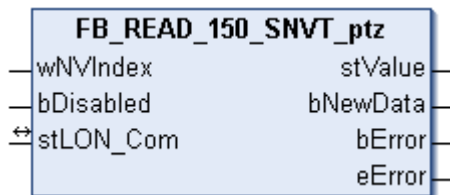
Name	Type	Description
stValue	ST_LON_SNVT_ctrl_resp [► 675]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the eError variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.142 FB_READ_150_SNVt_ptz



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ptz.

SNVT number: 150.

Description: Camera PTZ (SNZ) (swivel, swivel speed, tilt, tilt speed, zoom, zoom speed).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL64010 [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVt_ptz;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

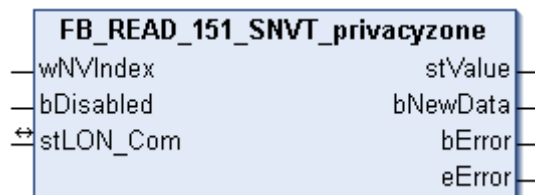
Name	Type	Description
stValue	ST_LON_SNVt_ptz [▶ 689]	Structure of the data that was received.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.143 FB_READ_151_SNVT_privacyzone



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_privacyzone.

SNVT number: 151.

Description: Private zone (action area, zone number, camera ID). Certain areas can be excluded from the camera.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    stValue : ST_LON_SNVT_privacyzone;
    bNewData : BOOL;
```



```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

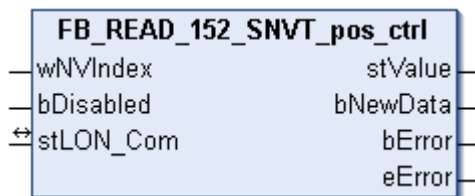
```

Name	Type	Description
stValue	ST_LON_SNVT_privacyzone [▶ 689]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.144 FB_READ_152_SNVT_pos_ctrl



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pos_ctrl.

SNVT number: 152.

Description: Position setting for cameras in networks (receiver, controller ID, controller priority, function, action, value).

Inputs

```

VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

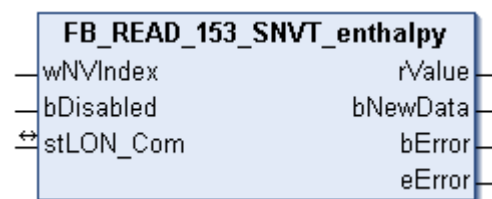
```
VAR_OUTPUT
  stValue   : ST_LON_SNVT_pos_ctrl;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_pos_ctrl [► 688]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.145 FB_READ_153_SNVT_enthalpy



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_enthalpy.

SNVT number: 153.

Description: Enthalpy (kilojoules/kg).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

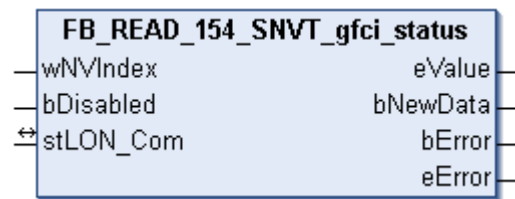
```
VAR_OUTPUT
  rValue   : REAL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -327.68 / Max: 327.67.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.146 FB_READ_154_SNVT_gfci_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_gfci_status.

SNVT number: 154.

Description: Residual current circuit breaker status (residual current circuit breaker status text).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

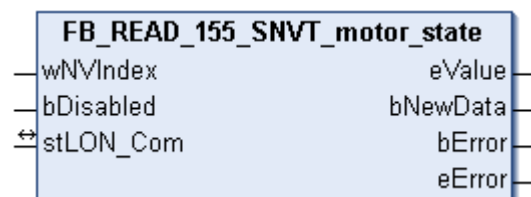
```
VAR_OUTPUT
  eValue      : E_LON_gfci_status_t;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_gfci_status_t [► 603]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.147 FB_READ_155_SNVT_motor_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_motor_state.

SNVT number: 155.

Description: Motor status (motor status designation).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

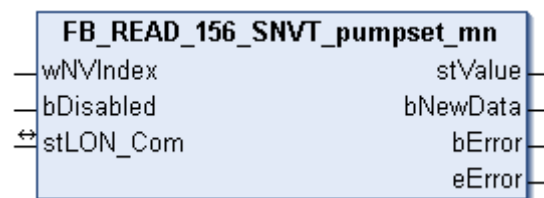
```
VAR_OUTPUT
    eValue      : E_LON_motor_state_t;
    bNewData    : BOOL;
    bError      : BOOL;
    eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_motor_state_t [► 609]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.148 FB_READ_156_SNVT_pumpset_mn



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pumpset_mn.

SNVT number: 156.

Description: Pump group (main pump, auxiliary pump, priority, ready, emergency off, main pump activated, auxiliary pump activated, maintenance request). Synchronized vacuum pumps.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

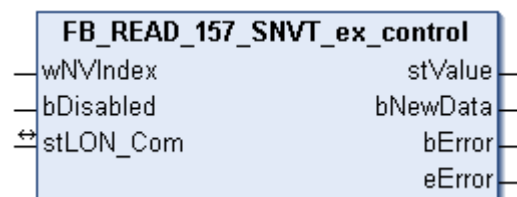
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_pumpset_mn;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_pumpset_mn [► 690]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.149 FB_READ_157_SNVT_ex_control



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ex_control.

SNVT number: 157.

Description: Exclusive control (status, address). A device has exclusive control over another device.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

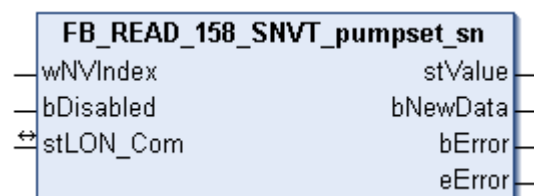
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_ex_control;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_ex_control [► 680]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.150 FB_READ_158_SNVT_pumpset_sn



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pumpset_sn.

SNVT number: 158.

Description: Pump group sensor (thinner, output, pressure, vacuum, ...).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

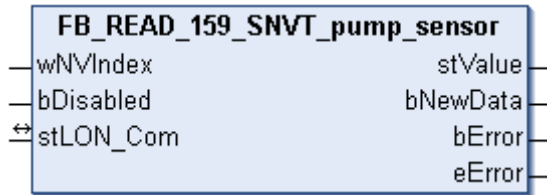
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_pumpset_sn;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_pumpset_s</u> <u>n</u> [► 691]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.151 FB_READ_159_SNVT_pump_sensor



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_pump_sensor.

SNVT number: 159.

Description: Pump sensor (speed, temperature, status).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

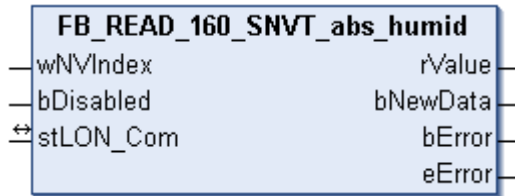
VAR_OUTPUT
    stValue : ST_LON_SNVT_pump_sensor;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
stValue	ST_LON_SNVT_pump_sens or [▶ 689]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.152 FB_READ_160_SNVT_abs_humid



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_abs_humid.

SNVT number: 160.

Description: Absolute humidity (gram/kg).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  rValue : REAL;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

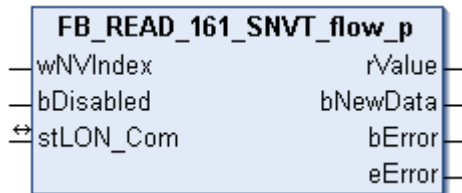
Name	Type	Description
rValue	REAL	Min: 0 / Max: 655.35.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.153 FB_READ_161_SNVT_flow_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_flow_p.

SNVT number: 161.

Description: Volume flow (cubic meters / hour).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

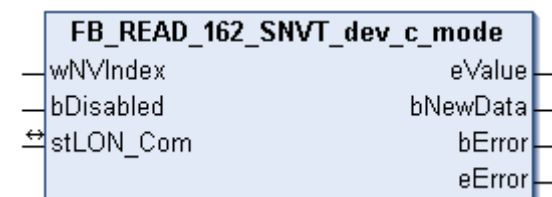
Name	Type	Description
rValue	REAL	Min: 0 / Max: 655.35.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.154 FB_READ_162_SNVT_dev_c_mode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_dev_c_mode.

SNVT number: 162.

Description: Device operating mode (device operating mode states).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

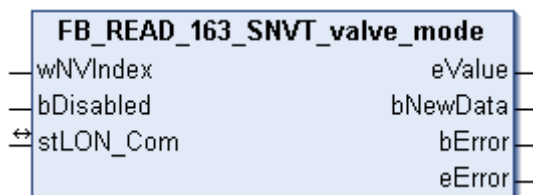
```
VAR_OUTPUT
    eValue : E_LON_device_c_mode_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_device_c_mode_t [► 595]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.155 FB_READ_163_SNVt_valve_mode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_valve_mode.

SNVT number: 163.

Description: Valve state.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    eValue : E_LON_valve_mode_t;
    bNewData : BOOL;
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

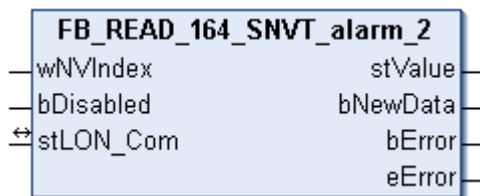
```

Name	Type	Description
eValue	E_LON_valve_mode_t [► 629]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output becomes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.156 FB_READ_164_SNVT_alarm_2



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_alarm_2.

SNVT number: 164.

Description: Alarm status 2. Signals the alarm status of a function block or device. Replaces SNVT_alarm.

Inputs

```

VAR_INPUT
wNVIndex : WORD;
bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

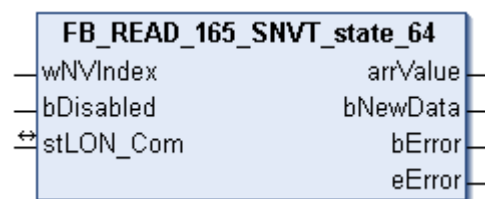
```
VAR_OUTPUT
  stValue   : ST_LON_SNVT_alarm_2;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_alarm_2 [► 670]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.157 FB_READ_165_SNVT_state_64



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_state_64.

SNVT number: 165.

Description: Status information (64 individual bit values). Each status is a Boolean value.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST LON Communication [► 665]	This structure is used to link <u>FB LON KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

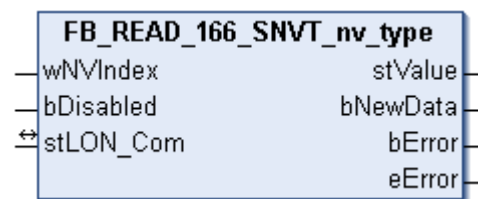
```
VAR_OUTPUT
  arrValue : ARRAY [0..63] OF BOOL;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
arrValue	ARRAY OF BOOL	0–63 bit.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.158 FB_READ_166_SNVT_nv_type



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_nv_type.

SNVT number: 166.

Description: Network variable type. Type description for network variables.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

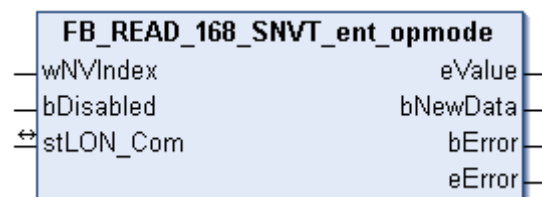
```
VAR_OUTPUT
  stValue : ST_LON_SNVt_nv_type;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVt_nv_type [► 685]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.159 FB_READ_168_SNVt_ent_opmode



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ent_opmode.

SNVT number: 168.

Description: Operating mode of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[▶ 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

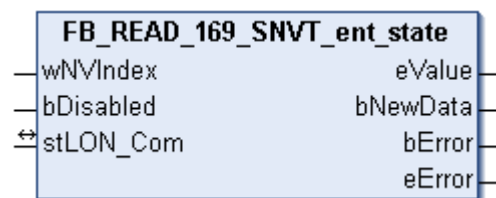
```
VAR_OUTPUT
  eValue      : E_LON_ent_opmode_cmd_t;
  bNewData    : BOOL;
  bError      : BOOL;
  eError      : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	<u>E_LON_ent_opmode_cmd_t</u> [▶ 598]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.160 FB_READ_169_SNVT_ent_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ent_state.

SNVT number: 169.

Description: State of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

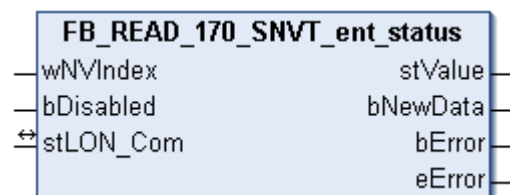
```
VAR_OUTPUT
    eValue : E_LON_ent_cmd_t;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	E_LON_ent_cmd_t [► 597]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.161 FB_READ_170_SNVT_ent_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_ent_status.

SNVT number: 170.

Description: Status of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

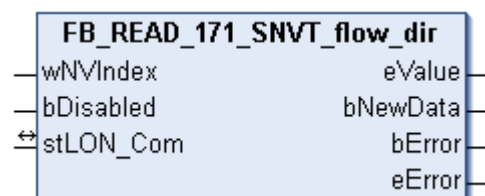
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_ent_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_ent_status [► 678]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.162 FB_READ_171_SNVT_flow_dir



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_flow_dir.

SNVT number: 171.

Description: Flow direction. Direction of the flow to be permitted or direction of the current flow.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

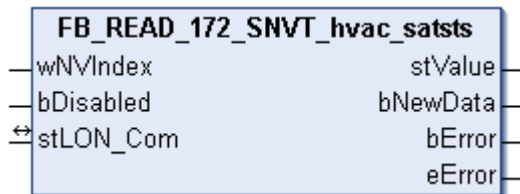
```
VAR_OUTPUT
  eValue : E_LON_flow_direction_t;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
eValue	<u>E_LON_flow_direction_t</u> [► 603]	Enum to be received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.163 FB_READ_172_SNVT_hvac_satsts



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_hvac_satsts.

SNVT number: 172.

Description: HVAC saturation status.

0 in a field means that plant (device) linked to the field is not saturated or does not reach the limit stop before the required set value is reached.

1 in a field means that plant (device) linked to the field is saturated or reaches the limit stop before the required set value is not reached.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_hvac_satsts;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

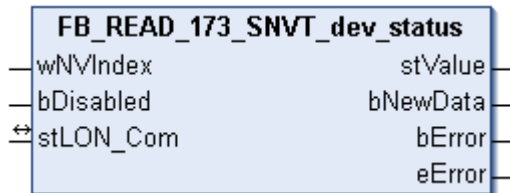
Name	Type	Description
stValue	ST_LON_SNVT_hvac_satsts [► 682]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.164 FB_READ_173_SNVT_dev_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_dev_status.

SNVT number: 173.

Description: Device status.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL64010 [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_dev_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

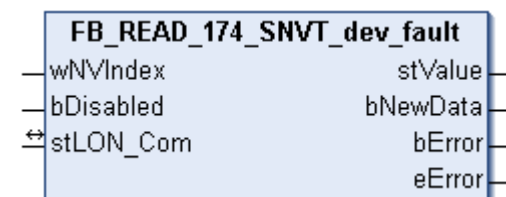
Name	Type	Description
stValue	ST_LON_SNVT_dev_status [▶ 676]	Structure of the data that was received.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.165 FB_READ_174_SNVT_dev_fault



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_dev_fault.

SNVT number: 174.

Description: Error state. Error information for a device.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_dev_fault;
    bNewData : BOOL;
    bError : BOOL;
    eError : E\_LON\_ERROR;
END_VAR

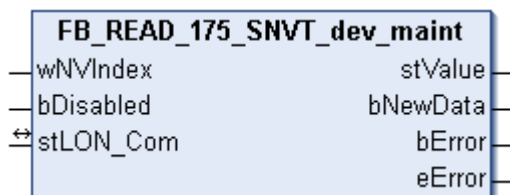
```


Name	Type	Description
stValue	ST_LON_SNV dev fault [▶ 676]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.166 FB_READ_175_SNV dev_maint



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_dev_maint.

SNVT number: 175.

Description: Device maintenance station.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    stValue : ST_LON_SNV dev_maint;
    bNewData : BOOL;
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

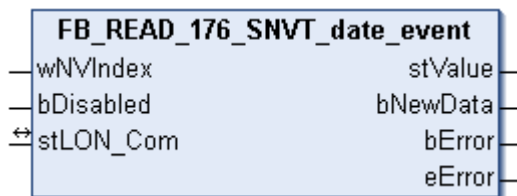
```

Name	Type	Description
stValue	ST_LON_SNVT_dev_maint [► 676]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.167 FB_READ_176_SNVT_date_event



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_date_event.

SNVT number: 176.

Description: Event status.

Inputs

```

VAR_INPUT
  wNVIndex  : WORD;
  bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🚀 Outputs

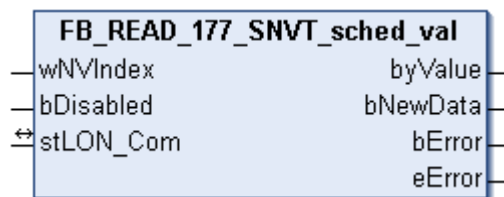
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_date_event;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_date_event [▶ 675]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.168 FB_READ_177_SNVT_sched_val



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_sched_val.

SNVT number: 177.

Description: Calendar value. Index of a calendar value that selects an entry in an SCPT value definition field array or is a direct value output.

🚀 Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

🚀/🚀 Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST LON Communication [► 665]	This structure is used to link FB LON KL6401() [► 27] with the transmit/receive blocks.

Outputs

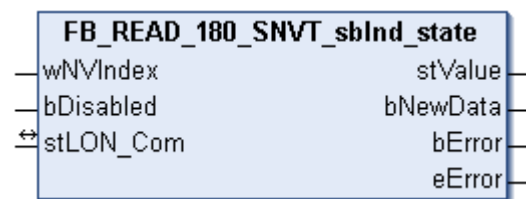
```
VAR_OUTPUT
  byValue   : BYTE;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
byValue	BYTE	Min: 0 / Max: 255.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.169 FB_READ_180_SNVT_sbInd_state



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_sbInd_state.

SNVT number: 180.

Description: Blind status.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

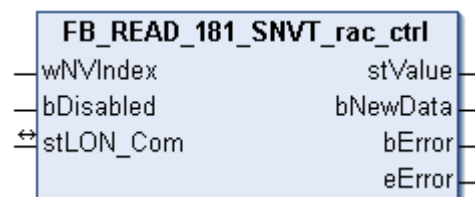
```
VAR_OUTPUT
  stValue : ST_LON_SNVt_sblnd_state;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVt_sblnd_state [► 694]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.170 FB_READ_181_SNVt_rac_ctrl



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_rac_ctrl.

SNVT number: 181.

Description: Sound function control. Activates the sound function for a particular source.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[▶ 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

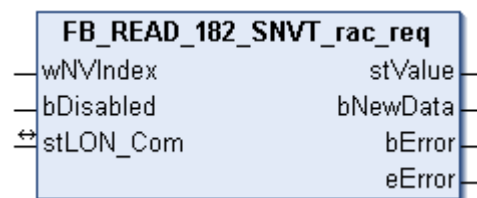
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_rac_ctrl;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_rac_ctrl</u> <u>[▶ 692]</u>	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.171 FB_READ_182_SNVT_rac_req



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_rac_req.

SNVT number: 182.

Description: Sound function request. Requests the sound function for a particular source.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

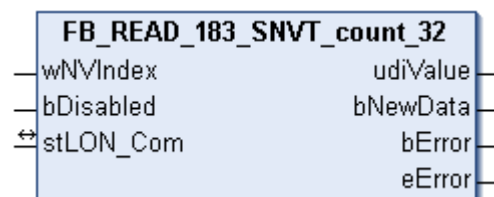
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_rac_req;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_rac_req [► 692]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.172 FB_READ_183_SNVT_count_32



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_count_32.

SNVT number: 183.

Description: Absolute counter. 32 bit counter.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

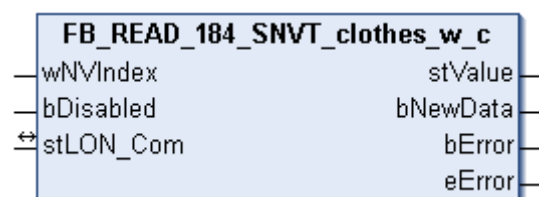
```
VAR_OUTPUT
    udiValue : UDINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
udiValue	UDINT	Min: 0 / Max: 4294967294.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.173 FB_READ_184_SNVT_clothes_w_c



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_clothes_w_c.

SNVT number: 184.

Description: Washing machine / commands. For programming and starting a washing machine.

Inputs

```
VAR_INPUT
  wNVIndex  : WORD;
  bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

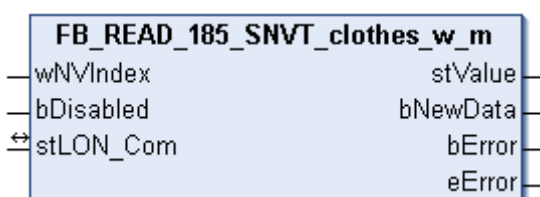
```
VAR_OUTPUT
  stValue  : ST_LON_SNVT_clothes_w_c;
  bNewData : BOOL;
  bError   : BOOL;
  eError   : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_clothes_w_c [► 672]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.174 FB_READ_185_SNVT_clothes_w_m



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_clothes_w_m.

SNVT number: 185.

Description: Washing machine /management status Current status of door / lid and drain.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

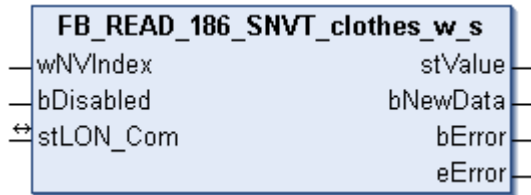
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_clothes_w_m;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_clothes_w_m [► 673]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.175 FB_READ_186_SNVT_clothes_w_s



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_clothes_w_s.

SNVT number: 186.

Description: Washing machine / status. Current state of a washing machine, including command and alarm information.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

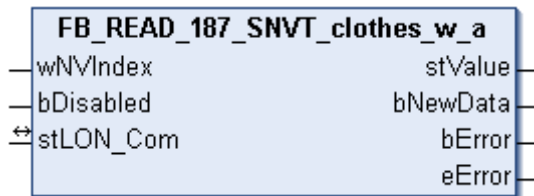
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_clothes_w_s;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_clothes_w_s [▶ 673]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.176 FB_READ_187_SNVT_clothes_w_a



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_clothes_w_a.

SNVT number: 187.

Description: Washing machine / alarm messages.

Inputs

```
VAR_INPUT
  wNVIndex   : WORD;
  bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  stValue   : ST_LON_SNVT_clothes_w_a;
  bNewData  : BOOL;
  bError    : BOOL;
  eError    : E_LON_ERROR;
END_VAR
```

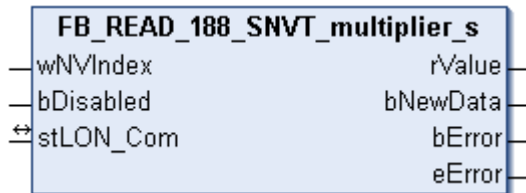
Name	Type	Description
stValue	ST_LON_SNVT_clothes_w_a [▶ 671]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.177 FB_READ_188_SNVT_multiplier_s



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_multiplier_s.

SNVT number: 188.

Description: Multiplier.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

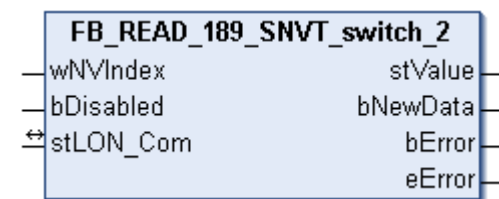
Name	Type	Description
rValue	REAL	Min: 0 / Max: 2.54.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.178 FB_READ_189_SNVT_switch_2



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_switch_2.

SNVT number: 189.

Description: Switch for setting scenes and settings. Extended version of the SNVT_switch for setting of scenes and settings similar to the SNVT_scene and SNVT_setting.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_switch_2;
    bNewData : BOOL;
  
```

```

bError    : BOOL;
eError    : E_LON_ERROR;
END_VAR

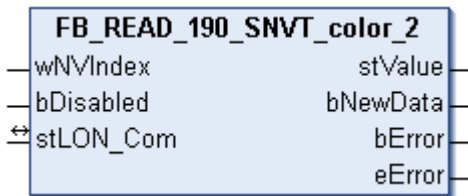
```

Name	Type	Description
stValue	ST_LON_SNVT_switch_2 [► 696]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.179 FB_READ_190_SNVT_color_2



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_color_2.

SNVT number: 190.

Description: Color.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🔌 Outputs

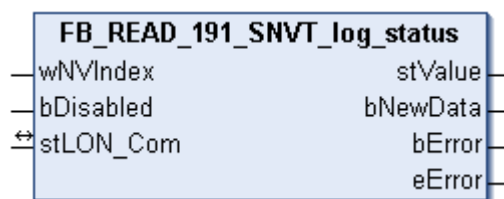
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_color_2;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_color_2 [▶ 674]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.180 FB_READ_191_SNVT_log_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_log_status.

SNVT number: 191

Description: Log status (hundredth of a second). Represents the current status of a data logging. Update based on the cpLogNotificationThreshold value. Displays only the status. Alarms are output via the node object nvoAlarm2. Is required if the node object contains no nvoLogStat output.

🔌 Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

🔌/🔌 Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

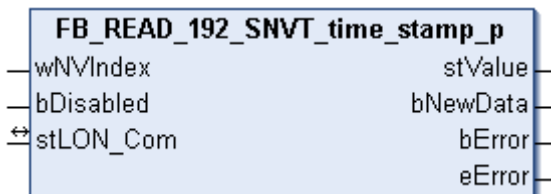
```
VAR_OUTPUT
    stValue   : ST_LON_SNVT_log_status;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_log_status [► 684]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.181 FB_READ_192_SNVT_time_stamp_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_stamp_p.

SNVT number: 192.

Description: Precise timestamp (seconds). Timestamp with a resolution of a hundredth second.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

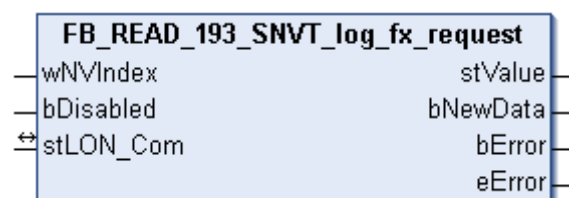
```
VAR_OUTPUT
    stValue : TIMESTRUCT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	TIMESTRUCT	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.182 FB_READ_193_SNVT_log_fx_request



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_log_fx_request.

SNVT number: 193.

Description: Log file transfer request. Requests a data log via FTP transfer. Must follow a standard ftp request to obtain a data log file. Required on devices that use the data logger function profile, which enables data log transfer via FTP.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[▶ 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

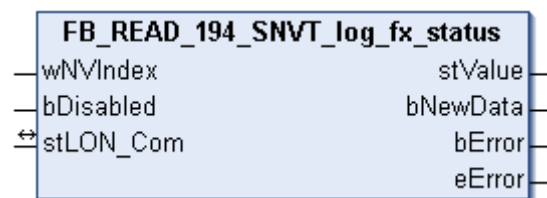
```
VAR_OUTPUT
  stValue : ST_LON_SNVT_log_fx_request;
  bNewData : BOOL;
  bError : BOOL;
  eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	<u>ST_LON_SNVT_log_fx_request</u> [▶ 683]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.183 FB_READ_194_SNVT_log_fx_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_log_fx_status.

SNVT number: 194.

Description: Log file transfer status. Indicates the status of a data log via FTP transfer. Required on devices that use the data logger function profile, which enables data log transfer via FTP.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

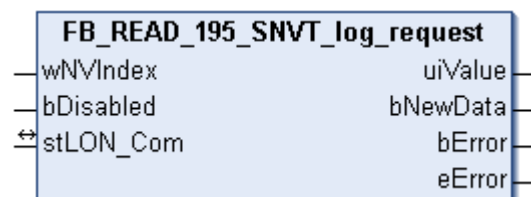
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_log_fx_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_log_fx_status [► 684]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.184 FB_READ_195_SNVT_log_request



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_log_request.

SNVT number: 195.

Description: Log status request. Requests the current status of a data log. The status is output via the SNVT_log_status output.

Inputs

```
VAR_INPUT
    wNVIndex   : WORD;
    bDisabled  : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

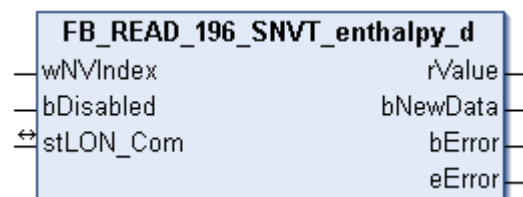
```
VAR_OUTPUT
    uiValue   : UINT;
    bNewData  : BOOL;
    bError    : BOOL;
    eError    : E_LON_ERROR;
END_VAR
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.185 FB_READ_196_SNVT_enthalpy_d



Application

This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_enthalpy_d.

SNVT number: 196.

Description: Enthalpy difference (kJ/kg).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

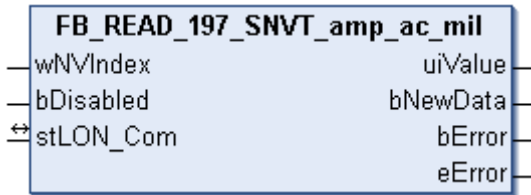
```
VAR_OUTPUT
    rValue : REAL;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
rValue	REAL	Min: -327.68 / Max: 327.66.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.186 FB_READ_197_SNVT_amp_ac_mil



Application

This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_amp_ac_mil.

SNVT number: 197.

Description: Electric current (milliampere).

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

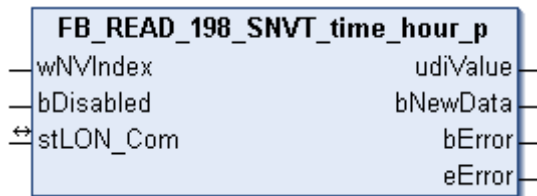
VAR_OUTPUT
    uiValue : UINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
  
```

Name	Type	Description
uiValue	UINT	Min: 0 / Max: 65535.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.187 FB_READ_198_SNVT_time_hour_p



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_time_hour_p.

SNVT number: 198.

Description: Time in hours.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    udiValue : UDINT;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

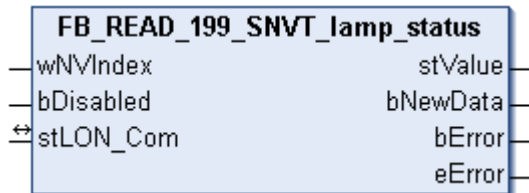
Name	Type	Description
udiValue	UDINT	Min: 0 / Max: 4294967294.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.188 FB_READ_199_SNVT_lamp_status



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_lamp_status.

SNVT number: 199.

Description: Lamp status.

Inputs

```

VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL64010 [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    stValue : ST_LON_SNVT_lamp_status;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR

```

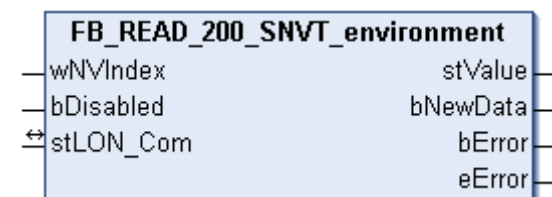
Name	Type	Description
stValue	ST_LON_SNVT_lamp_status [► 683]	Structure of the data that was received.

Name	Type	Description
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.189 FB_READ_200_SNVT_environment



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_environment.

SNVT number: 200.

Description: Environment.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> ▶ 665	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

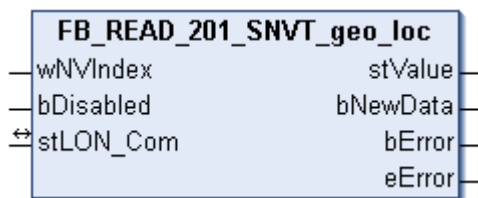
```
VAR_OUTPUT
    stValue : ST_LON_SNVT_environment;
    bNewData : BOOL;
    bError : BOOL;
    eError : E_LON_ERROR;
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_environment [► 679]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.2.190 FB_READ_201_SNVT_geo_loc



This function block receives the following LON input variable (nvi):

SNVT Name: SNVT_geo_loc.

SNVT number: 201.

Description: Geographical location.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    bDisabled : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    stValue : ST_LON_SNVT_geo_loc;
    bNewData : BOOL;
```

```
bError    : BOOL;  
eError    : E_LON_ERROR;  
END_VAR
```

Name	Type	Description
stValue	ST_LON_SNVT_geo_loc [► 681]	Structure of the data that was received.
bNewData	BOOL	Becomes TRUE for 1 cycle when the function block has received data.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	In the event of an error, the output issues an error code and <i>bError</i> becomes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3 Send

POUs	Description
FB_SEND_001_SNVT_amp [▶ 240]	Electric current (Amperes)
FB_SEND_002_SNVT_amp_mil [▶ 242]	Electric current (milliAmperes)
FB_SEND_003_SNVT_angle [▶ 243]	Angular distance (radians)
FB_SEND_004_SNVT_angle_vel [▶ 245]	Angular velocity (radians/second) ⁹
FB_SEND_005_SNVT_btu_kilo [▶ 247]	Thermal energy (kilo-Btus)
FB_SEND_006_SNVT_btu_mega [▶ 248]	Thermal energy (mega-Btus)
FB_SEND_007_SNVT_char_ascii [▶ 250]	ASCII character (8-bit ASCII character)
FB_SEND_008_SNVT_count [▶ 251]	Absolute count (units)
FB_SEND_009_SNVT_count_inc [▶ 253]	Increment count (units (delta))
FB_SEND_011_SNVT_date_day [▶ 255]	Day of week (day names)
FB_SEND_013_SNVT_elec_kwh [▶ 256]	Electric energy (kiloWatt-hours)
FB_SEND_014_SNVT_elec_whr [▶ 258]	Electric energy (Watt-hours)
FB_SEND_015_SNVT_flow [▶ 259]	Flow volume (liters/second)
FB_SEND_016_SNVT_flow_mil [▶ 261]	Flow volume (milliliters/second)
FB_SEND_017_SNVT_length [▶ 263]	Length (meters)
FB_SEND_018_SNVT_length_kilo [▶ 264]	Length (kilometers)
FB_SEND_019_SNVT_length_micr [▶ 266]	Length (micrometers (microns))
FB_SEND_020_SNVT_length_mil [▶ 268]	Length (millimeters)
FB_SEND_021_SNVT_lev_cont [▶ 269]	Continuous level (% of full level)
FB_SEND_023_SNVT_mass [▶ 271]	Mass (grams)
FB_SEND_024_SNVT_mass_kilo [▶ 273]	Mass (kilograms)
FB_SEND_025_SNVT_mass_mega [▶ 274]	Mass (metric tons)
FB_SEND_026_SNVT_mass_mil [▶ 276]	Mass (milligrams)
FB_SEND_027_SNVT_power [▶ 278]	Power (Watts)
FB_SEND_028_SNVT_power_kilo [▶ 279]	Power (kiloWatts)
FB_SEND_029_SNVT_ppm [▶ 281]	Concentration (ppm)
FB_SEND_030_SNVT_press [▶ 283]	Pressure (gauge) (kiloPascals)
FB_SEND_031_SNVT_res [▶ 284]	Electric resistance (Ohms)
FB_SEND_032_SNVT_res_kilo [▶ 286]	Electric resistance (kiloOhms)
FB_SEND_033_SNVT_sound_db [▶ 288]	Sound level (dB)
FB_SEND_034_SNVT_speed [▶ 289]	Linear velocity (meters/second)
FB_SEND_035_SNVT_speed_mil [▶ 291]	Linear velocity (meters/second)
FB_SEND_036_SNVT_str_asc [▶ 293]	Character string (30 characters max)
FB_SEND_037_SNVT_str_int [▶ 294]	Wide character string
FB_SEND_038_SNVT_telcom [▶ 296]	Telecomm states (telecomm state names)
FB_SEND_039_SNVT_temp [▶ 297]	Temperature (degrees Celsius)
FB_SEND_041_SNVT_vol [▶ 299]	Volume (liters)
FB_SEND_042_SNVT_vol_kilo [▶ 300]	Volume (kiloliters)
FB_SEND_043_SNVT_vol_mil [▶ 302]	Volume (milliliters)
FB_SEND_044_SNVT_volt [▶ 304]	Electric voltage (Volts)
FB_SEND_045_SNVT_volt_dbmv [▶ 305]	Electric voltage (dB microVolts)
FB_SEND_046_SNVT_volt_kilo [▶ 307]	Electric voltage (kiloVolts)

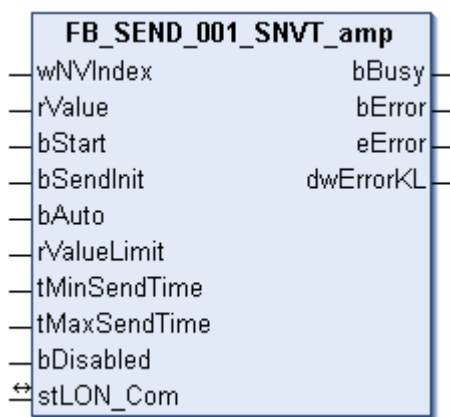
POUs	Description
FB SEND 047 SNVT volt mil [► 309]	Electric voltage (milliVolts)
FB SEND 048 SNVT amp f [► 310]	Electric current (Amperes)
FB SEND 049 SNVT angle f [► 312]	Angular distance (radians)
FB SEND 050 SNVT angle vel f [► 314]	Angular velocity (radians/second)
FB SEND 051 SNVT count f [► 315]	Absolute count (units)
FB SEND 052 SNVT count inc f [► 317]	Increment count (units (delta))
FB SEND 053 SNVT flow f [► 319]	Flow volume (liters/second)
FB SEND 054 SNVT length f [► 320]	Length (meters)
FB SEND 055 SNVT lev cont f [► 322]	Continuous level (% of full scale)
FB SEND 056 SNVT mass f [► 324]	Mass (grams)
FB SEND 057 SNVT power f [► 325]	Power (Watts)
FB SEND 058 SNVT ppm f [► 327]	Concentration (ppm)
FB SEND 059 SNVT press f [► 329]	Pressure (gauge) (Pascals)
FB SEND 060 SNVT res f [► 330]	Electric resistance (Ohms)
FB SEND 061 SNVT sound db f [► 332]	Sound level (dBspl)
FB SEND 062 SNVT speed f [► 334]	Linear velocity (meters/second)
FB SEND 063 SNVT temp f [► 335]	Temperature (degrees Celsius)
FB SEND 064 SNVT time f [► 337]	Elapsed time (seconds)
FB SEND 065 SNVT vol f [► 339]	Volume (liters)
FB SEND 066 SNVT volt f [► 340]	Electric voltage (Volts)
FB SEND 067 SNVT btu f [► 342]	Thermal energy (Btus)
FB SEND 068 SNVT elec whr f [► 344]	Electric energy (Watt-hours)
FB SEND 069 SNVT config_src [► 345]	Configuration source (configuration source names)
FB SEND 070 SNVT color [► 347]	CIELAB color (L*,a*,b)
FB SEND 071 SNVT grammage [► 348]	Grammage (grams/sq meter)
FB SEND 072 SNVT grammage f [► 350]	Grammage (grams/sq meter)
FB SEND 073 SNVT file_req [► 351]	File request
FB SEND 074 SNVT file_status [► 353]	File status
FB SEND 075 SNVT freq f [► 354]	Frequency (Hertz)
FB SEND 076 SNVT freq_hz [► 356]	Frequency (Hertz)
FB SEND 077 SNVT freq_kilohz [► 358]	Frequency (kiloHertz)
FB SEND 078 SNVT freq_milhz [► 359]	Frequency (Hertz)
FB SEND 079 SNVT lux [► 361]	Illumination (lux)
FB SEND 081 SNVT lev_percent [► 363]	Percentage level (% of full level)
FB SEND 082 SNVT multiplier [► 364]	Multiplier (16-bit unsigned value)
FB SEND 083 SNVT state [► 366]	State vector (16 individual bit values)
FB SEND 084 SNVT time_stamp [► 367]	Time stamp (year, month, day, hour, minute, second)
FB SEND 085 SNVT zerospan [► 369]	Zero and span (Zero, span)
FB SEND 086 SNVT magcard [► 370]	ISO 7811 (40 hexadecimal digits)
FB SEND 087 SNVT elapsed_tm [► 372]	Elapsed time (day, hour, minute, second, millisecond)
FB SEND 088 SNVT alarm [► 373]	Alarm status
FB SEND 089 SNVT currency [► 375]	Currency (unit, magnitude, value)
FB SEND 090 SNVT file_pos [► 376]	File position (pointer, length)

POUs	Description
FB SEND 091 SNVT muldiv [▶ 378]	Multiply/Divide (multiplier, divisor)
FB SEND 092 SNVT obj request [▶ 379]	Object request (ID, request)
FB SEND 093 SNVT obj status [▶ 381]	Object status (ID, status flags)
FB SEND 094 SNVT preset [▶ 383]	Preset (mode, data, time)
FB SEND 095 SNVT switch [▶ 385]	Switch (value, state)
FB SEND 096 SNVT trans table [▶ 386]	Translation table (points, interpolation)
FB SEND 097 SNVT override [▶ 388]	Override code (override code names)
FB SEND 098 SNVT pwr fact [▶ 389]	Power factor (multiplier)
FB SEND 099 SNVT pwr fact f [▶ 391]	Power factor (multiplier) .
FB SEND 100 SNVT density [▶ 392]	Density (kilograms/cubic meter)
FB SEND 101 SNVT density f [▶ 394]	Density (kilograms/cubic meter) .
FB SEND 102 SNVT rpm [▶ 396]	Angular velocity (revolutions/minute (RPM))
FB SEND 103 SNVT hvac emerg [▶ 397]	HVAC emergency mode (emergency mode names)
FB SEND 104 SNVT angle deg [▶ 399]	Angular distance (degrees)
FB SEND 105 SNVT temp p [▶ 400]	Temperature (degrees Celsius)
FB SEND 106 SNVT temp setpt [▶ 402]	Temperature (6 temperature values)
FB SEND 107 SNVT time sec [▶ 403]	Elapsed time (seconds)
FB SEND 108 SNVT hvac mode [▶ 405]	HVAC mode (HVAC mode names)
FB SEND 109 SNVT occupancy [▶ 407]	Occupancy (occupancy code names)
FB SEND 110 SNVT area [▶ 408]	Area (square meters)
FB SEND 111 SNVT hvac overid [▶ 410]	HVAC override (state, pct, flow)
FB SEND 112 SNVT hvac status [▶ 411]	HVAC status (mode, 5 percents, flag)
FB SEND 113 SNVT press p [▶ 413]	Pressure (gauge) (Pascals)
FB SEND 114 SNVT address [▶ 414]	Neuron address (16-bit address value)
FB SEND 115 SNVT scene [▶ 416]	Scene control (function, scene number)
FB SEND 116 SNVT scene cfg [▶ 417]	Scene configuration
FB SEND 117 SNVT setting [▶ 419]	Setting control (function, setting, rotation)
FB SEND 118 SNVT evap state [▶ 421]	Evaporator state (evaporator state names)
FB SEND 119 SNVT therm mode [▶ 422]	Thermostat mode (thermostat mode names)
FB SEND 120 SNVT defr mode [▶ 424]	Defrost mode (defrost mode names)
FB SEND 121 SNVT defr term [▶ 425]	Defrost termination (defrost termination names)
FB SEND 122 SNVT defr state [▶ 427]	Defrost state (defrost state names)
FB SEND 123 SNVT time min [▶ 428]	Elapsed time (minutes)
FB SEND 124 SNVT time hour [▶ 430]	Elapsed time (hours)
FB SEND 125 SNVT ph [▶ 431]	Acidity (pH) . Ratio of concentration of ions
FB SEND 126 SNVT ph f [▶ 433]	Acidity (pH) . Ratio of concentration of ions
FB SEND 127 SNVT chlr status [▶ 435]	Chiller status (run mode, op mode, state bits)
FB SEND 128 SNVT tod event [▶ 436]	Time of day event (current, next, time)
FB SEND 129 SNVT smo obscur [▶ 438]	Smoke obscuration (percent obscuration)
FB SEND 130 SNVT fire test [▶ 439]	Fire test request (fire test names)
FB SEND 131 SNVT temp ror [▶ 441]	Temperature rate of change/rise (degrees Celsius/minute)
FB SEND 132 SNVT fire init [▶ 442]	Fire initiator type (fire initiator type names)
FB SEND 133 SNVT fire indcte [▶ 444]	Fire indicator type (fire indicator type names)

POUs	Description
FB SEND 134 SNVT time zone [► 445]	Time zone descriptor (offset, type, startDST, endDST)
FB SEND 135 SNVT earth_pos [► 447]	Earth position
FB SEND 136 SNVT reg_val [► 448]	Register value
FB SEND 137 SNVT reg_val_ts [► 450]	Register value
FB SEND 138 SNVT volt_ac [► 451]	Voltage in alternating current (volts AC)
FB SEND 139 SNVT amp_ac [► 453]	Amperage in alternating current (amperes AC)
FB SEND 143 SNVT turbidity [► 454]	Turbidity (nephelometric turbidity units)
FB SEND 144 SNVT turbidity_f [► 456]	Turbidity (nephelometric turbidity units)
FB SEND 145 SNVT hvac_type [► 458]	HVAC unit type (HVAC unit type names)
FB SEND 146 SNVT elec_kwh_l [► 459]	Electric energy (kiloWatt-hours) .
FB SEND 147 SNVT temp_diff_p [► 461]	Temp difference (degrees Celsius) .
FB SEND 148 SNVT ctrl_req [► 462]	Control request (receiver ID, sender ID, sender priority)
FB SEND 149 SNVT ctrl_resp [► 464]	Control response (status, sender, controller ID)
FB SEND 150 SNVT ptz [► 465]	Camera PTZ (pan, pan speed, tilt, tilt speed, zoom, zoom speed) .
FB SEND 151 SNVT_privacyzone [► 467]	Privacy zone (action, zone number, camera ID)
FB SEND 152 SNVT_pos_ctrl [► 468]	Position control
FB SEND 153 SNVT_enthalpy [► 470]	Enthalpy (kiloJoules/kg)
FB SEND 154 SNVT_gfci_status [► 471]	GFCI status type
FB SEND 155 SNVT_motor_state [► 473]	Motor state (motor state names)
FB SEND 156 SNVT_pumpset_mn [► 474]	Pumpset
FB SEND 157 SNVT_ex_control [► 476]	Exclusive control (status, address)
FB SEND 158 SNVT_pumpset_sn [► 477]	Pumpset sensor
FB SEND 159 SNVT_pump_sensor [► 479]	Pump sensor (speed, temperature, status)
FB SEND 160 SNVT_abs_humid [► 480]	Absolute humidity (gram/kilogram)
FB SEND 161 SNVT_flow_p [► 482]	Flow volume (cubic meters/hour)
FB SEND 162 SNVT_dev_c_mode [► 484]	Device control mode (device control mode names)
FB SEND 163 SNVT_valve_mode [► 485]	Valve mode (valve mode names)
FB SEND 164 SNVT_alarm_2 [► 487]	Alarm status 2
FB SEND 165 SNVT_state_64 [► 488]	State vector (64 individual bit values)
FB SEND 166 SNVT_nv_type [► 490]	Network variable type
FB SEND 168 SNVT_ent_opmode [► 491]	Entry operation mode
FB SEND 169 SNVT_ent_state [► 493]	Entry state
FB SEND 170 SNVT_ent_status [► 494]	Entry status
FB SEND 171 SNVT_flow_dir [► 496]	Flow direction (flow direction names)
FB SEND 172 SNVT_hvac_satsts [► 497]	HVAC saturation status
FB SEND 173 SNVT_dev_status [► 499]	Device status
FB SEND 174 SNVT_dev_fault [► 500]	Device fault states
FB SEND 175 SNVT_dev_maint [► 502]	Device maintenance
FB SEND 176 SNVT_date_event [► 503]	Date event
FB SEND 177 SNVT_sched_val [► 505]	Scheduler value
FB SEND 180 SNVT_sbInd_state [► 506]	Sunblind State
FB SEND 181 SNVT_rac_ctrl [► 508]	Rail-Audio Controller Control

POUs	Description
FB_SEND 182 SNVT rac req [► 509]	Rail-Audio Controller Request
FB_SEND 183 SNVT count 32 [► 511]	Absolute count. A 32-bit counter
FB_SEND 184 SNVT clothes w c [► 512]	Clothes Washer Command
FB_SEND 185 SNVT clothes w m [► 514]	Clothes Washer-Management Status
FB_SEND 186 SNVT clothes w s [► 515]	Clothes Washer Status
FB_SEND 187 SNVT clothes w a [► 517]	Clothes Washer Alarm
FB_SEND 188 SNVT multiplier s [► 518]	Multiplier. Value multiplier
FB_SEND 189 SNVT switch 2 [► 520]	Switch with scene and setting control
FB_SEND 190 SNVT color 2 [► 521]	Color.
FB_SEND 191 SNVT log status [► 523]	Log status (hundredths of second)
FB_SEND 192 SNVT time stamp p [► 524]	Precision timestamp. (seconds)
FB_SEND 193 SNVT log fx request [► 526]	Log file transfer request.
FB_SEND 194 SNVT log fx status [► 527]	Log file transfer status.
FB_SEND 195 SNVT log request [► 529]	Log status request.
FB_SEND 196 SNVT enthalpy d [► 530]	Enthalpy difference (kJ/kg)
FB_SEND 197 SNVT amp ac mil [► 532]	Electrical current (milliAmperes)
FB_SEND 198 SNVT time hour p [► 534]	Time hour (hours)
FB_SEND 199 SNVT lamp status [► 535]	Lamp Status
FB_SEND 200 SNVT environment [► 537]	Environment
FB_SEND 201 SNVT geo loc [► 538]	Geographic Location

4.1.3.1 FB_SEND_001_SNVT_amp



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_amp.

SNVT number: 001.

Description: Electric current (ampere).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
rValueLimit : REAL := 1;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

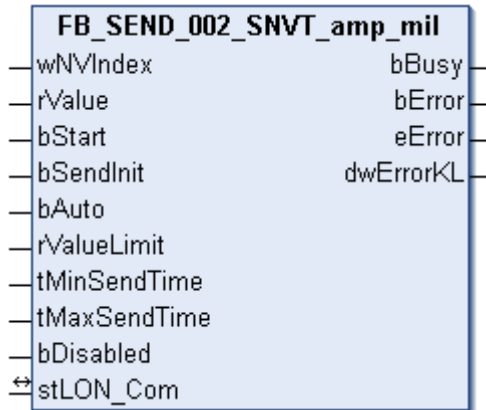
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401()</u> [► 27] (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.2 FB_SEND_002_SNVT_amp_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_amp_mil.

SNVT number: 002.

Description: Electric current (milliampere).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

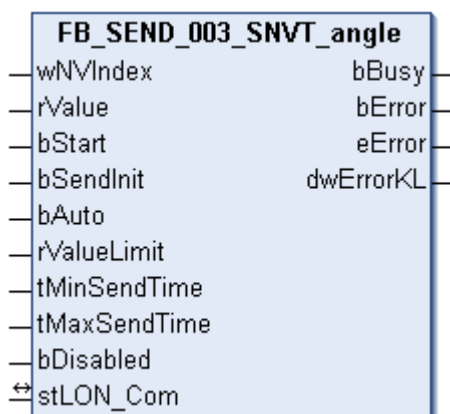
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.3 FB_SEND_003_SNVT_angle



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_angle.

SNVT number: 003.

Description: Angular distance (radian).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 65,535.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL64010</u> [► 27] with the transmit/receive blocks.

Outputs

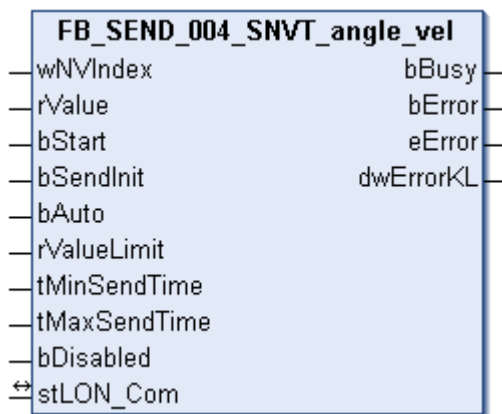
```
VAR_OUTPUT
  bBusy        : BOOL;
  bError       : BOOL;
  eError       : E_LON_ERROR;
  dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]</u> () (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.4 FB_SEND_004_SNVT_angle_vel



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_angle_vel.

SNVT number: 004.

Description: Angular velocity (radian / second).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.5 FB_SEND_005_SNVT_btu_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_btu_kilo.

SNVT number: 005.

Description: Thermal energy (kiloBtu).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

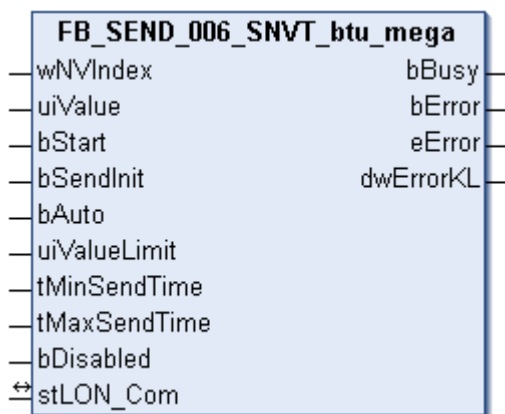
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.6 FB_SEND_006_SNVt_btu_mega



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_btu_mega.

SNVT number: 006.

Description: Thermal energy (megaBtu).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.7 FB_SEND_007_SNVT_char_ascii



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_char_ascii.

SNVT number: 007.

Description: ASCII character (8-bit ASCII character).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    sValue        : STRING(1);
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
sValue	STRING	STRING(1).
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

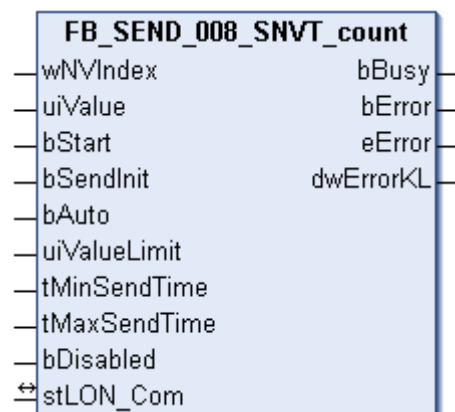
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.8 FB_SEND_008_SNVT_count



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_count.

SNVT number: 008.

Description: Counter (only positive values).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  uiValue       : UINT;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  uiValueLimit  : UINT := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for automatic sending [► 707] . The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

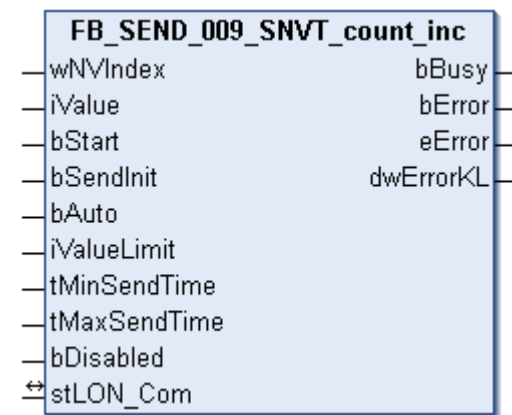
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.

Name	Type	Description
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.9 FB_SEND_009_SNVT_count_inc



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_count_inc.

SNVT number: 009.

Description: Counter (negative and positive values).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    iValue        : INT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    iValueLimit   : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
iValue	INT	Min: -32768 / Max: 32767.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
iValueLimit	UINT	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>iValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

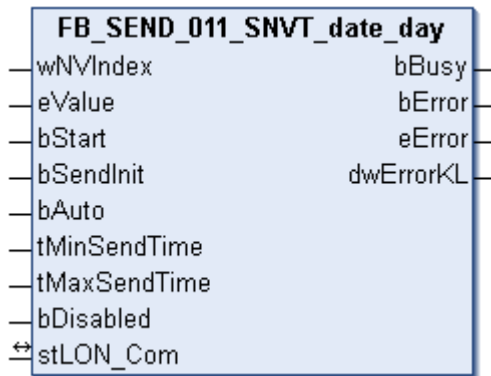
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.10 FB_SEND_011_SNVT_date_day



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_date_day.

SNVT number: 011.

Description: Day of the week.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_days_of_week_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_days_of_week_t [► 593]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

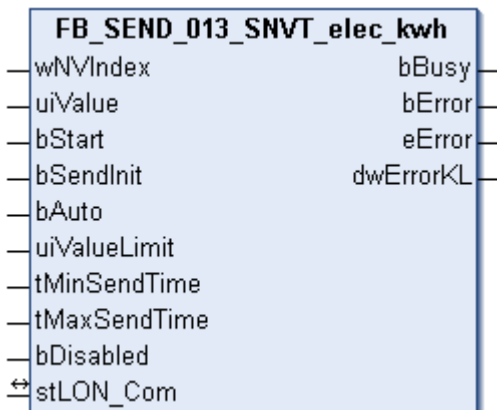
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.11 FB_SEND_013_SNVT_elec_kwh



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_elec_kwh.

SNVT number: 013.

Description: Electric energy (kW/h).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  uiValue       : UINT;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  uiValueLimit  : UINT := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

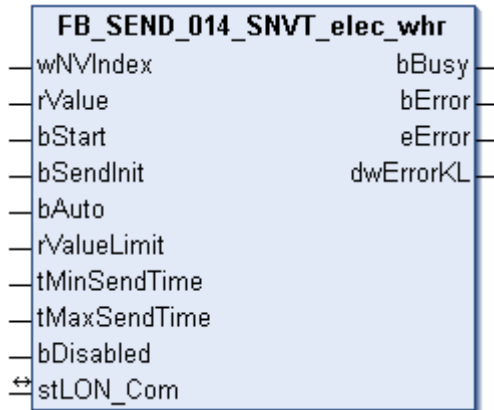
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.12 FB_SEND_014_SNVT_elec_whr



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_elec_whr.

SNVT number: 014.

Description: Electric energy (W/h).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

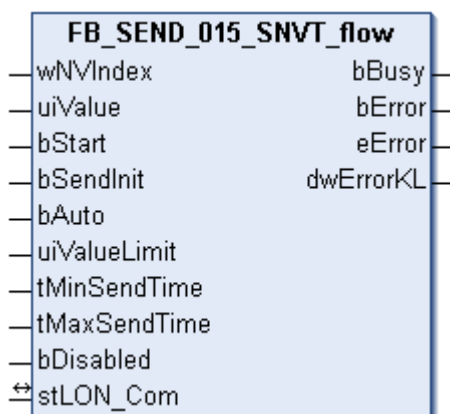
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.13 FB_SEND_015_SNVT_flow



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_flow.

SNVT number: 015.

Description: Volume flow (liters / second).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  uiValue       : UINT;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  uiValueLimit  : UINT := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

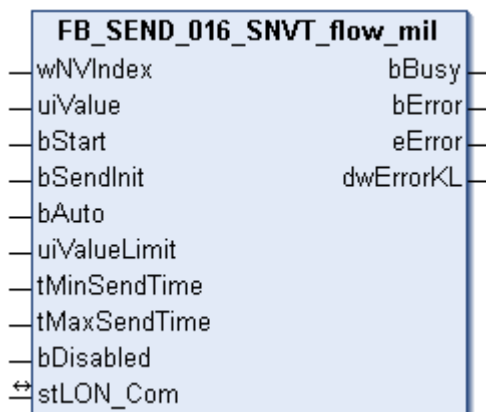
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]</u> () (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.14 FB_SEND_016_SNVT_flow_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_flow_mil.

SNVT number: 016.

Description: Volume flow (milliliters / second).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

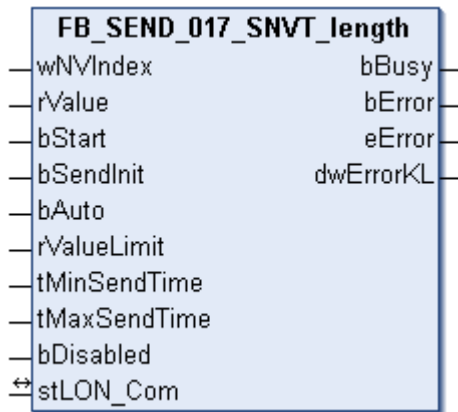
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.15 FB_SEND_017_SNVT_length



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_length.

SNVT number: 017.

Description: Length (meter).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

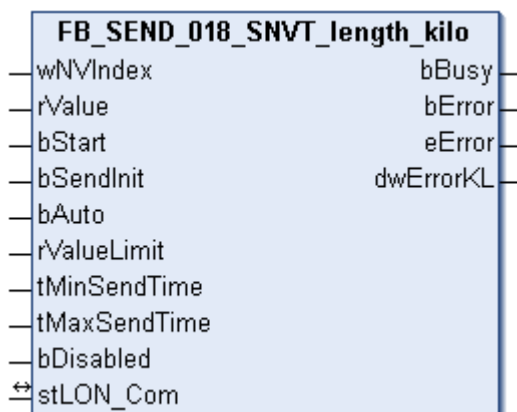
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.16 FB_SEND_018_SNVT_length_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_length_kilo.

SNVT number: 018.

Description: Length (kilometer).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

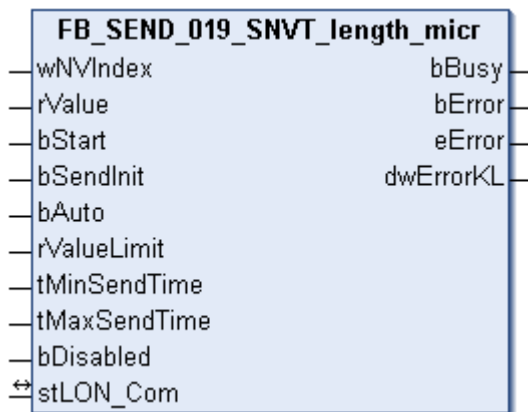
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.17 FB_SEND_019_SNVT_length_micr



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_length_micr.

SNVT number: 019.

Description: Length (micrometer).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

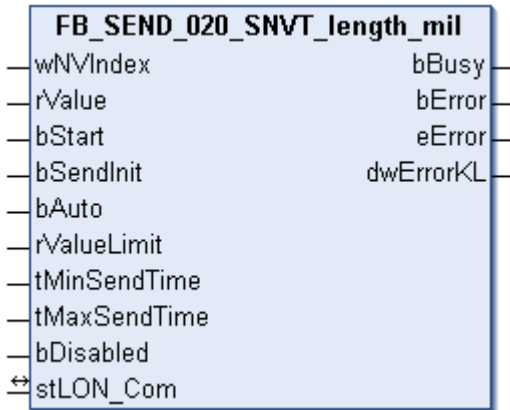
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.18 FB_SEND_020_SNVT_length_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_length_mil.

SNVT number: 020.

Description: Length (millimeter).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

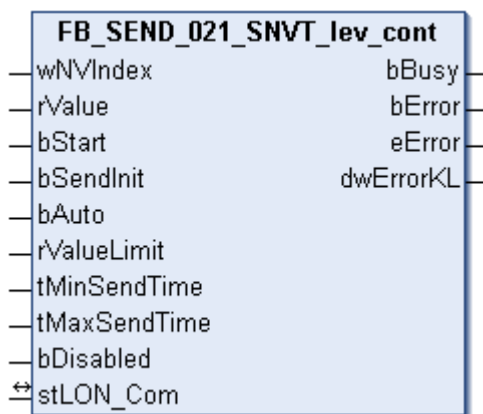
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.19 FB_SEND_021_SNVT_lev_cont



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_lev_cont.

SNVT number: 021.

Description: Continuous change in value (% from maximum level).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 100.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

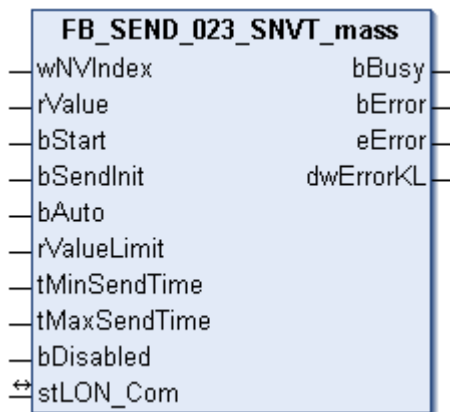
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.20 FB_SEND_023_SNVT_mass



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_mass.

SNVT number: 023.

Description: Mass (gram).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

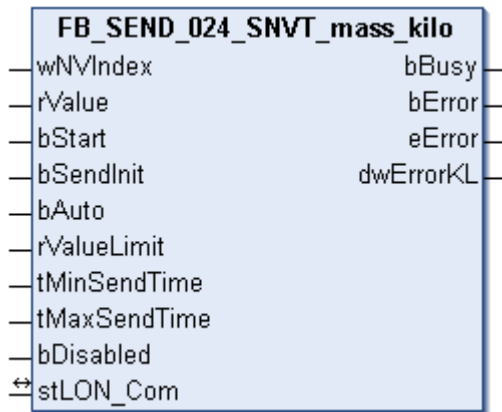
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.21 FB_SEND_024_SNVT_mass_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_mass_kilo.

SNVT number: 024.

Description: Mass (kilogram).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

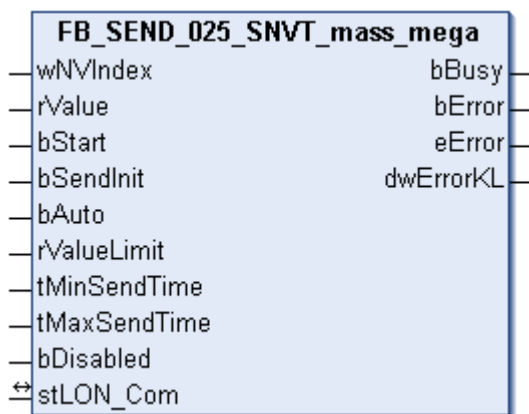
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401()</u> [► 27] (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.22 FB_SEND_025_SNVT_mass_mega



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_mass_mega.

SNVT number: 025.

Description: Mass (metric ton).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy        : BOOL;
    bError       : BOOL;
    eError       : E_LON_ERROR;
    dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.23 FB_SEND_026_SNVT_mass_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_mass_mil.

SNVT number: 026.

Description: Mass (milligram).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.24 FB_SEND_027_SNVT_power



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_power.

SNVT number: 027.

Description: Power (watt).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

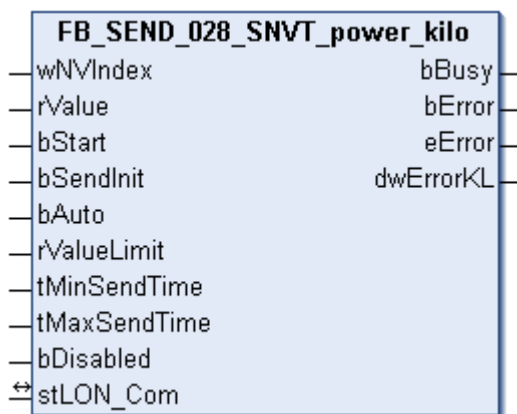
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.25 FB_SEND_028_SNVT_power_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_power_kilo.

SNVT number: 028.

Description: Power (kilowatt).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

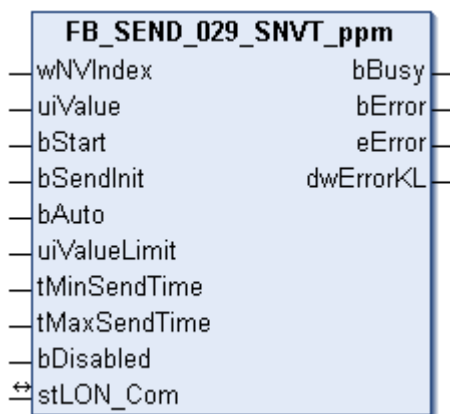
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.26 FB_SEND_029_SNVT_ppm



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ppm.

SNVT number: 029.

Description: Concentration (ppm).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
uiValueLimit	UINT	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

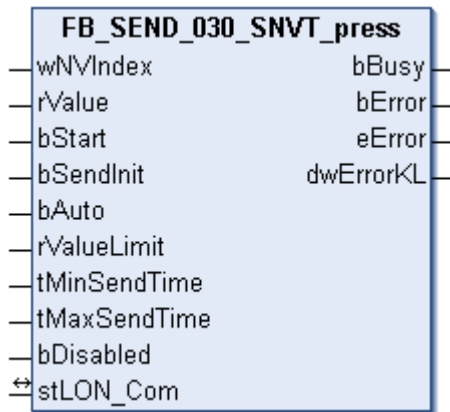
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.27 FB_SEND_030_SNVT_press



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_press.

SNVT number: 030.

Description: Pressure (overpressure) (kilopascal).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

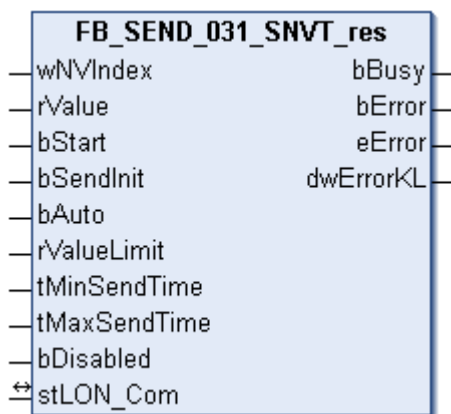
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.28 FB_SEND_031_SNVT_res



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_res.

SNVT number: 031.

Description: Electric resistance (ohm).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy        : BOOL;
    bError       : BOOL;
    eError       : E_LON_ERROR;
    dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.29 FB_SEND_032_SNVT_res_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_res_kilo.

SNVT number: 032.

Description: Electric resistance (kiloohm).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

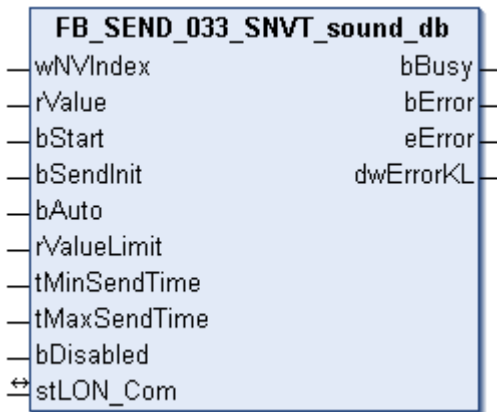
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.30 FB_SEND_033_SNVT_sound_db



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_sound_db.

SNVT number: 033.

Description: Sound pressure level (dB).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -327.68 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

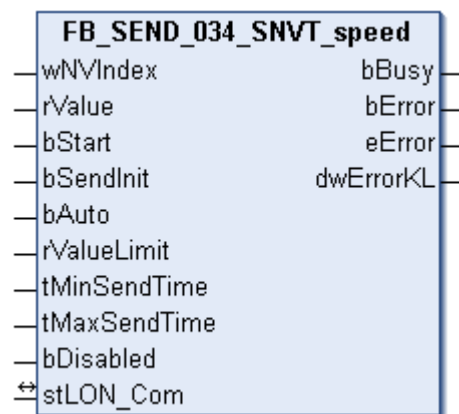
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.31 FB_SEND_034_SNVT_speed



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_speed.

SNVT number: 034.

Description: Linear velocity (meters / second).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.32 FB_SEND_035_SNVT_speed_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_speed_mil.

SNVT number: 035.

Description: Linear velocity (millimeters / second).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 65,535.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

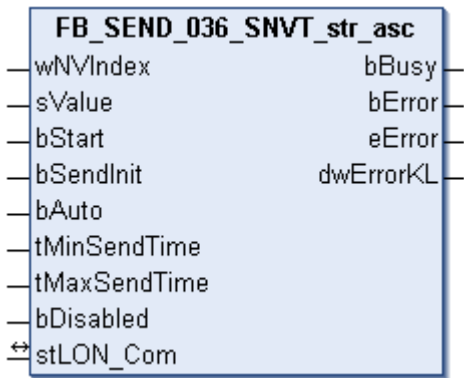
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.33 FB_SEND_036_SNVT_str_asc



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_str_asc.

SNVT number: 036.

Description: String (max. 30 characters) (ASCII string).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  sValue        : STRING(31);
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
sValue	STRING	STRING(31).
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

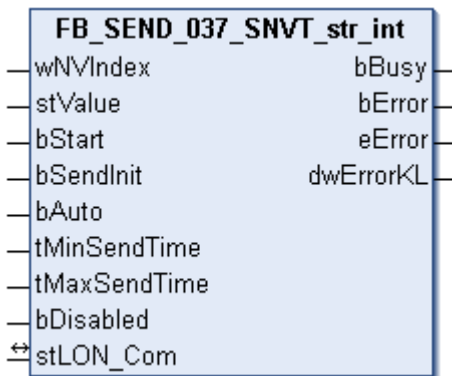
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.34 FB_SEND_037_SNVT_str_int



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_str_int.

SNVT number: 037.

Description: Wide character string with own code (max. 15 characters) (wide character string).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_str_int;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_str_int [► 695]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

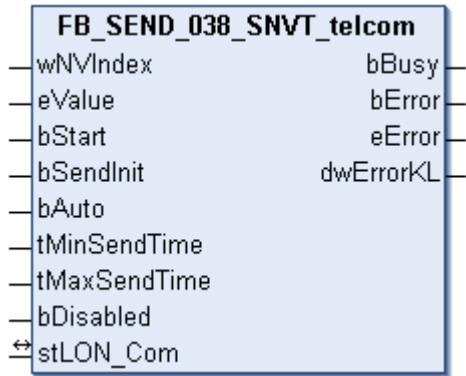
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.35 FB_SEND_038_SNVt_telcom



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_telcom.

SNVT number: 038.

Description: Telephone status (telephone status name).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_telcom_states_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_telcom_states_t [► 627]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

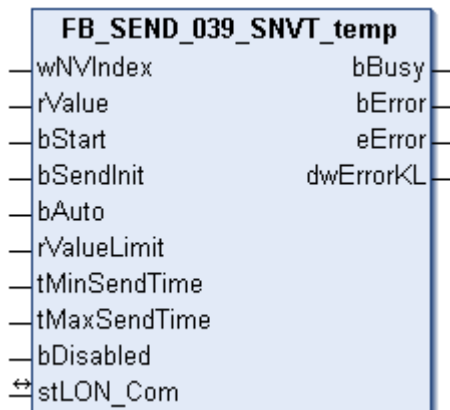
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.36 FB_SEND_039_SNVTemp



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp.

SNVT number: 039.

Description: Temperature (°C).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  rValue      : REAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  rValueLimit : REAL := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -274 / Max: 6279.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

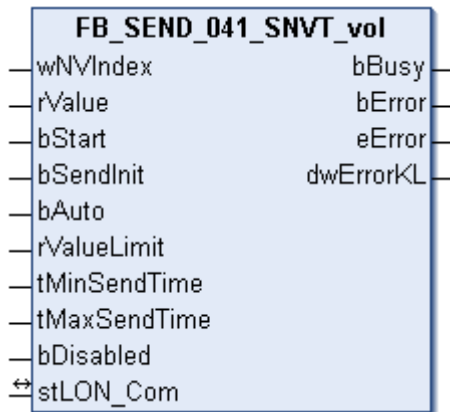
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.37 FB_SEND_041_SNVT_vol



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_vol.

SNVT number: 041.

Description: Volume (liter).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

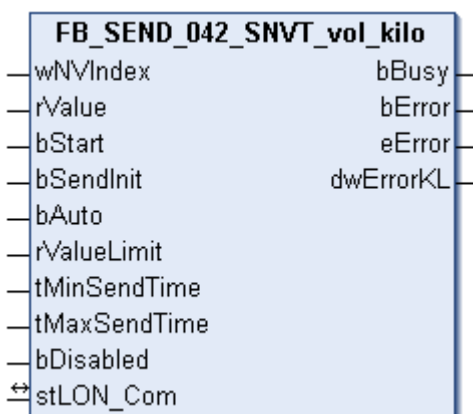
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.38 FB_SEND_042_SNVT_vol_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_vol_kilo.

SNVT number: 042.

Description: Volume (kiloliter).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST LON Communication</u> [► 665]	This structure is used to link <u>FB LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]</u> () (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.39 FB_SEND_043_SNVT_vol_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_vol_mil.

SNVT number: 043.

Description: Volume (milliliter).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

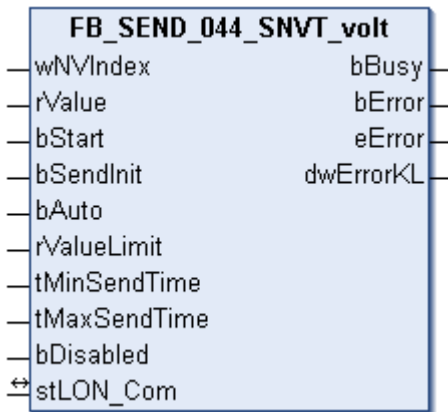
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.40 FB_SEND_044_SNVT_volt



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt.

SNVT number: 044.

Description: Electrical voltage (volt).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

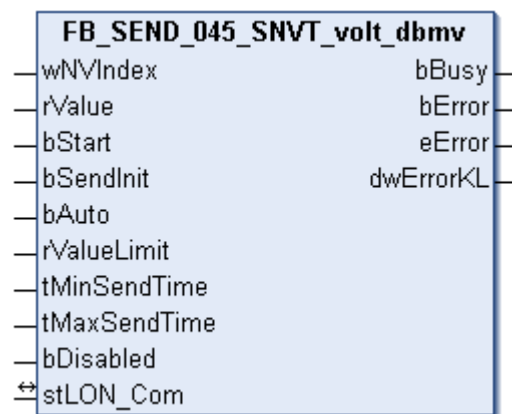
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.41 FB_SEND_045_SNVt_volt_dbmv



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt_dbmv.

SNVT number: 045.

Description: Electrical voltage (dB microvolt).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -327.68 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.42 FB_SEND_046_SNVT_volt_kilo



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt_kilo.

SNVT number: 046.

Description: Electrical voltage (kilovolt).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.43 FB_SEND_047_SNVT_volt_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt_mil.

SNVT number: 047.

Description: Electrical voltage (millivolt).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3276.8 / Max: 3276.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.44 FB_SEND_048_SNVT_amp_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_amp_f.

SNVT number: 048.

Description: Electric current (ampere).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.45 FB_SEND_049_SNVT_angle_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_angle_f.

SNVT number: 049.

Description: Angular distance (radian).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

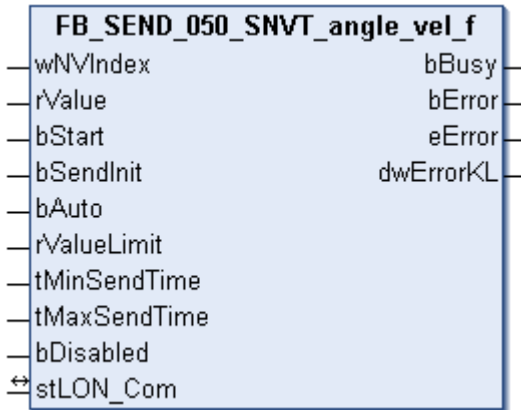
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.46 FB_SEND_050_SNVT_angle_vel_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_angle_vel_f.

SNVT number: 050.

Description: Angular velocity (radian / second).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

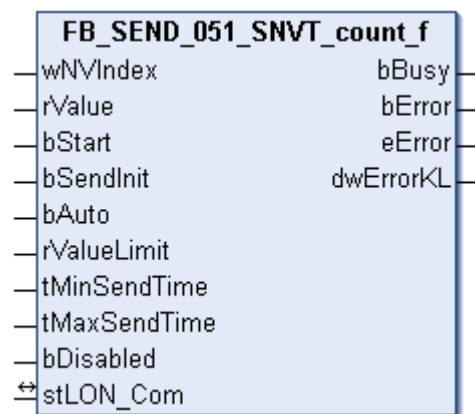
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.47 FB_SEND_051_SNVT_count_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_count_f.

SNVT number: 051.

Description: Absolute number (items).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

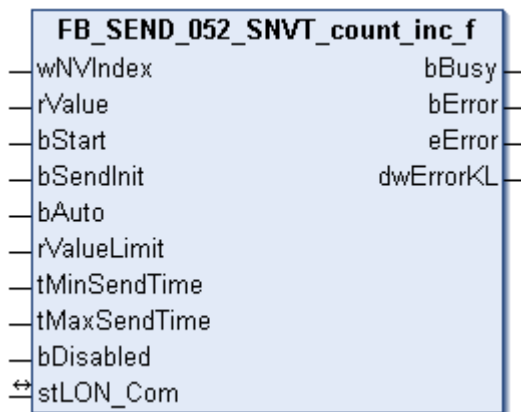
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.48 FB_SEND_052_SNVT_count_inc_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_count_inc_f.

SNVT number: 052.

Description: Increment counter (items(delta)).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

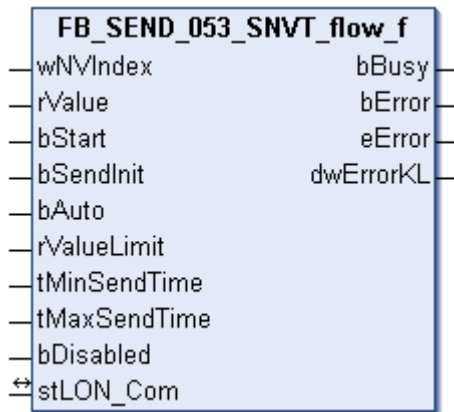
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.49 FB_SEND_053_SNVT_flow_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_flow_f.

SNVT number: 053.

Description: Volume flow (liters / second).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

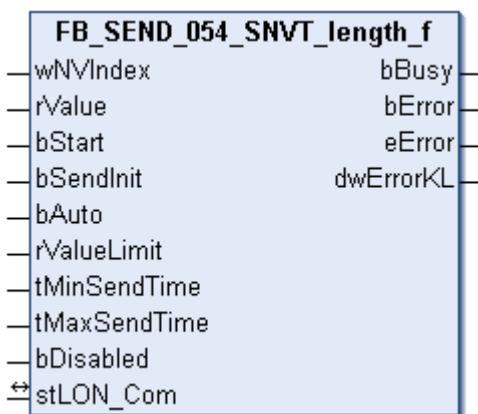
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.50 FB_SEND_054_SNVT_length_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_length_f.

SNVT number: 054.

Description: Length (meter).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy        : BOOL;
    bError       : BOOL;
    eError       : E_LON_ERROR;
    dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.51 FB_SEND_055_SNVT_lev_cont_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_lev_cont_f.

SNVT number: 055.

Description: Continuous change in value (% from maximum level).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 100.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

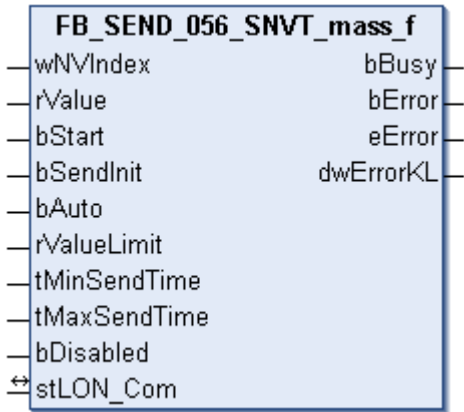
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.52 FB_SEND_056_SNVT_mass_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_mass_f.

SNVT number: 056.

Description: Mass (gram).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

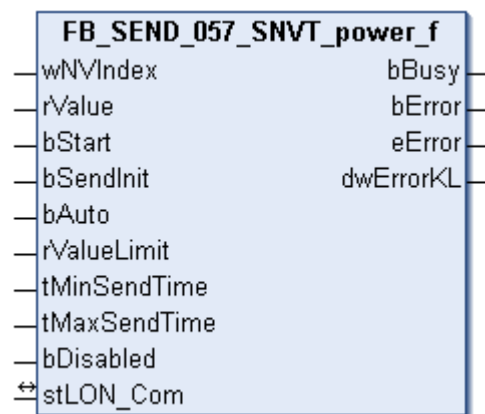
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.53 FB_SEND_057_SNVT_power_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_power_f.

SNVT number: 057.

Description: Power (watt).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

```

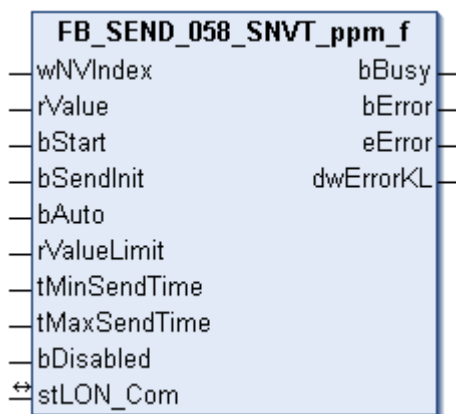
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.54 FB_SEND_058_SNVT_ppm_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ppm_f.

SNVT number: 058.

Description: Concentration (ppm).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.55 FB_SEND_059_SNVT_press_f

**Application**

This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_press_f.

SNVT number: 059.

Description: Pressure (overpressure) (pascal).

 Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.

Name	Type	Description
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

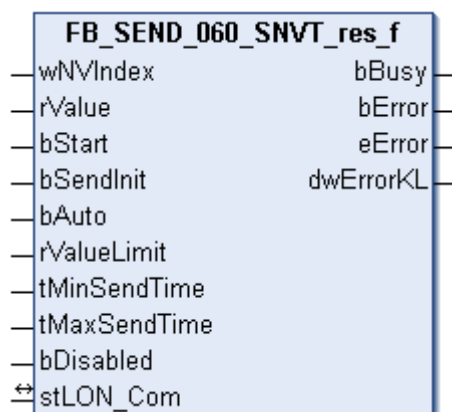
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.56 FB_SEND_060_SNVT_res_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_res_f.

SNVT number: 060.

Description: Electric resistance (ohm).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

```

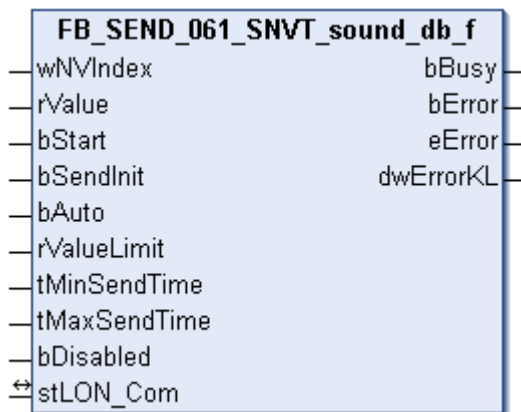
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.57 FB_SEND_061_SNVT_sound_db_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_sound_db_f.

SNVT number: 061.

Description: Sound pressure level (dBspl).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

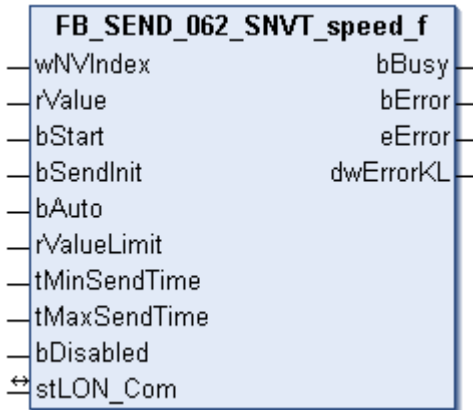
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.58 FB_SEND_062_SNVT_speed_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_speed_f.

SNVT number: 062.

Description: Linear velocity (meters / second).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

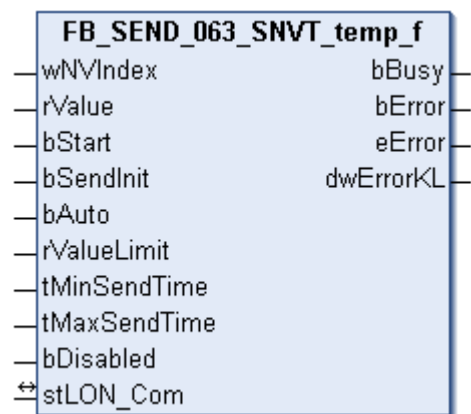
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.59 FB_SEND_063_SNVTemp_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp_f.

SNVT number: 063.

Description: Temperature (°C).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -273.17 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.60 FB_SEND_064_SNVT_time_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_f.

SNVT number: 064.

Description: Elapsed time (seconds).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

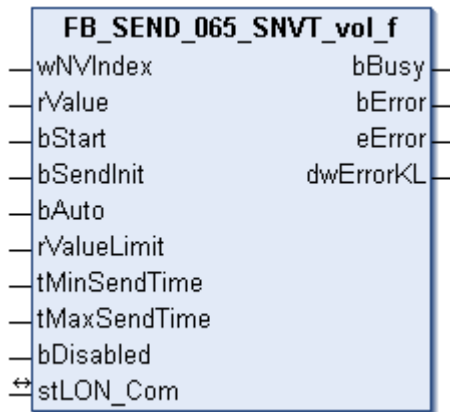
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.61 FB_SEND_065_SNVT_vol_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_vol_f.

SNVT number: 065.

Description: Volume (liter).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

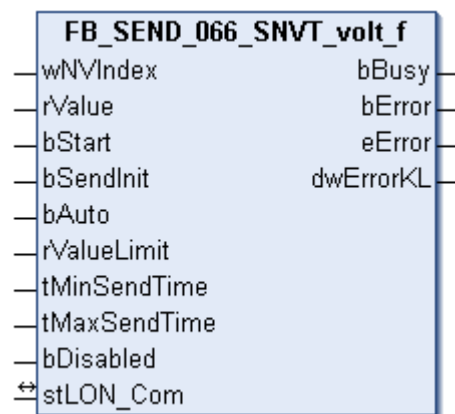
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.62 FB_SEND_066_SNVt_volt_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt_f.

SNVT number: 066.

Description: Electrical voltage (volt).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

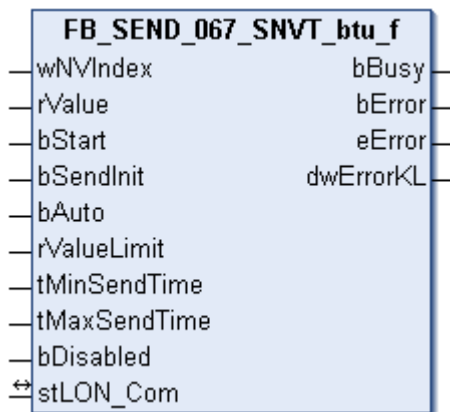
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.63 FB_SEND_067_SNVt_btu_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_btu_f.

SNVT number: 067.

Description: Thermal energy (Btu).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

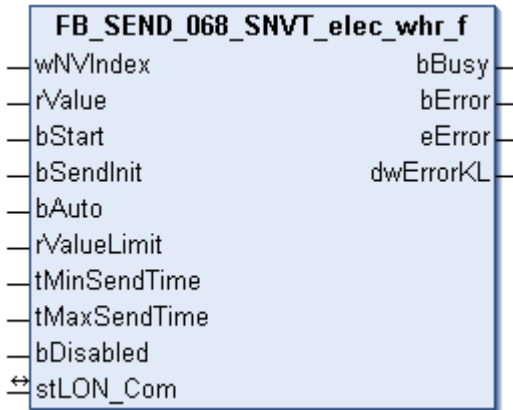
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.64 FB_SEND_068_SNVT_elec_whr_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_elec_whr_f.

SNVT number: 068.

Description: Electric energy (Watt / hour).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

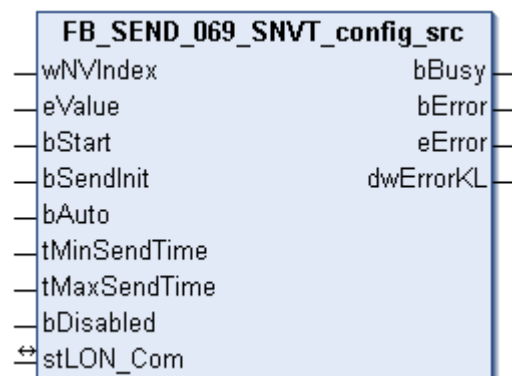
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.65 FB_SEND_069_SNVT_config_src



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_config_src.

SNVT number: 069.

Description: Configuration properties (name of the configuration source (0=own, 1=external)).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    eValue   : E_LON_config_source_t;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_config_source_t [► 589]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

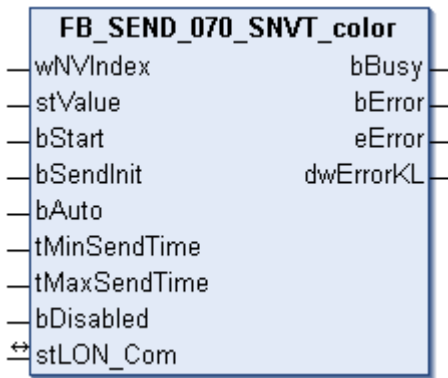
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.66 FB_SEND_070_SNVT_color



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_color.

SNVT number: 070.

Description: Color according to CIE standard (L*,a*,b).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_color;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_color [► 674]	Structure of the data to be sent. stValue. rL_star: Min: 0 / Max: 100.0 / L* stValue. rA_star: Min: -200.0 / Max: 200.0 / a* stValue. rB_star: Min: -200.0 / Max: 200.0 / b*
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

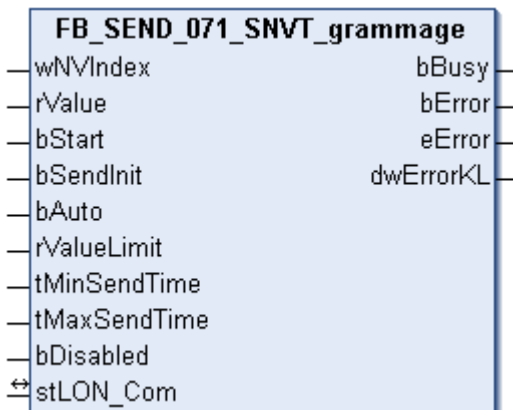
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.67 FB_SEND_071_SNVT_grammage



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_grammage.

SNVT number: 071.

Description: American dimension for paper weight and density (gram/m²).

Inputs

```

VAR_INPUT
  wNVIndex    : WORD;
  rValue      : REAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  rValueLimit : REAL := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;

```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707] . The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
bBusy      : BOOL;
bError     : BOOL;
eError     : E_LON_ERROR;
dwErrorKL  : DWORD;
END_VAR

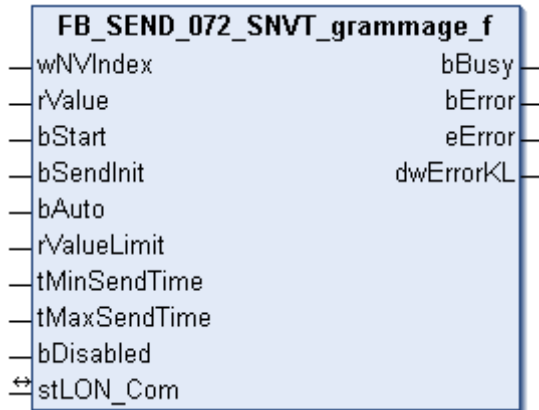
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.68 FB_SEND_072_SNVT_grammage_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_grammage_f.

SNVT number: 072.

Description: American dimension for paper weight and density (gram/m²).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

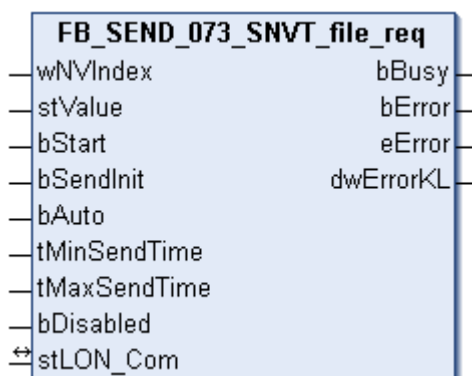
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.69 FB_SEND_073_SNVT_file_req



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_file_req.

SNVT number: 073.

Description: File request.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_file_req;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_file_req [► 680]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

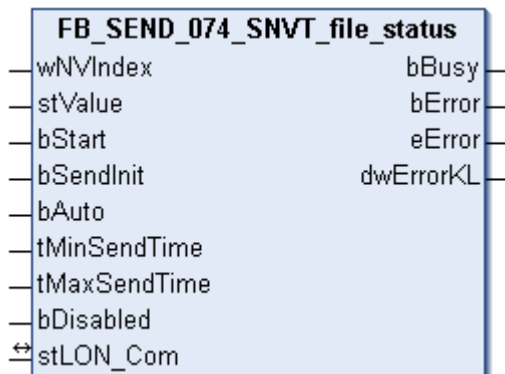
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401 [► 27]()</code> (see <code>dwErrorKL [► 707]</code>). In this case the variable <code>eError</code> has the value <code>eKL6401_Error</code> . <code>bError</code> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.70 FB_SEND_074_SNVT_file_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_file_status.

SNVT number: 074.

Description: File information (part of the LONWORKS file transfer protocol (LW-FTP)).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_file_status;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_file_status [► 681]	Structure of the data to be sent. If <code>stValue.eStatus = eLON_FS_LOOKUP_OK (1)</code> , then the structure <code>stValue.stAddr.stDescriptor</code> is sent. Otherwise <code>stValue.stAddr.stAddress</code> is sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.71 FB_SEND_075_SNVF_freq_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_freq_f.

SNVT number: 075.

Description: Frequency (hertz).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
```

```

eError      : E_LON_ERROR;
dwErrorKL   : DWORD;
END_VAR

```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27] () (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.72 FB_SEND_076_SNVT_freq_hz



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_freq_hz.

SNVT number: 076.

Description: Frequency (hertz).

Inputs

```

VAR_INPUT
wNVIndex      : WORD;
rValue        : REAL;
bStart        : BOOL;
bSendInit     : BOOL := bSendInitDefault;
bAuto         : BOOL := bAutoDefault;
rValueLimit   : REAL := 1;
tMinSendTime  : TIME := tMinSendTimeDefault;
tMaxSendTime  : TIME := tMaxSendTimeDefault;
bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.

Name	Type	Description
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

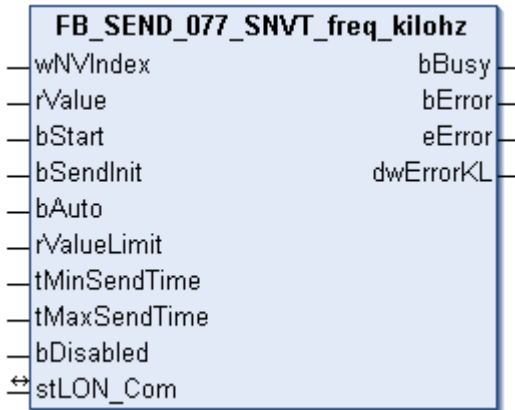
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.73 FB_SEND_077_SNVT_freq_kilohz



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_freq_kilohz.

SNVT number: 077.

Description: Frequency (kilohertz).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [▶ 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.74 FB_SEND_078_SNVF_freq_milhz



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_freq_milhz.

SNVT number: 078.

Description: Frequency (millihertz).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

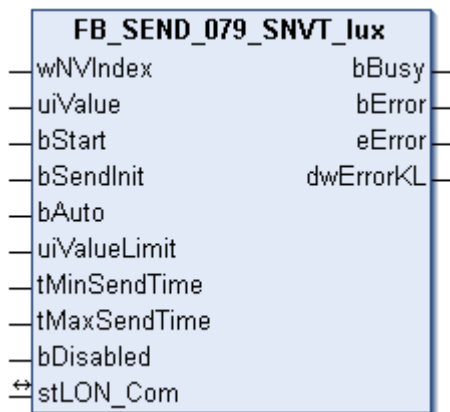
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.75 FB_SEND_079_SNVT_lux



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_lux.

SNVT number: 079.

Description: Illuminance (lux) 1 lux = 1 lumen/m².

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
uiValueLimit	UINT	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

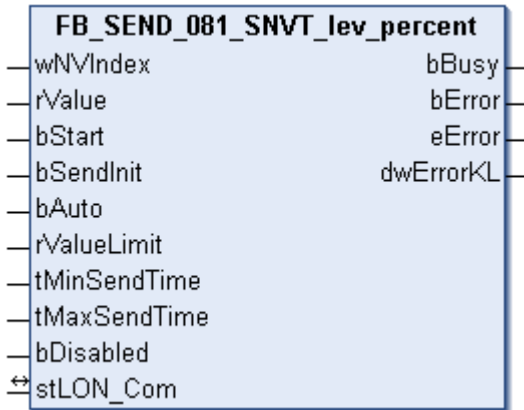
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.76 FB_SEND_081_SNVT_lev_percent



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_lev_percent.

SNVT number: 081.

Description: Percentage value in 0.005% steps with sign.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -163.84 / Max: 163.835.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

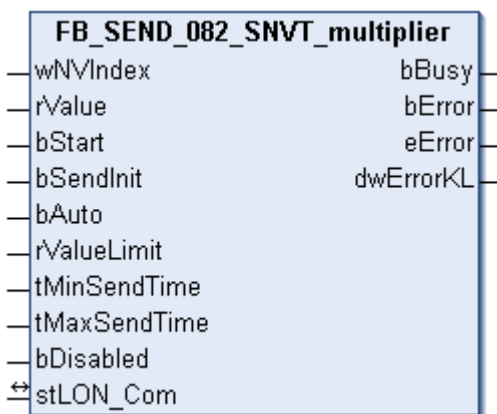
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.77 FB_SEND_082_SNVT_multiplier



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_multiplier.

SNVT number: 082.

Description: Multiplier in 0.0005 steps (16-bit unsigned value).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 32.7675.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy        : BOOL;
    bError       : BOOL;
    eError       : E_LON_ERROR;
    dwErrorKL    : DWORD;
END_VAR
```

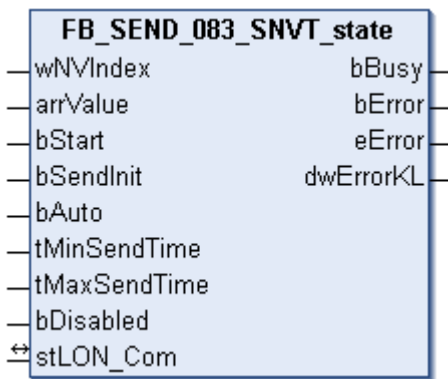
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.78 FB_SEND_083_SNVT_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_state.

SNVT number: 083.

Description: Status information (16 individual bit values). Each status is a Boolean value.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  arrValue      : ARRAY [0..15] OF BOOL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
arrValue	ARRAY OF BOOL	0–15 bit.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.79 FB_SEND_084_SNVT_time_stamp



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_stamp.

SNVT number: 084.

Description: Time stamp (year, month, day, hour, minute, second).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : Timestruct;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	TIMESTRUCT	Structure of the data to be sent. The structure variables wDayOfWeek and wMilliseconds are not valid here. These values are not transferred.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

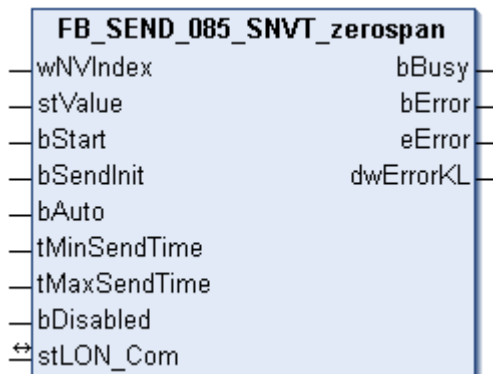
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [▶ 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.80 FB_SEND_085_SNVT_zerospanspan



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_zerospanspan

SNVT number: 085

Description: Zero point and proportionality factor. Linear transformation parameters: multiply with proportionality factor, then add origin offset.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_zerospanspan;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_zerospanspan [► 698]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

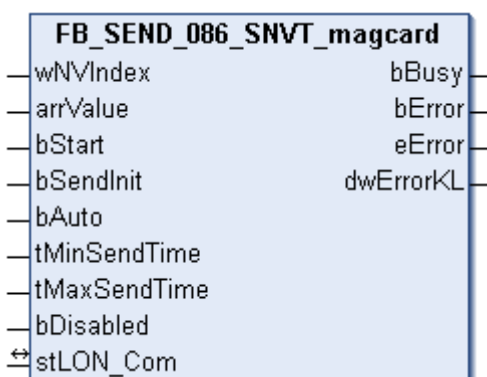
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.81 FB_SEND_086_SNVT_magcard



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_magcard.

SNVT number: 086.

Description: ISO 7811 (40 hexadecimal numbers). Data according to ISO 7811 standard for magnetic card readers.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  arrValue      : ARRAY [0..40] OF BYTE;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
arrValue	ARRAY OF BYTE	1–40 bytes.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

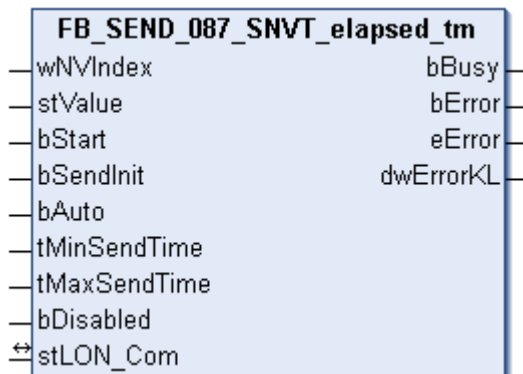
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.82 FB_SEND_087_SNVT_elapsed_tm



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_elapsed_tm.

SNVT number: 087.

Description: Elapsed time (day, hour, minute, second, millisecond).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_elapsed_tm;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_elapsed_tm [► 677]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

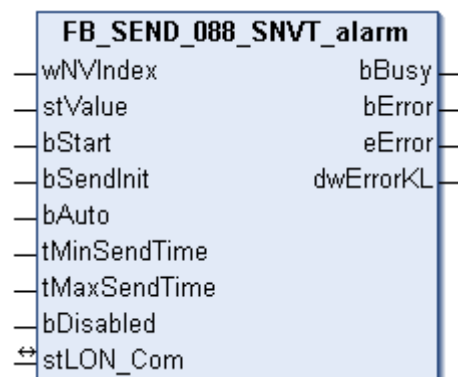
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.83 FB_SEND_088_SNVT_alarm



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_alarm.

SNVT number: 088.

Description: Alarm status.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_alarm;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_alarm [► 669]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

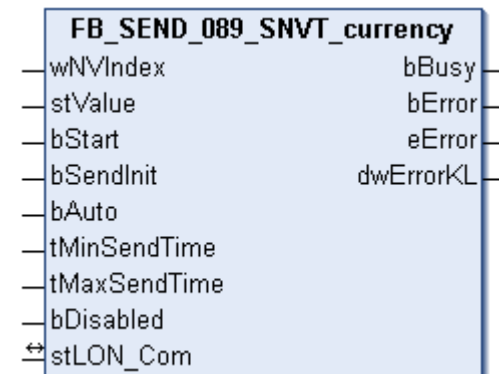
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.84 FB_SEND_089_SNVT_currency



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_currency.

SNVT number: 089.

Description: Currency (unit (euros,...), multiplier, value).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_currency;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime : TIME := tMinSendTimeDefault;
  tMaxSendTime : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_currency [► 675]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

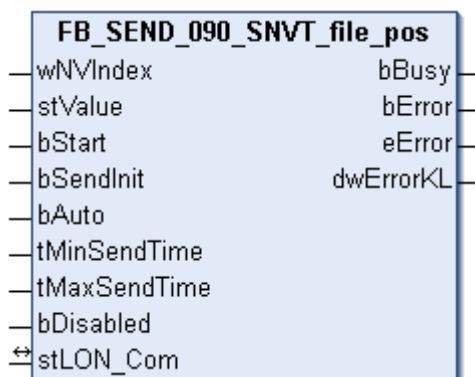
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.85 FB_SEND_090_SNVT_file_pos



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_file_pos.

SNVT number: 090.

Description: File position (pointer, length).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_file_pos;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_file_pos [► 680]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

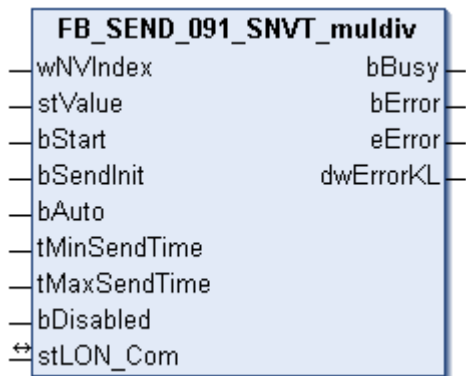
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.86 FB_SEND_091_SNVT_muldiv



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_muldiv.

SNVT number: 091.

Description: Gain factor/attenuation factor (multiplier, divisor).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_muldiv;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_muldiv [► 685]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

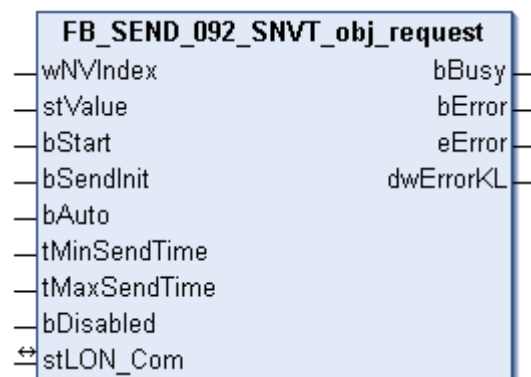
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.87 FB_SEND_092_SNVT_obj_request



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_obj_request.

SNVT number: 092.

Description: Function selection (ID, request).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_obj_request;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_obj_request [► 686]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

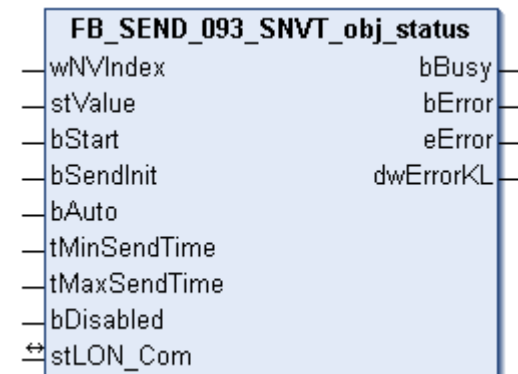
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.88 FB_SEND_093_SNVT_obj_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_obj_status.

SNVT number: 093.

Description: Object status (ID, status (4 byte)).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_obj_status;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_obj_status [► 686]	Structure of the data to be sent. stValue.uiObject_id: Min: 0 / Max: 65535 / Object ID (object index). stValue.blInvalid_id: Invalid-ID flag (boolean). stValue.blInvalid_request: Invalid-request flag (boolean). stValue.bDisabled: Disabled flag (boolean). stValue.bOut_of_limits: Out-of-limits flag (boolean). stValue.bOpen_circuit: Open-circuit flag (boolean). stValue.bOut_of_service: Out-of-service flag (boolean).

Name	Type	Description
		stValue. bMechanical_fault: Mechanical-fault flag (boolean). stValue. bFeedback_failure: Feedback-failure flag (boolean). stValue. bOver_range: Over-range flag (boolean). stValue. bUnder_range: Under-range flag (boolean). stValue. bElectrical_fault: Electrical-fault flag (boolean). stValue. bUnable_to_measure: Unable-to-measure flag (boolean). stValue. bComm_failure: Communications-failure flag (boolean). stValue. bFail_self_test: Failed-self-test flag (boolean). stValue. bSelf_test_in_progress: Self-test-in-progress flag (boolean). stValue. bLocked_out: Locked-out flag (boolean). stValue. bManual_control: Manual-control flag (boolean). stValue. bIn_alarm: Input-alarm flag (boolean). stValue. bIn_override: Input-override flag (boolean). stValue. bReport_mask: Report-mask flag (boolean). stValue. bProgramming_mode: Programming-mode flag (boolean). stValue. bProgramming_fail: Programming-fail flag (boolean). stValue. bAlarm_notify_disabled: Alarm-notify-disabled flag (boolean). stValue. bReset_complete: Reset (boolean). stValue. byReserved2: This field is reserved.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🔧 Outputs

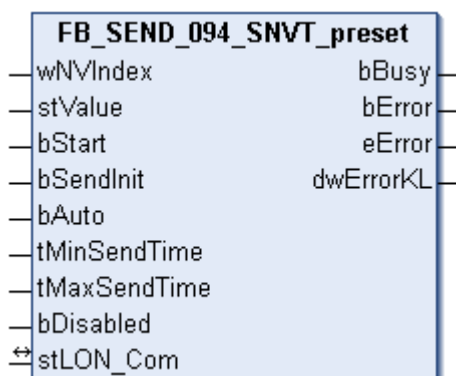
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [▶ 27] () (see dwErrorKL [▶ 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.89 FB_SEND_094_SNVT_preset



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_preset.

SNVT number: 094.

Description: Default (learn mode, value, time).

🔧 Inputs

```
VAR_INPUT
    wNVIndex    : WORD;
    stValue     : ST_LON_SNVT_preset;
    bStart      : BOOL;
    bSendInit   : BOOL := bSendInitDefault;
    bAuto       : BOOL := bAutoDefault;
    tMinSendTime : TIME := tMinSendTimeDefault;
    tMaxSendTime : TIME := tMaxSendTimeDefault;
    bDisabled   : BOOL := FALSE;
END_VAR
```


Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_preset [► 688]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

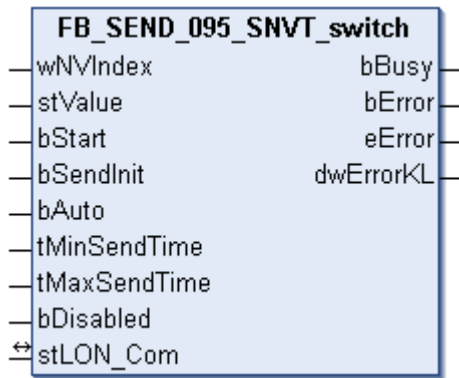
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.90 FB_SEND_095_SNVT_switch



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_switch.

SNVT number: 095.

Description: Switch (value, status).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_switch;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_switch [► 695]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

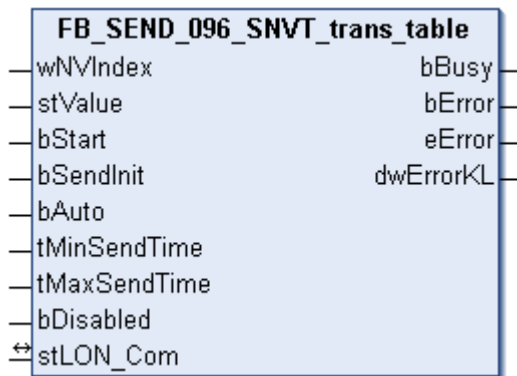
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.91 FB_SEND_096_SNVt_trans_table



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_trans_table.

SNVT number: 096.

Description: Conversion table (number of values, interpolation).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVt_trans_table;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT trans table [► 698]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

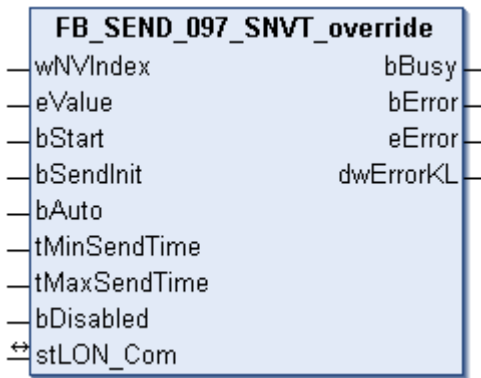
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.92 FB_SEND_097_SNVT_override



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_override.

SNVT number: 097.

Description: Override mode (enumeration: 0= keep current value, 1= set specific value set, 2= set default value).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_override_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_override_t [► 611]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

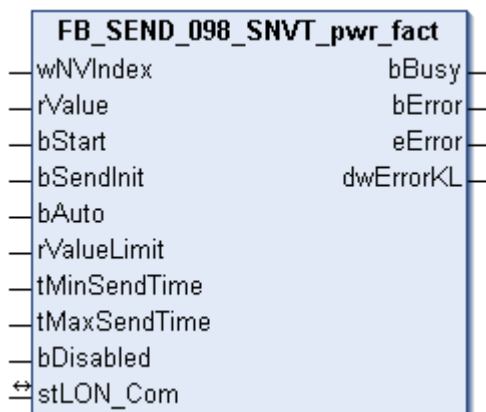
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.93 FB_SEND_098_SNVT_pwr_fact



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pwr_fact.

SNVT number: 098.

Description: Power factor (multiplier).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  rValue      : REAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  rValueLimit : REAL := 0.1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -1 / Max: 1.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
bBusy      : BOOL;
bError     : BOOL;
eError     : E_LON_ERROR;
dwErrorKL  : DWORD;
END_VAR

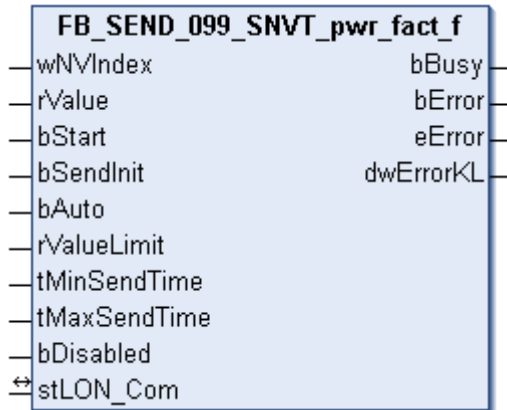
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.94 FB_SEND_099_SNVT_pwr_fact_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pwr_fact_f.

SNVT number: 099.

Description: Power factor (multiplier).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 0.1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -1 / Max: 1.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

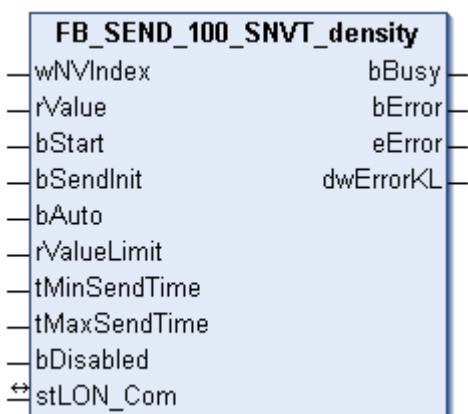
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.95 FB_SEND_100_SNVT_density



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_density.

SNVT number: 100.

Description: Density (kg/m³).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 32767.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

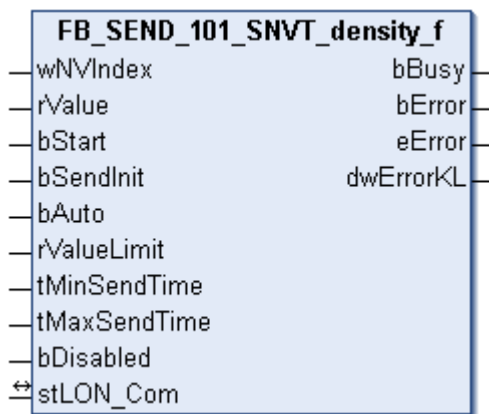
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]</u> () (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.96 FB_SEND_101_SNVT_density_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_density_f.

SNVT number: 101.

Description: Density (kg/m³).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto        : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
  tMaxSendTime : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

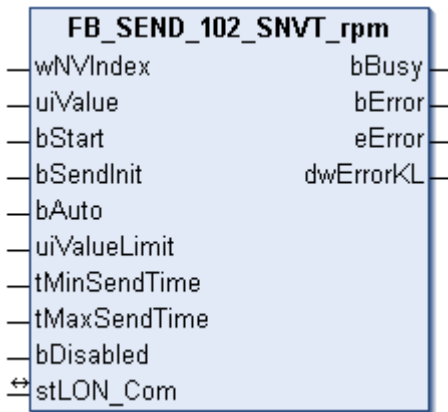
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.97 FB_SEND_102_SNVT_rpm



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_rpm.

SNVT number: 102.

Description: Speed (revolutions/minute (RPM)).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

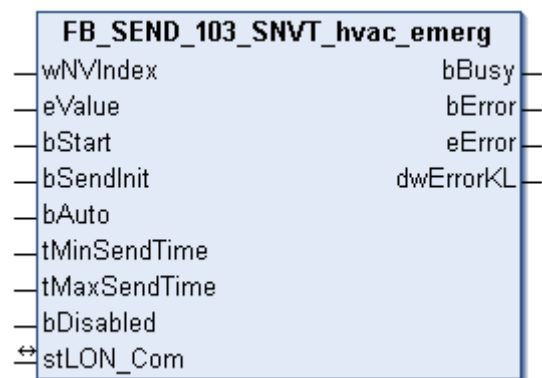
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.98 FB_SEND_103_SNVT_hvac_emerg



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_emerg.

SNVT number: 103.

Description: HVAC emergency mode (operating modes).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    eValue   : E_LON_emerg_t;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_emerg_t [► 596]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

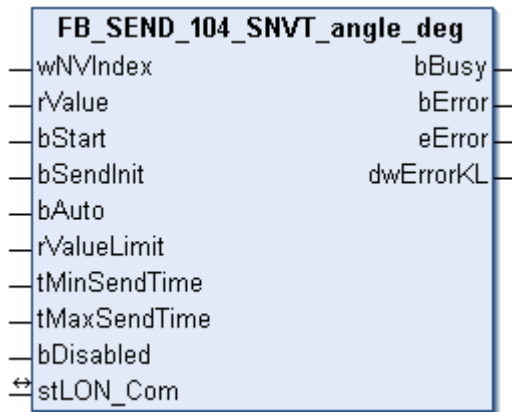
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.99 FB_SEND_104_SNVT_angle_deg



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_angle_deg.

SNVT number: 104.

Description: Angle specification in 1/50 degree steps.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -359.98 / Max: 360.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

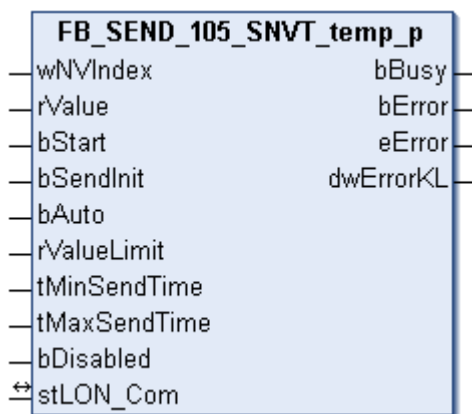
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.100 FB_SEND_105_SNVT_temp_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp_p.

SNVT number: 105.

Description: Temperature (°C).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -273.17 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

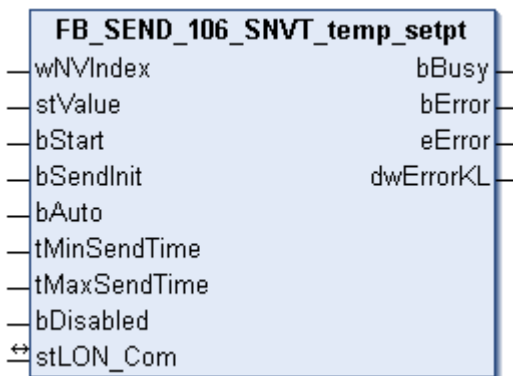
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.101 FB_SEND_106_SNVt_temp_setpt



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp_setpt.

SNVT number: 106.

Description: Temperature (6 temperature values).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVt_temp_setpt;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVt_temp_setpt [► 696]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

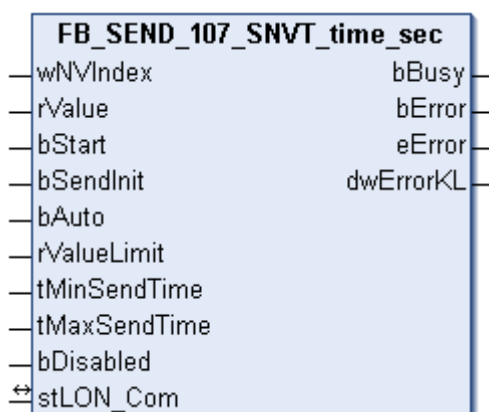
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.102 FB_SEND_107_SNVt_time_sec



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_sec.

SNVT number: 107.

Description: Elapsed time (second).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 6553.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
```

```

eError      : E_LON_ERROR;
dwErrorKL   : DWORD;
END_VAR

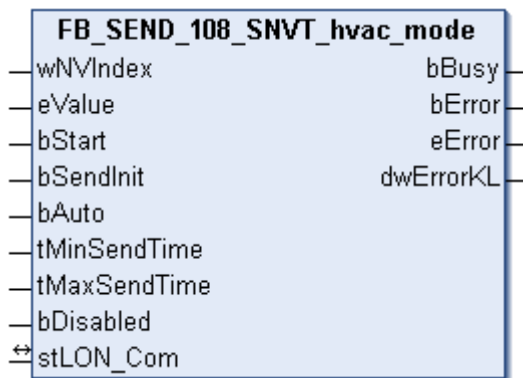
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.103 FB_SEND_108_SNVt_hvac_mode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_mode.

SNVT number: 108.

Description: HVAC operating mode (operating modes).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_hvac_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_hvac_t [► 607]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).

Name	Type	Description
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

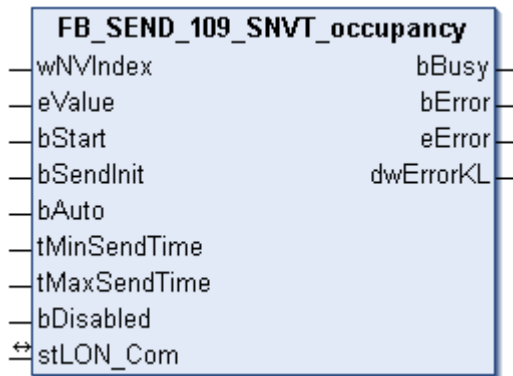
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.104 FB_SEND_109_SNVT_occupancy



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_occupancy.

SNVT number: 109.

Description: Occupancy signal (states).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_occup_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_occup_t [► 611]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

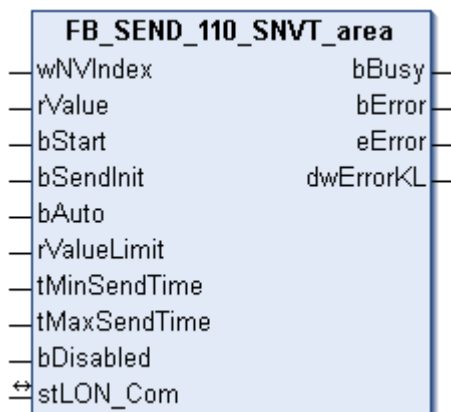
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.105 FB_SEND_110_SNV area



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_area.

SNVT number: 110.

Description: Area (square meter).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  rValue      : REAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  rValueLimit : REAL := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 13,107.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707] . The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

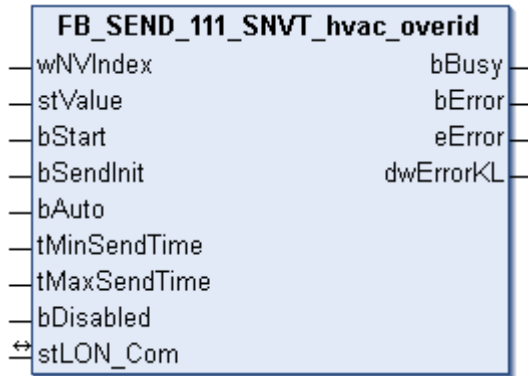
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.106 FB_SEND_111_SNVT_hvac_overid



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_overid.

SNVT number: 111.

Description: HVAC override mode (mode, position/flow rate, min/max flow rate).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_hvac_overid;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_hvac_overid [► 681]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

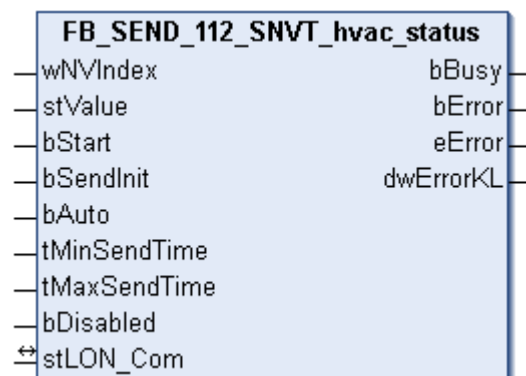
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.107 FB_SEND_112_SNVT_hvac_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_status.

SNVT number: 112.

Description: HVAC status (mode, 5 power ratings, alarm flag).

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    stValue  : ST_LON_SNVT_hvac_status;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT hvac_status [► 683]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

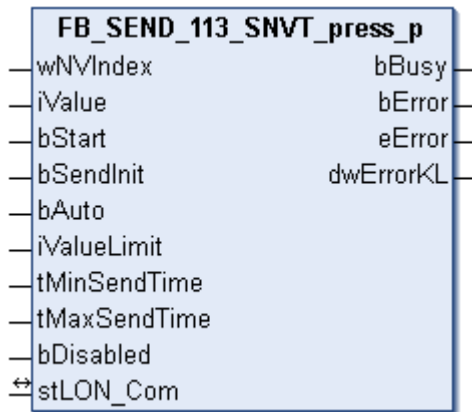
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.108 FB_SEND_113_SNVT_press_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_press_p.

SNVT number: 113.

Description: Pressure (overpressure) (pascal).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    iValue        : INT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    iValueLimit   : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
iValue	INT	Min: -32768 / Max: 32767.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
iValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>iValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.109 FB_SEND_114_SNVT_address



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_address.

SNVT number: 114.

Description: Neuron address (16-bit address value).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 16384 / Max: 64767.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

```

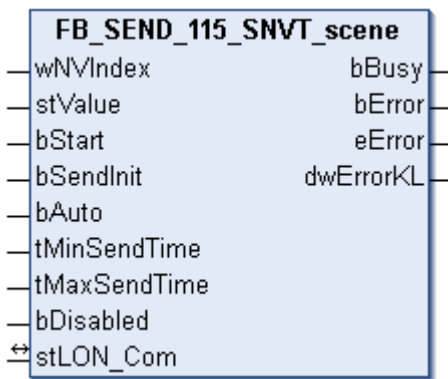
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 271] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.110 FB_SEND_115_SNVT_scene



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_scene.

SNVT number: 115.

Description: Scenes (function (retrieve/learn), scene number).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_scene;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_scene [► 694]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

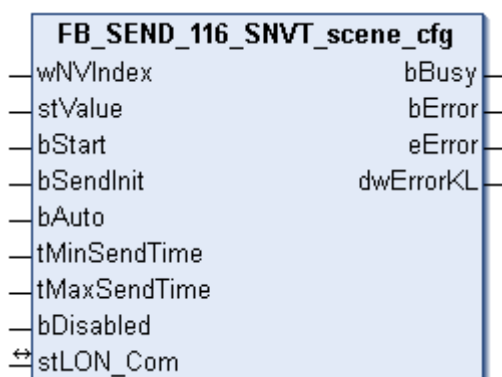
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.111 FB_SEND_116_SNVt_scene_cfg



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_scene_cfg.

SNVT number: 116.

Description: Scene setting (function , scene number, setting, transition number, transition time, delay time, priority).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_scene_cfg;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_scene_cfg [► 694]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

stValue: Structure of the data to be sent (see [ST_LON_SNVT_scene_cfg \[► 694\]](#)).

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

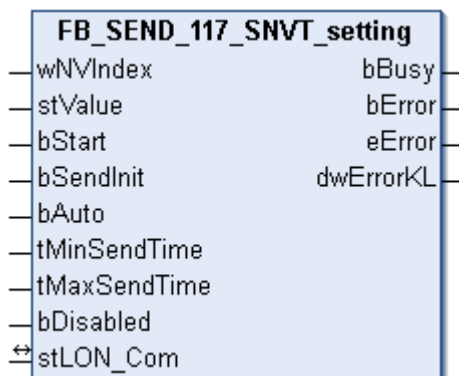
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.

Name	Type	Description
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.112 FB_SEND_117_SNVT_setting



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_setting.

SNVT number: 117.

Description: Settings (function, value, transition number).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_setting;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_setting [► 695]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

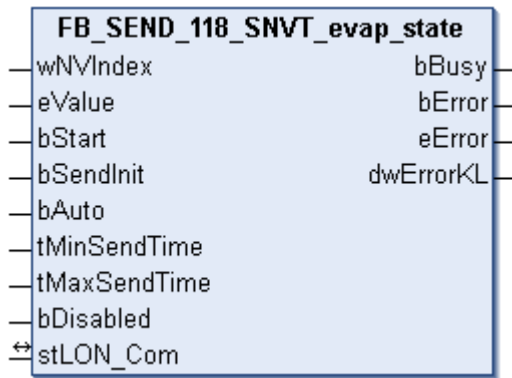
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.113 FB_SEND_118_SNVT_evap_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_evap_state.

SNVT number: 118.

Description: Evaporator status (enumeration).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_evap_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_evap_t [► 599]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

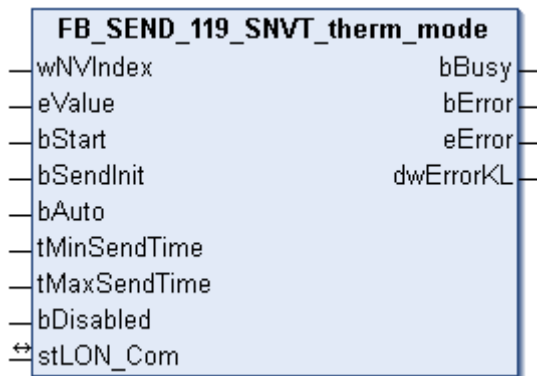
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.114 FB_SEND_119_SNVt_therm_mode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_therm_mode.

SNVT number: 119.

Description: Thermostat mode (enumeration (enable, modulation)).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_therm_mode_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_therm_mode_t [► 628]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

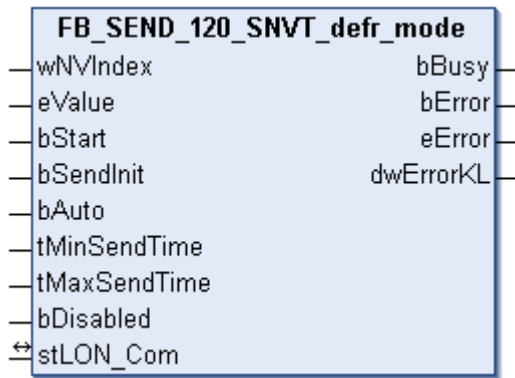
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.115 FB_SEND_120_SNVT_defr_mode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_defr_mode.

SNVT number: 120.

Description: Defrost mode (enumeration).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_defrost_mode_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_defrost_mode_t [► 593]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

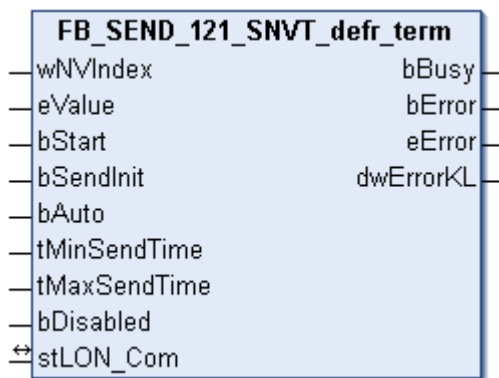
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.116 FB_SEND_121_SNVT_defr_term



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_defr_term.

SNVT number: 121.

Description: Completion of the defrost cycle (enumeration).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_defrost_term_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_defrost_term_t [► 594]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

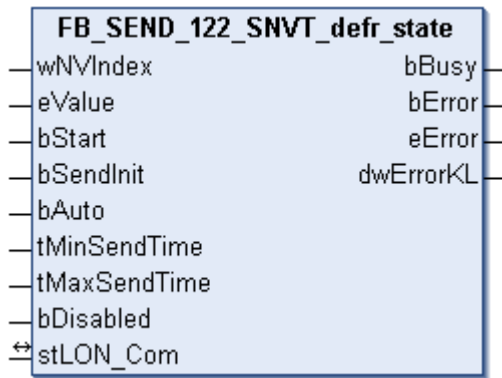
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.117 FB_SEND_122_SNVT_defr_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_defr_state.

SNVT number: 122.

Description: Defrost status (enumeration).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_defrost_state_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_defrost_state_t [► 593]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

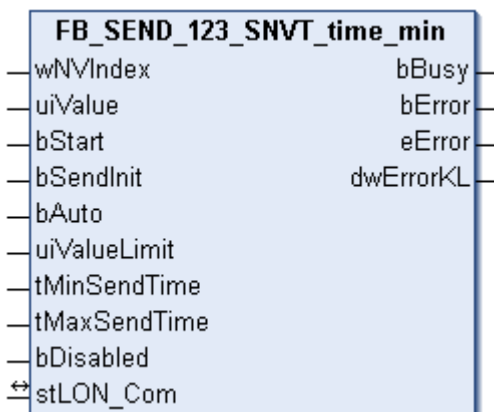
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.118 FB_SEND_123_SNVt_time_min



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_min.

SNVT number: 123.

Description: Elapsed time (minutes).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  uiValue     : UINT;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  uiValueLimit : UINT := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

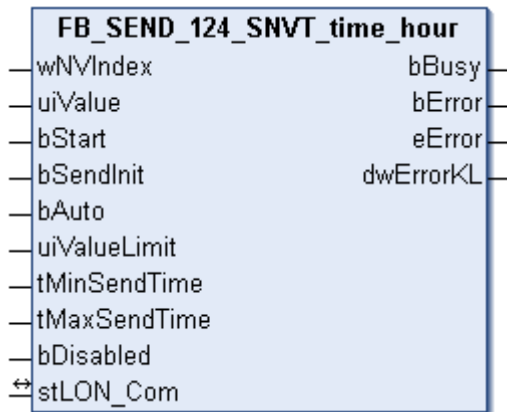
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401()</u> [► 27] (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.119 FB_SEND_124_SNVT_time_hour



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_hour.

SNVT number: 124.

Description: Elapsed time (hour).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

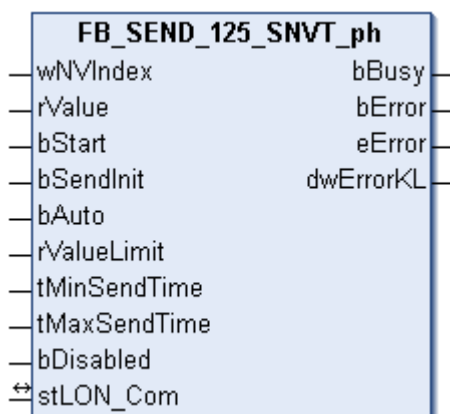
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.120 FB_SEND_125_SNVT_ph



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ph.

SNVT number: 125.

Description: Acidity (pH). Ion concentration ratio.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -32,768 / Max: 32,767.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

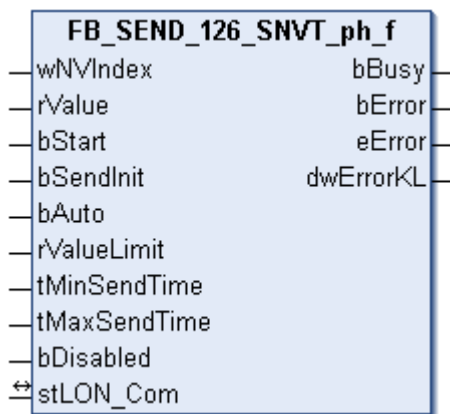
```
VAR_OUTPUT
  bBusy        : BOOL;
  bError       : BOOL;
  eError       : E_LON_ERROR;
  dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]</u> () (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.121 FB_SEND_126_SNVT_ph_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ph_f.

SNVT number: 126.

Description: Acidity (pH). Ion concentration ratio.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -3.40E+38 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

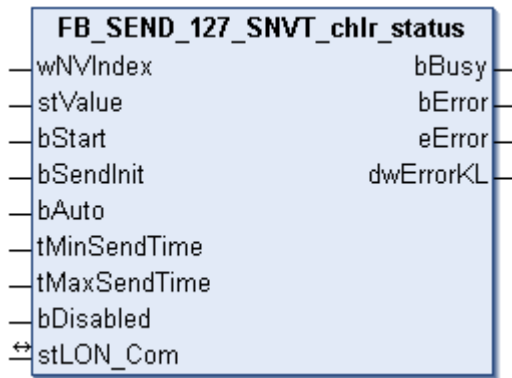
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.122 FB_SEND_127_SNVT_chlr_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_chlr_status.

SNVT number: 127.

Description: Refrigeration unit status (run mode, op mode, status bits).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_chlr_status;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_chlr_status [► 670]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.123 FB_SEND_128_SNVt_tod_event



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_tod_event.

SNVT number: 128.

Description: Presence time (busy status, next busy time).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVt_tod_event;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_tod_event [► 697]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

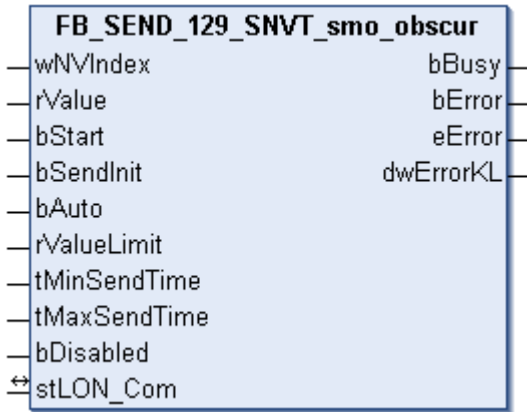
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.124 FB_SEND_129_SNVT_smo_obscur



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_smo_obscur.

SNVT number: 129.

Description: Darkening due to smoke (darkening %).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

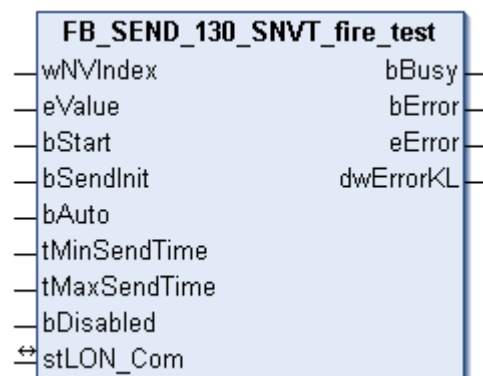
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.125 FB_SEND_130_SNVF_fire_test



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_fire_test.

SNVT number: 130.

Description: Fire alarm system test request (fire alarm test designations).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  eValue   : E_LON_fire_test_t;
```



```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_fire_test_t [► 602]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

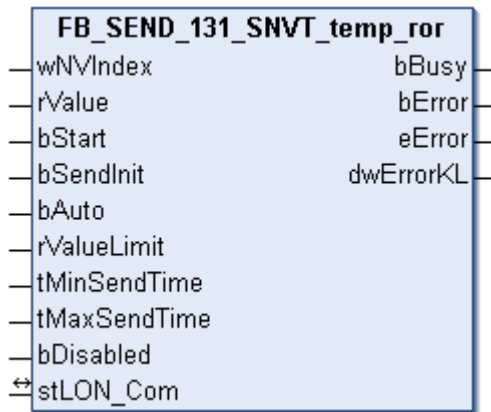
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.126 FB_SEND_131_SNVTemp_ror



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp_ror.

SNVT number: 131.

Description: Value of the temperature change/increase (°C/minute).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -16384 / Max: 16383.5.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

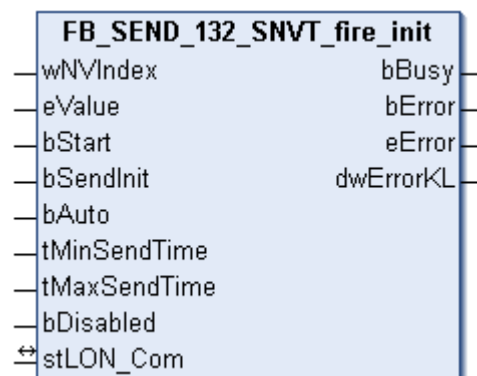
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.127 FB_SEND_132_SNVT_fire_init



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_fire_init.

SNVT number: 132.

Description: Fire detector type (fire detector type names).

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  eValue   : E_LON_fire_initiator_t;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_fire_initiator_t [► 601]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

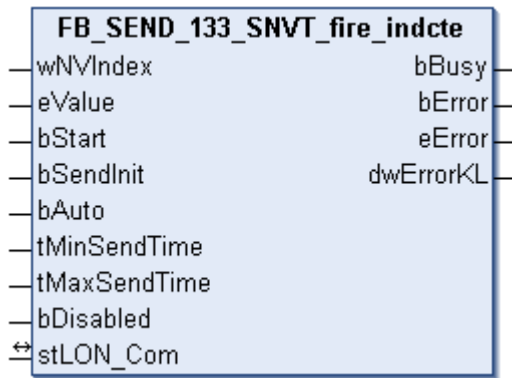
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.128 FB_SEND_133_SNVT_fire_indcte



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_fire_indcte.

SNVT number: 133.

Description: Fire alarm display (fire alarm display names).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_fire_indicator_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_fire_indicator_t [► 601]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.129 FB_SEND_134_SNVTime_zone



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_zone.

SNVT number: 134.

Description: Time zone description (offset, type, summer time start, summer time end).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVTime_zone;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT time zone [► 697]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

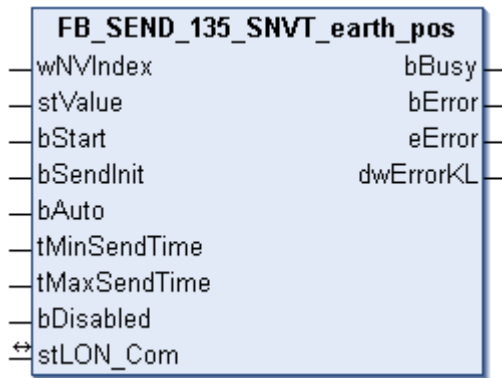
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.130 FB_SEND_135_SNVT_earth_pos



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_earth_pos.

SNVT number: 135.

Description: Position on Earth (width & length orientation, latitude & min, longitude & min, height).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_earth_pos;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_earth_pos [► 677]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

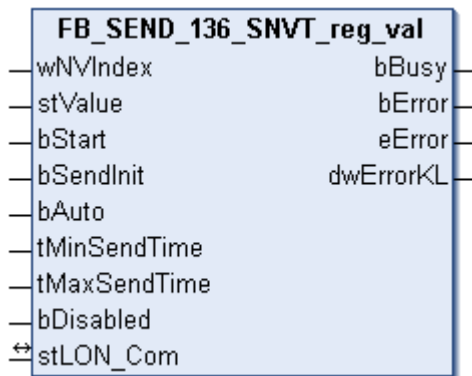
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.131 FB_SEND_136_SNVT_reg_val



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_reg_val.

SNVT number: 136.

Description: Register value (raw value, bit code, number of decimal places).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_reg_val;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_reg_val [► 693]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

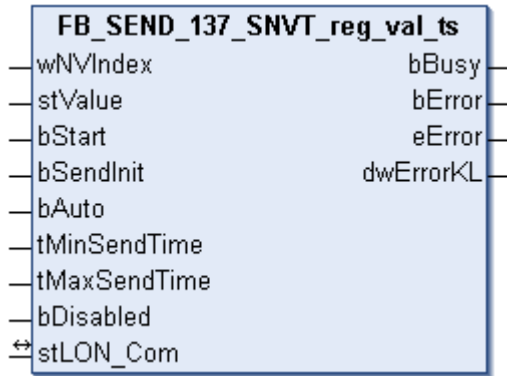
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.132 FB_SEND_137_SNVT_reg_val_ts



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_reg_val_ts.

SNVT number: 137.

Description: Register value (raw value, bit code, number of decimal places, status, state, timestamp).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_reeg_val_ts;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_reg_val_ts [► 693]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

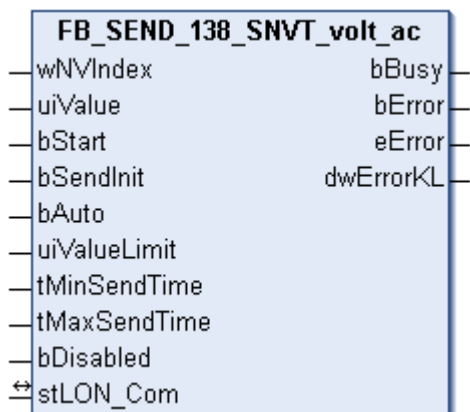
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.133 FB_SEND_138_SNVt_volt_ac



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_volt_ac.

SNVT number: 138.

Description: Alternating voltage (Volt AC).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  uiValue       : UINT;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  uiValueLimit  : UINT := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;

```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

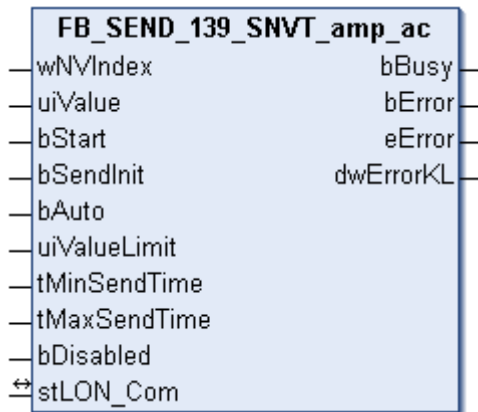
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.134 FB_SEND_139_SNVT_amp_ac



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_amp_ac.

SNVT number: 139.

Description: Alternating current (ampere AC).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65535
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

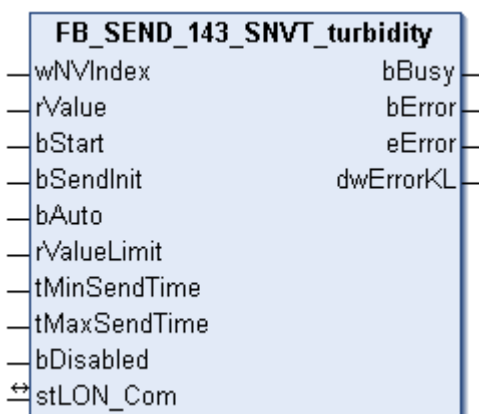
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.135 FB_SEND_143_SNVT_turbidity



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_turbidity.

SNVT number: 143.

Description: Turbidity (turbidity unit).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 65,535.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Outputs

```
VAR_OUTPUT
  bBusy        : BOOL;
  bError       : BOOL;
  eError       : E_LON_ERROR;
  dwErrorKL    : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Inputs/outputs

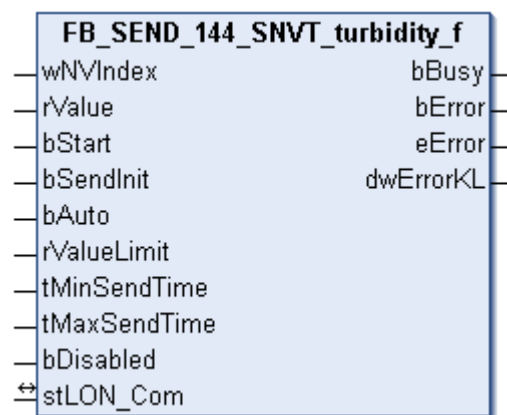
```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.136 FB_SEND_144_SNVT_turbidity_f



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_turbidity_f.

SNVT number: 144.

Description: Turbidity (turbidity unit).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 3.40E+38.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

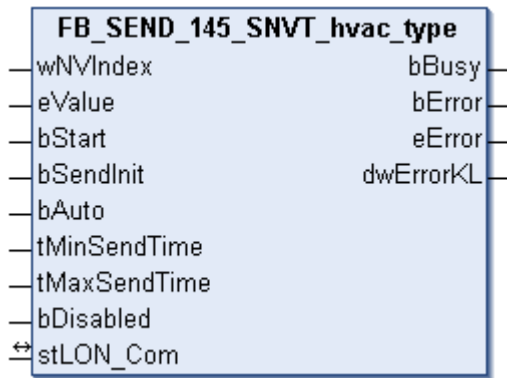
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.137 FB_SEND_145_SNVT_hvac_type



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_type.

SNVT number: 145.

Description: HVAC plant type (HVAC plant type description).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_hvac_hvt_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_hvac_hvt_t [► 604]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

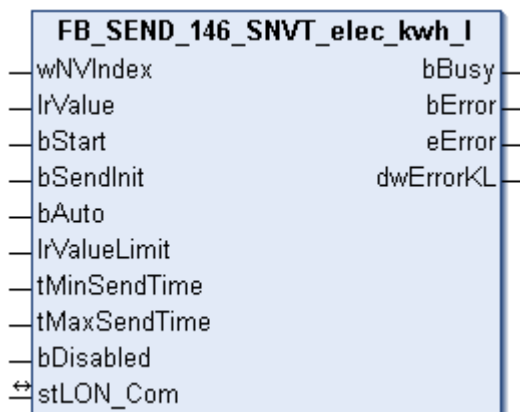
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.138 FB_SEND_146_SNVT_elec_kwh_I



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_elec_kwh_I.

SNVT number: 146.

Description: Electric energy (kW / hour).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  lrValue     : LREAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  lrValueLimit : LREAL := 1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
IrValue	LREAL	Min: -214748364.8 / Max: 214748364.7.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
IrValueLimit	LREAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

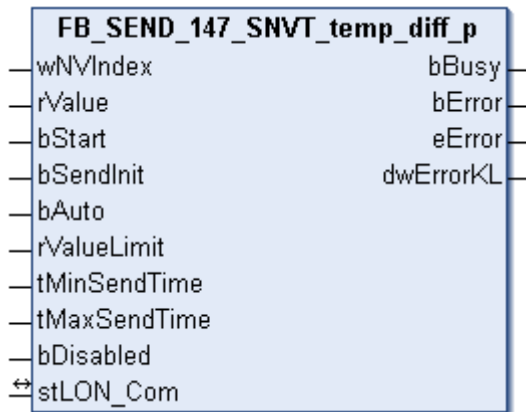
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.139 FB_SEND_147_SNVT_temp_diff_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_temp_diff_p.

SNVT number: 147.

Description: Temperature difference (°C).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -327.68 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

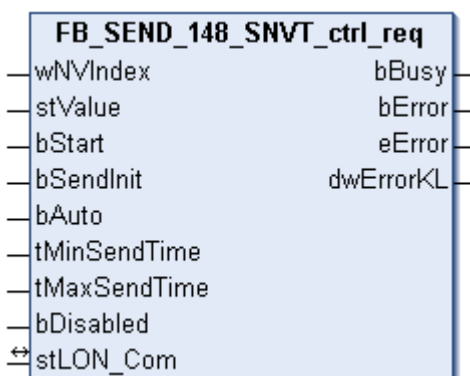
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.140 FB_SEND_148_SNVT_ctrl_req



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ctrl_req.

SNVT number: 148.

Description: Control request (receiver ID, sender ID, sender priority). Request for control permission for another controller.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_ctrl_req;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_ctrl_req [► 674]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

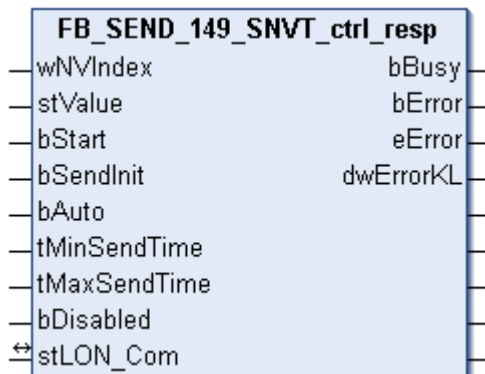
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.141 FB_SEND_149_SNVT_ctrl_resp



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ctrl_resp.

SNVT number: 149.

Description: Control response (status, transmitter, controller ID). Response to a control request.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_ctrl_resp;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_ctrl_resp [► 675]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

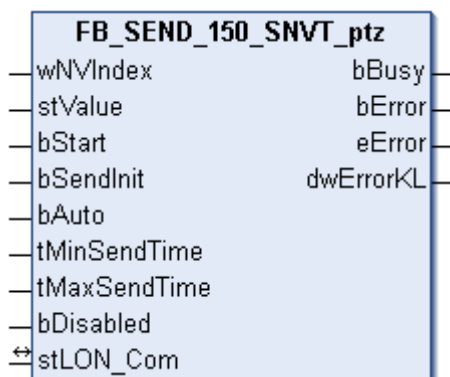
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.142 FB_SEND_150_SNVT_ptz



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ptz.

SNVT number: 150.

Description: Camera PTZ (SNZ) (swivel, swivel speed, tilt, tilt speed, zoom, zoom speed).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVPT_ptz;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVPT_ptz [► 689]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

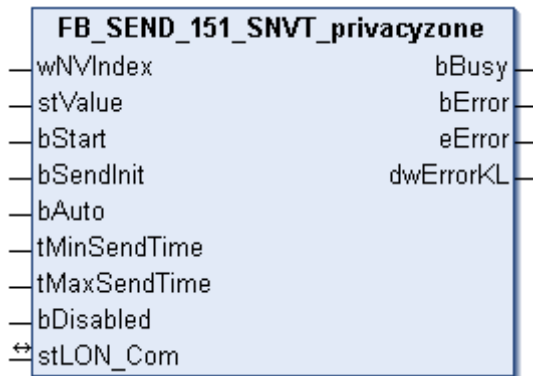
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.143 FB_SEND_151_SNVT_privacyzone



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_privacyzone

SNVT number: 151

Description: Private zone (action area, zone number, camera ID). Certain areas can be excluded from the camera

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_privacyzone;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_privacyzone [► 689]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

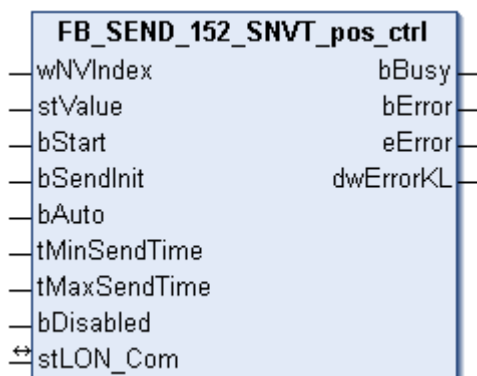
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.144 FB_SEND_152_SNVT_pos_ctrl



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pos_ctrl.

SNVT number: 152.

Description: Position setting for cameras in networks (receiver, controller ID, controller priority, function, action, value).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_pos_ctrl;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_pos_ctrl [► 688]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

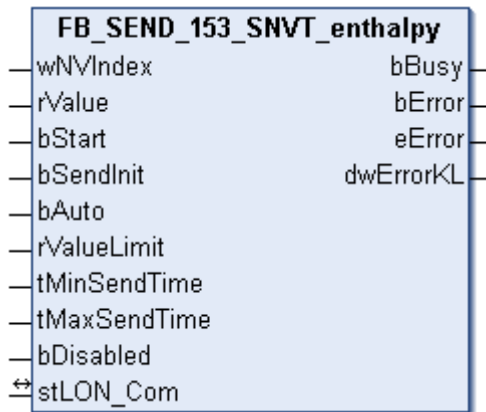
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.145 FB_SEND_153_SNVT_enthalpy



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_enthalpy.

SNVT number: 153.

Description: Enthalpy (kilojoules/kg).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -327.68 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

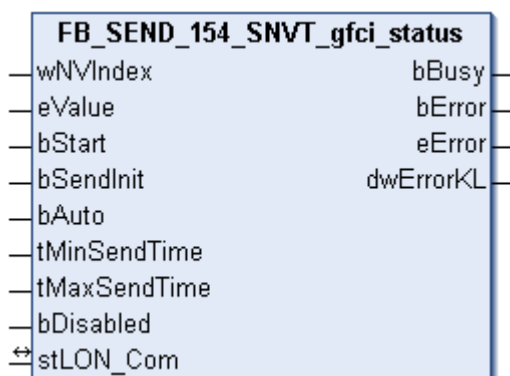
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.146 FB_SEND_154_SNVT_gfci_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_gfci_status.

SNVT number: 154.

Description: Residual current circuit breaker status (residual current circuit breaker status text).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_gfci_status_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_gfci_status_t [► 603]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

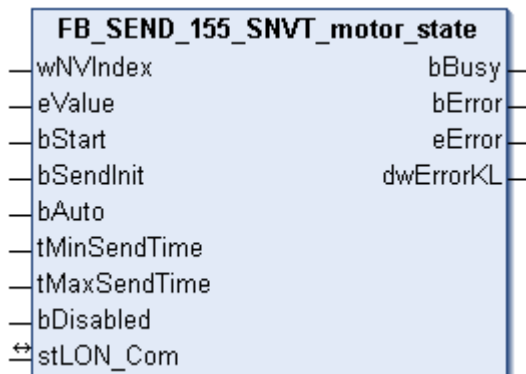
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.147 FB_SEND_155_SNVT_motor_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_motor_state.

SNVT number: 155.

Description: Motor status (motor status designation).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_motor_state_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_motor_state_t [► 609]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

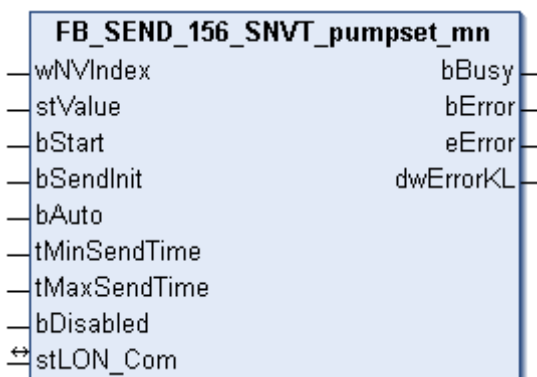
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.148 FB_SEND_156_SNVT_pumpset_mn



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pumpset_mn.

SNVT number: 156.

Description: Pump group (main pump, auxiliary pump, priority, ready, emergency off, main pump activated, auxiliary pump activated, maintenance request). Synchronized vacuum pumps.

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_pumpset_mn;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	<u>ST_LON_SNVT_pumpset_mn</u> [► 690]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL64010</u> [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

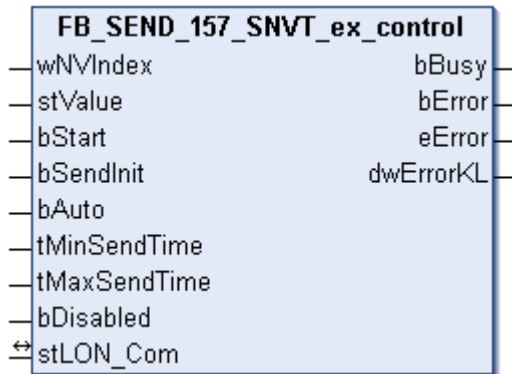
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.149 FB_SEND_157_SNVT_ex_control



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ex_control.

SNVT number: 157.

Description: Exclusive control (status, address). A device has exclusive control over another device.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_ex_control;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_ex_control [► 680]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

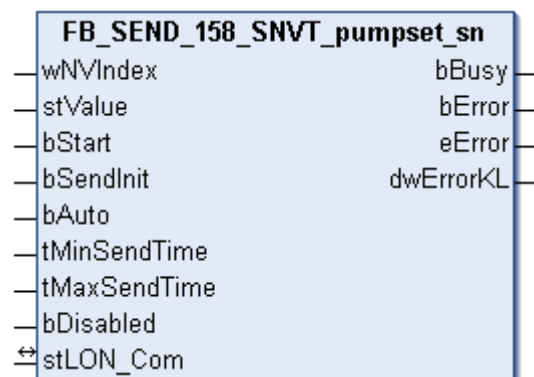
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.150 FB_SEND_158_SNVT_pumpset_sn



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pumpset_sn.

SNVT number: 158.

Description: Pump group sensor (thinner, output, pressure, vacuum, ...).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_pumpset_sn;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_pumpset_sn [► 691]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

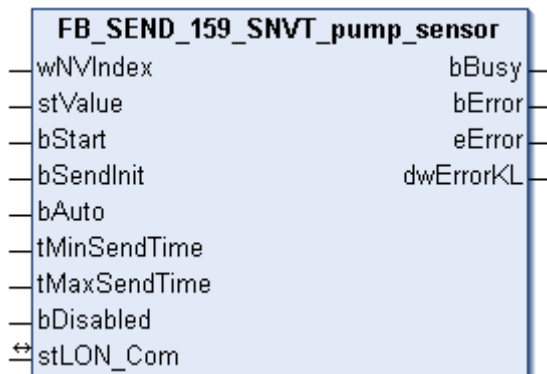
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.

Name	Type	Description
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.151 FB_SEND_159_SNVT_pump_sensor



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_pump_sensor.

SNVT number: 159.

Description: Pump sensor (speed, temperature, status).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_pump_sensor;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_pump_sens or [► 689]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.

Name	Type	Description
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

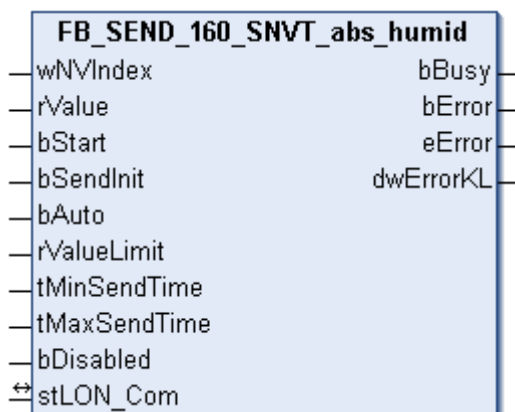
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.152 FB_SEND_160_SNVT_abs_humid



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_abs_humid.

SNVT number: 160.

Description: Absolute humidity (gram/kg).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 655.35.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707] . The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

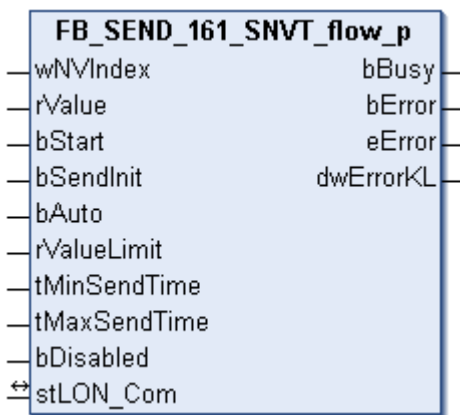
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.

Name	Type	Description
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.153 FB_SEND_161_SNVT_flow_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_flow_p.

SNVT number: 161.

Description: Volume flow (cubic meters / hour).

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  rValue        : REAL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  rValueLimit   : REAL := 1;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 655.35.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.

Name	Type	Description
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

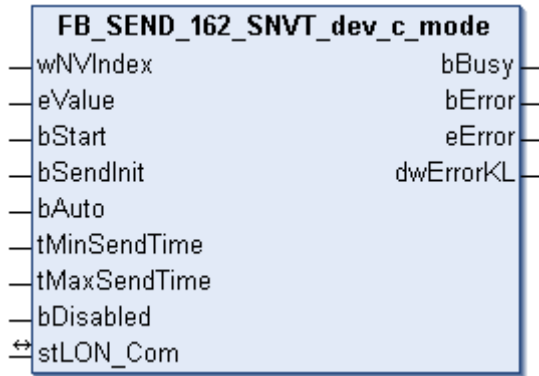
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.154 FB_SEND_162_SNVT_dev_c_mode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_dev_c_mode.

SNVT number: 162.

Description: Device operating mode (device operating mode states).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_device_c_mode_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	<u>E_LON_device_c_mode_t</u> [► 595]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

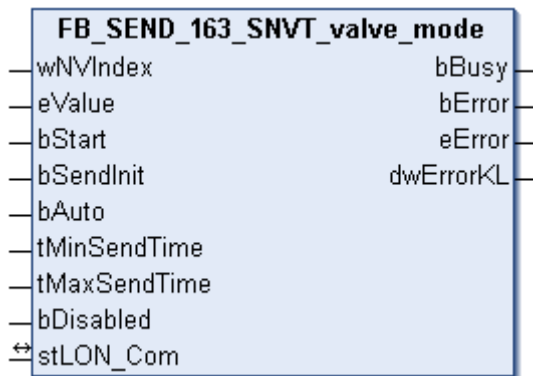
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.155 FB_SEND_163_SNVT_valve_mode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_valve_mode.

SNVT number: 163.

Description: Valve state.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  eValue        : E_LON_valve_mode_t;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	E_LON_valve_mode_t [► 629]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

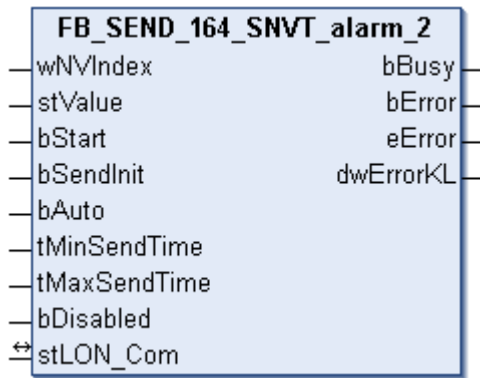
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.156 FB_SEND_164_SNVT_alarm_2



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_alarm_2.

SNVT number: 164.

Description: Alarm status 2. Signals the alarm status of a function block or device. Replaces SNVT_alarm.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_alarm_2;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_alarm_2 [► 670]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```


Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

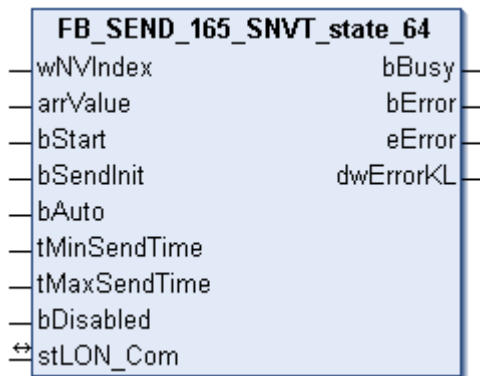
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.157 FB_SEND_165_SNVT_state_64



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_state_64.

SNVT number: 165.

Description: Status information (64 individual bit values). Each status is a Boolean value.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  arrValue      : ARRAY [0..63] OF BOOL;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
arrValue	ARRAY OF BOOL	0–63 bit.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

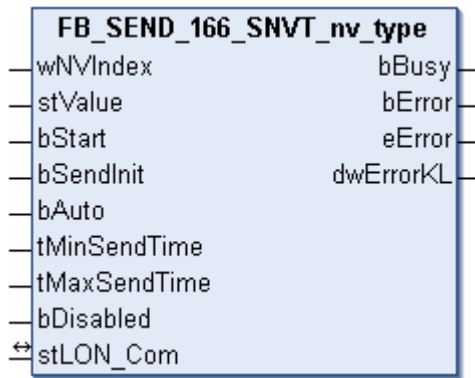
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401()</u> [► 27] (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.158 FB_SEND_166_SNVT_nv_type



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_nv_type.

SNVT number: 166.

Description: Network variable type. Type description for network variables.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_nv_type;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_nv_type [► 685]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

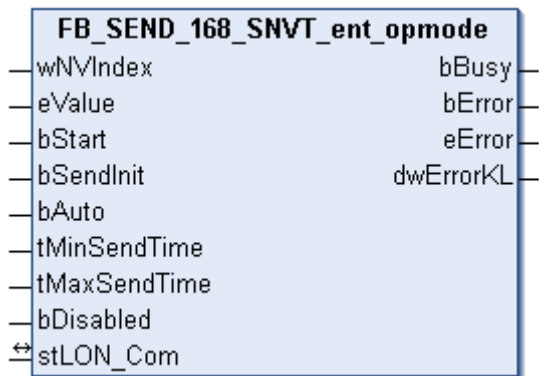
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.159 FB_SEND_168_SNVT_ent_opmode



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ent_opmode.

SNVT number: 168.

Description: Operating mode of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  eValue      : E_LON_ent_opmode_cmd_t;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	<u>E_LON_ent_opmode_cmd</u> <u>t [► 598]</u>	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending [► 707]</u> . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending [► 707]</u> . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> <u>[► 665]</u>	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

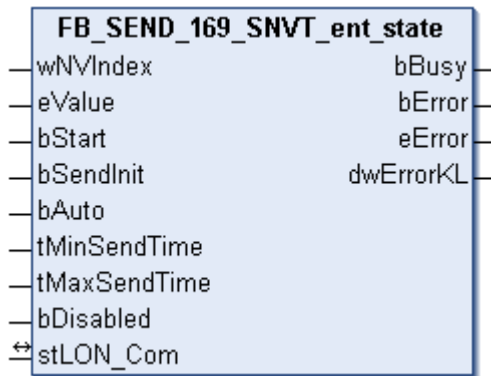
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR [► 557]</u>	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401 [► 27]()</u> (see <u>dwErrorKL [► 707]</u>). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.160 FB_SEND_169_SNVT_ent_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ent_state.

SNVT number: 169.

Description: State of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_ent_cmd_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	E_LON_ent_cmd_t [► 597]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

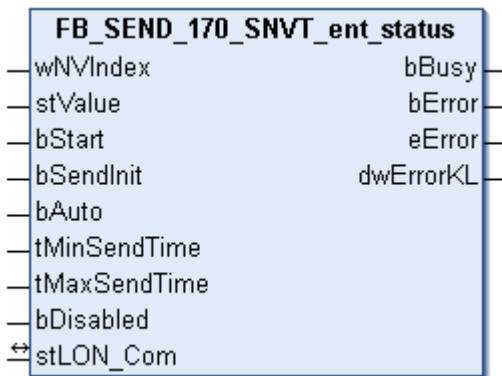
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.161 FB_SEND_170_SNVT_ent_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_ent_status.

SNVT number: 170.

Description: Status of access objects (doors, locks or objects permitting or prohibiting access).

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_ent_status;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_ent_status [► 678]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

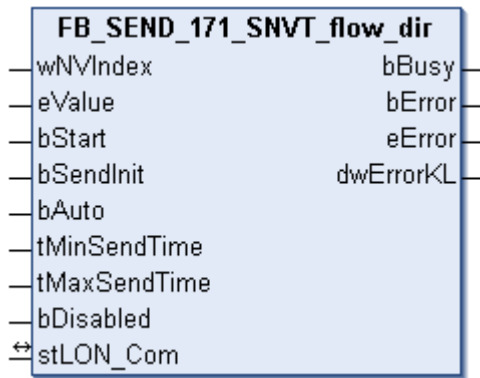
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.162 FB_SEND_171_SNVT_flow_dir



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_flow_dir.

SNVT number: 171.

Description: Flow direction. Direction of the flow to be permitted or direction of the current flow.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    eValue        : E_LON_flow_direction_t;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
eValue	<u>E_LON_flow_direction_t</u> [► 603]	Enum to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

🔌 Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

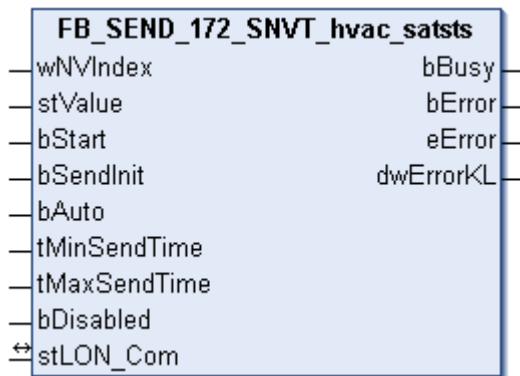
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.163 FB_SEND_172_SNVT_hvac_satsts



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_hvac_satsts.

SNVT number: 172.

Description: HVAC saturation status.

0 in a field means that plant (device) linked to the field is not saturated or does not reach the limit stop before the required set value is reached.

1 in a field means that plant (device) linked to the field is saturated or reaches the limit stop before the required set value is not reached.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_hvac_satsts;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	<u>ST_LON_SNVT_hvac_satsts</u> [► 682]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

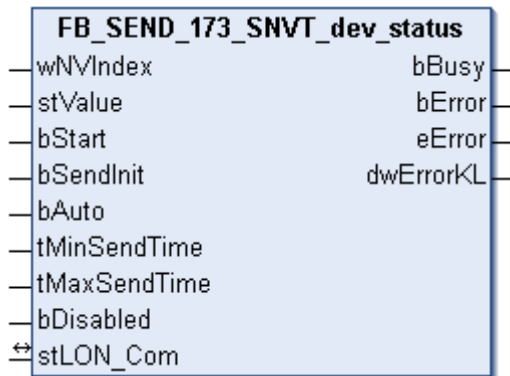
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27] () (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.164 FB_SEND_173_SNVT_dev_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_dev_status.

SNVT number: 173.

Description: Device status.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_dev_status;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
  tMaxSendTime  : TIME := tMaxSendTimeDefault;
  bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_dev_status [► 676]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

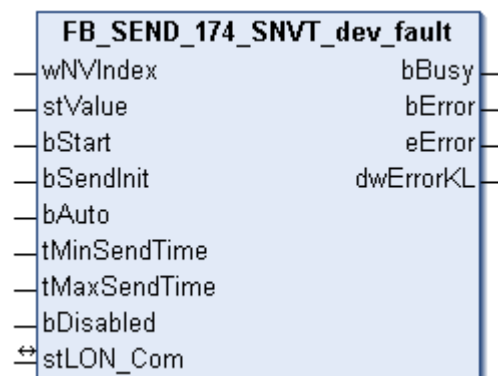
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.165 FB_SEND_174_SNVT_dev_fault



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_dev_fault.

SNVT number: 174.

Description: Error state. Error information for a device.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  stValue  : ST_LON_SNVT_dev_fault;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_dev_fault [► 676]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

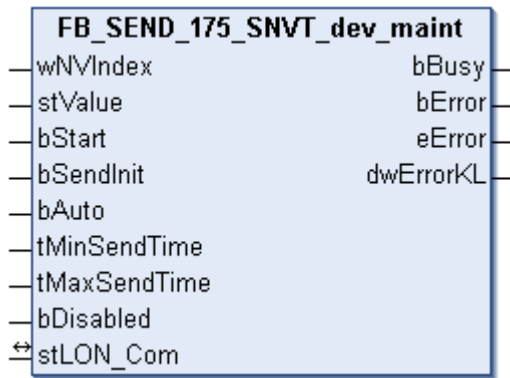
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.166 FB_SEND_175_SNVT_dev_maint



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_dev_maint.

SNVT number: 175.

Description: Device maintenance station.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_dev_maint;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_dev_maint [► 676]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

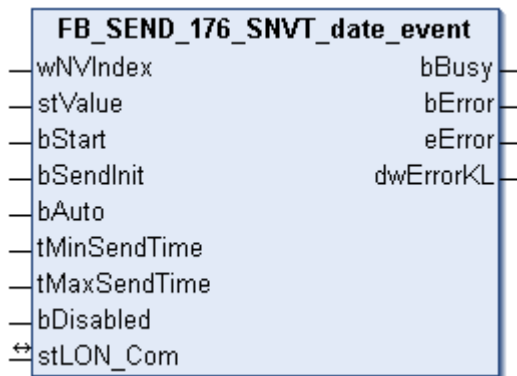
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.167 FB_SEND_176_SNVT_date_event



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_date_event.

SNVT number: 176.

Description: Event status.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_date_event;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```



```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_date_event [► 675]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

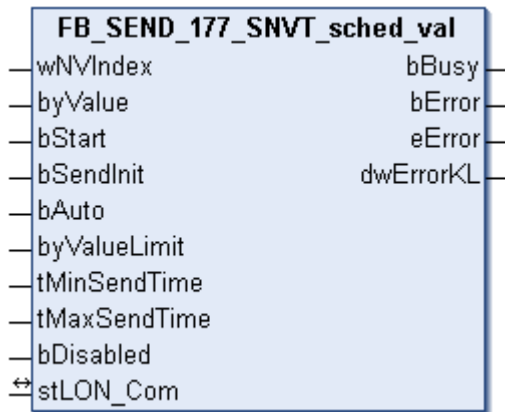
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.168 FB_SEND_177_SNVT_sched_val



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_sched_val.

SNVT number: 177.

Description: Calendar value. Index of a calendar value that selects an entry in an SCPT value definition field array or is a direct value output.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    byValue       : BYTE;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    byValueLimit  : BYTE := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
byValue	BYTE	Min: 0 / Max: 255.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
byValueLimit	BYTE	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (byValueLimit) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

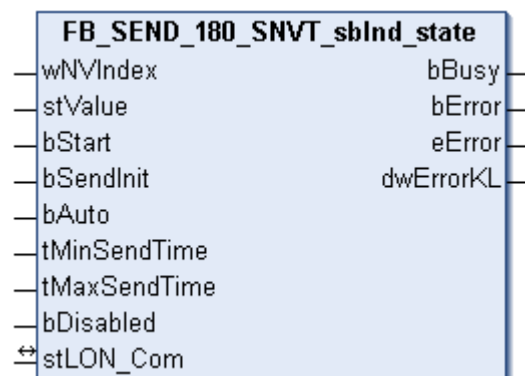
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.169 FB_SEND_180_SNVT_sbInd_state



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_sbInd_state.

SNVT number: 180.

Description: Blind status.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  stValue  : ST_LON_SNVT_sbInd_state;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_sblnd_state [► 694]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL   : DWORD;
END_VAR

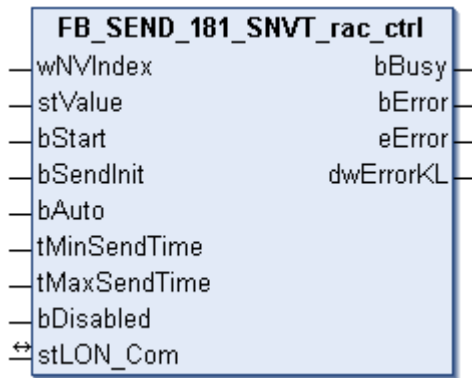
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.170 FB_SEND_181_SNVT_rac_ctrl



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_rac_ctrl.

SNVT number: 181.

Description: Sound function control. Activates the sound function for a particular source.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_rac_ctrl;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_rac_ctrl [► 692]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

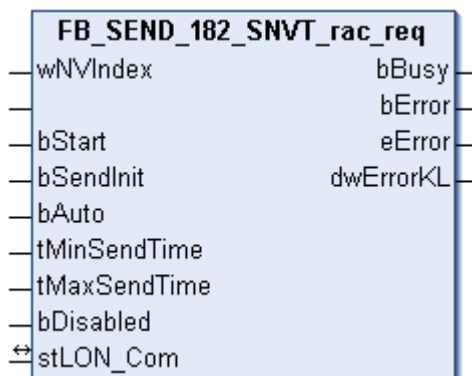
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.171 FB_SEND_182_SNVT_rac_req



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_rac_req.

SNVT number: 182.

Description: Sound function request. Requests the sound function for a particular source.

Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_rac_req;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_rac_req [► 692]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

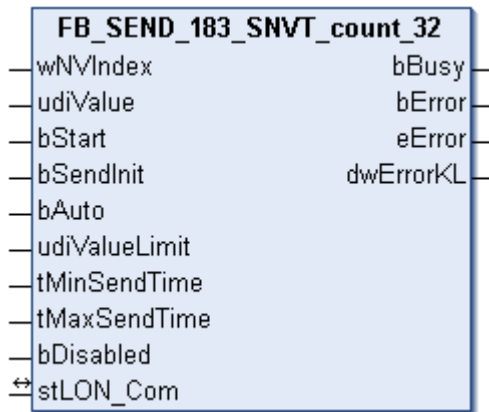
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <i>dwErrorKL</i> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.172 FB_SEND_183_SNVT_count_32



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_count_32.

SNVT number: 183.

Description: Absolute counter. 32 bit counter.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    udiValue      : UDINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    udiValueLimit : UDINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
udiValue	UDINT	Min: 0 / Max: 4294967294.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
udiValueLimit	UDINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>udiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

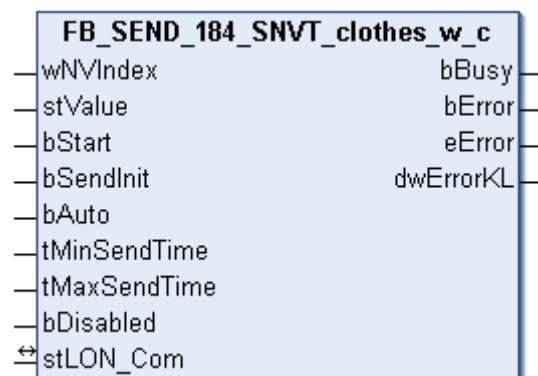
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.173 FB_SEND_184_SNVT_clothes_w_c



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_clothes_w_c

SNVT number: 184

Description: Washing machine / commands. For programming and starting a washing machine

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  stValue  : ST_LON_SNVT_clothes_w_c;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_clothes_w c [▶ 672]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link <u>FB_LON_KL6401()</u> [▶ 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

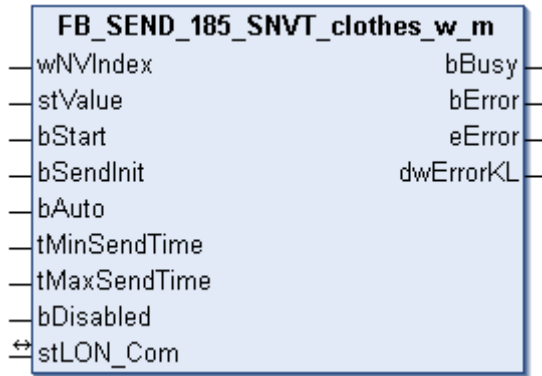
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [▶ 27]() (see <u>dwErrorKL</u> [▶ 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.174 FB_SEND_185_SNVT_clothes_w_m



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_clothes_w_m

SNVT number: 185

Description: Washing machine /management status Current status of door / lid and drain.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_clothes_w_m;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
  
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_clothes_w_m [► 673]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
  
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

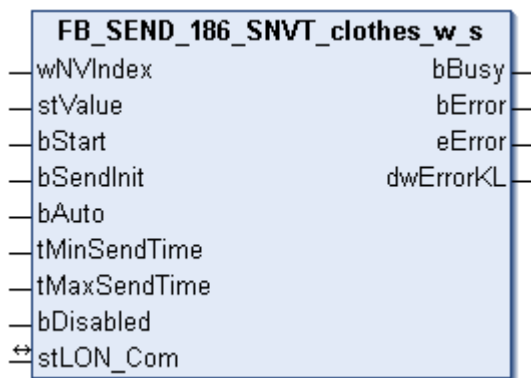
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.175 FB_SEND_186_SNVT_clothes_w_s



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_clothes_w_s.

SNVT number: 186.

Description: Washing machine / status. Current state of a washing machine, including command and alarm information.

Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_clothes_w_s;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;

```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_clothes_w s [▶ 673]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [▶ 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [▶ 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [▶ 27]() (see <u>dwErrorKL</u> [▶ 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

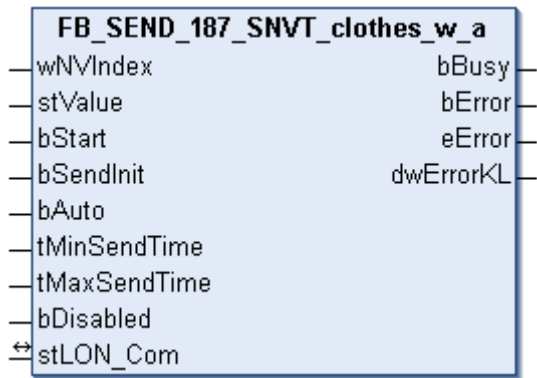
```

Name	Type	Description
stLON_Com	ST_LON_Communication [▶ 665]	This structure is used to link FB_LON_KL6401() [▶ 27] with the transmit/receive blocks.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.176 FB_SEND_187_SNVT_clothes_w_a



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_clothes_w_a.

SNVT number: 187.

Description: Washing machine / alarm messages.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_clothes_w_a;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_clothes_w_a [► 671]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

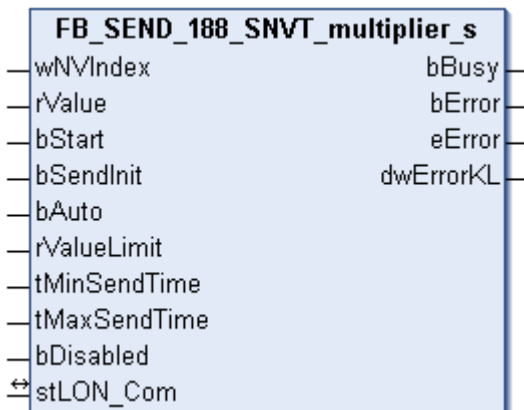
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.177 FB_SEND_188_SNVT_multiplier_s



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_multiplier_s.

SNVT number: 188.

Description: Multiplier.

Inputs

```
VAR_INPUT
  wNVIndex    : WORD;
  rValue      : REAL;
  bStart      : BOOL;
  bSendInit   : BOOL := bSendInitDefault;
  bAuto       : BOOL := bAutoDefault;
  rValueLimit : REAL := 0.1;
  tMinSendTime : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: 0 / Max: 2.54.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

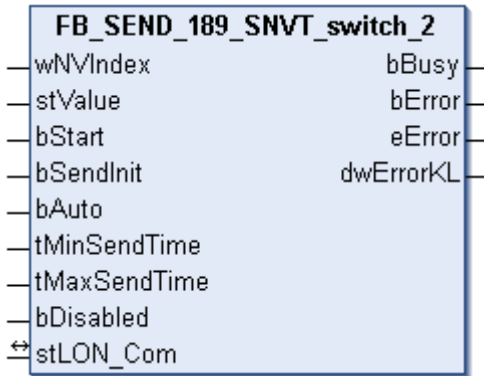
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.178 FB_SEND_189_SNVT_switch_2



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_switch_2

SNVT number: 189

Description: Switch for setting scenes and settings. Extended version of the SNVT_switch for setting of scenes and settings similar to the SNVT_scene and SNVT_setting.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_switch_2;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_switch_2 [► 696]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <code>FB_LON_KL6401()</code> [► 27] with the transmit/receive blocks.

Outputs

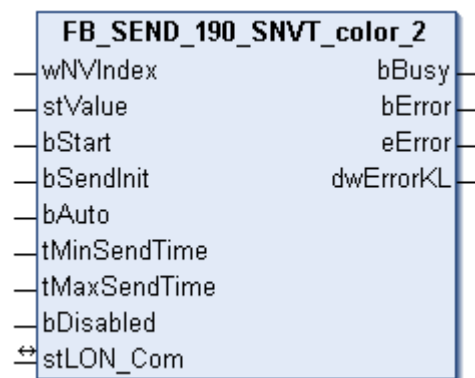
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <code>FB_LON_KL6401</code> [► 27]() (see <code>dwErrorKL</code> [► 707]). In this case the variable <i>eError</i> has the value <code>eKL6401_Error</code> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.179 FB_SEND_190_SNVT_color_2



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_color_2.

SNVT number: 190.

Description: Color.

Inputs

```
VAR_INPUT
  wNVIndex : WORD;
  stValue  : ST_LON_SNVT_color_2;
```

```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_color_2 [► 674]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

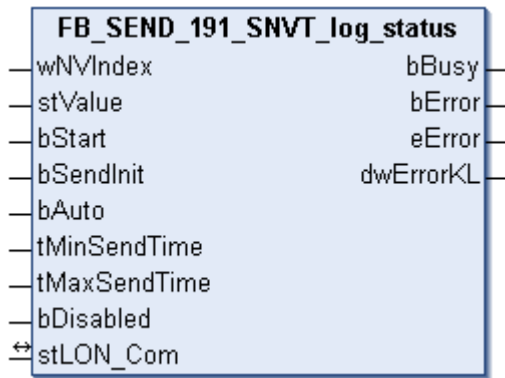
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.180 FB_SEND_191_SNVT_log_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_log_status.

SNVT number: 191.

Description: Log status (hundredth of a second). Represents the current status of a data logging. Update based on the cpLogNotificationThreshold value. Displays only the status. Alarms are output via the node object nvoAlarm2. Is required if the node object contains no nvoLogStat output.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_log_status;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_log_status [► 684]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🔌 Outputs

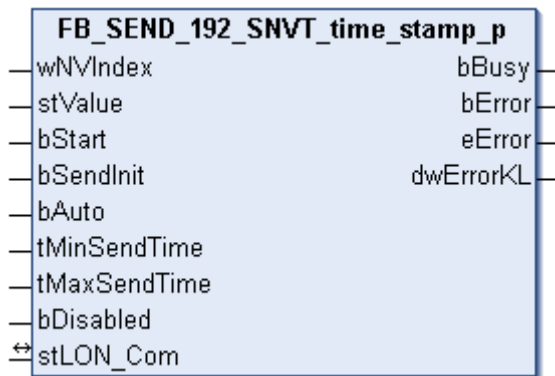
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.181 FB_SEND_192_SNVt_time_stamp_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_stamp_p.

SNVT number: 192.

Description: Precise timestamp (seconds). Timestamp with a resolution of a hundredth second.

🔌 Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : TIMESTRUCT;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	TIMESTRUCT	Structure of the data to be sent. The Element <i>wDayOfWeek</i> is not valid here. This value is not transferred.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	<u>Automatic sending</u> [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

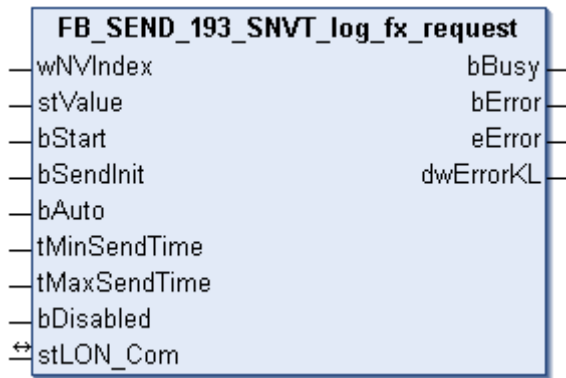
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.182 FB_SEND_193_SNVT_log_fx_request



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_log_fx_request

SNVT number: 193

Description: Log file transfer request. Requests a data log via FTP transfer. Must follow a standard ftp request to obtain a data log file. Required on devices that use the data logger function profile, which enables data log transfer via FTP.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_log_fx_request;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_log_fx_request [▶ 683]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [▶ 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [▶ 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [▶ 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

🔧 Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

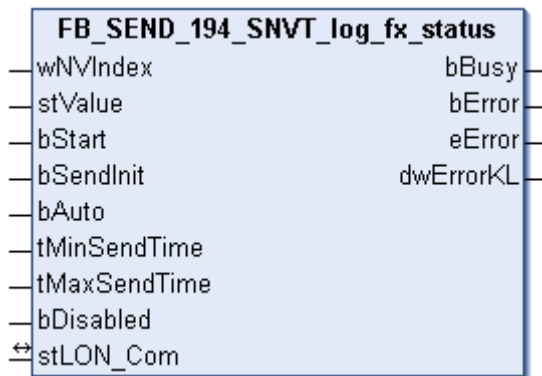
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.183 FB_SEND_194_SNVT_log_fx_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_log_fx_status.

SNVT number: 194.

Description: Log file transfer status. Indicates the status of a data log via FTP transfer. Required on devices that use the data logger function profile, which enables data log transfer via FTP.

🔧 Inputs

```

VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNVT_log_fx_status;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;

```



```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_log_fx_status [► 684]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

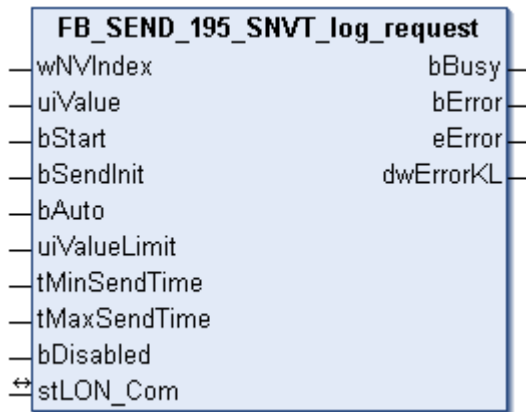
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.184 FB_SEND_195_SNVT_log_request



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_log_request.

SNVT number: 195.

Description: Log status request. Requests the current status of a data log. The status is output via the SNVT_log_status output.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 1 / Max: 65535.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
uiValueLimit	UINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

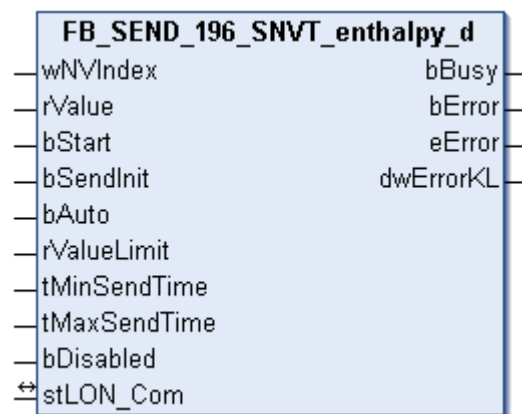
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.185 FB_SEND_196_SNVT_enthalpy_d



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_enthalpy_d.

SNVT number: 196.

Description: Enthalpy difference (kJ/kg).

Inputs

```
VAR_INPUT
    wNVIndex      : WORD;
    rValue        : REAL;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    rValueLimit   : REAL := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR
```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
rValue	REAL	Min: -327.68 / Max: 327.67.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
rValueLimit	REAL	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>rValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

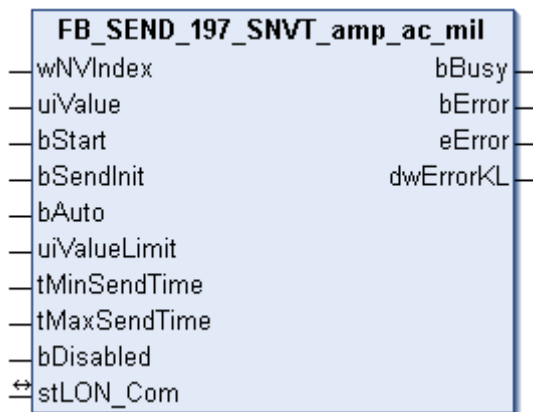
Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.

Name	Type	Description
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401 [► 27]() (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value eKL6401_Error. <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.186 FB_SEND_197_SNVT_amp_ac_mil



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_amp_ac_mil.

SNVT number: 197.

Description: Electric current (milliampere).

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    uiValue       : UINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    uiValueLimit  : UINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
uiValue	UINT	Min: 0 / Max: 65534.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).

Name	Type	Description
uiValueLimit	UINT	Parameter for automatic sending [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for automatic sending [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>uiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	<u>ST_LON_Communication</u> [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

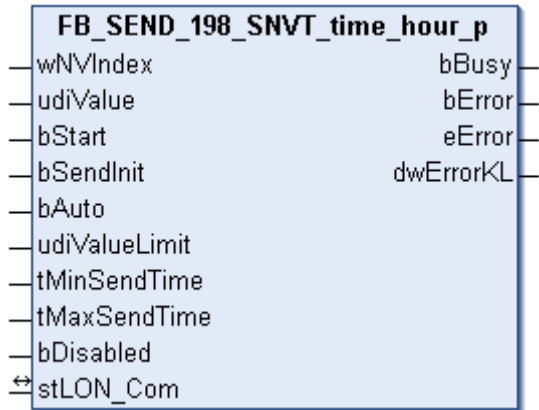
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	<u>E_LON_ERROR</u> [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.187 FB_SEND_198_SNVt_time_hour_p



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_time_hour_p.

SNVT number: 198.

Description: Time in hours.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    udiValue      : UDINT;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    udiValueLimit : UDINT := 1;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
udiValue	UDINT	Min: 0 / Max: 4294967294.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
udiValueLimit	UDINT	Parameter for <u>automatic sending</u> [► 707]. The value is only sent if the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value. This value is not available for enums and structures. It is sent there after every value change.
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest when this time has elapsed, even if the minimum value change (<i>udiValueLimit</i>) has not been reached (polling). The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```
VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR
```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link FB_LON_KL6401() [► 27] with the transmit/receive blocks.

Outputs

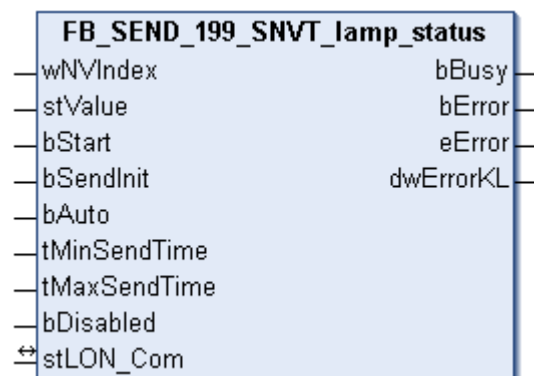
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block FB_LON_KL6401() [► 27] (see dwErrorKL [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.188 FB_SEND_199_SNVT_lamp_status



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_lamp_status.

SNVT number: 199.

Description: Lamp status.

Inputs

```
VAR_INPUT
    wNVIndex : WORD;
    stValue  : ST_LON_SNVT_lamp_status;
```



```

bStart      : BOOL;
bSendInit   : BOOL := bSendInitDefault;
bAuto       : BOOL := bAutoDefault;
tMinSendTime : TIME := tMinSendTimeDefault;
tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled   : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT lamp_status [► 683]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    eError     : E_LON_ERROR;
    dwErrorKL  : DWORD;
END_VAR

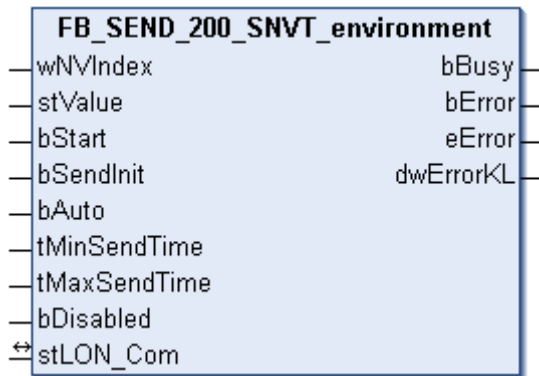
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.189 FB_SEND_200_SNVT_environment



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_environment.

SNVT number: 200.

Description: Environment.

Inputs

```

VAR_INPUT
    wNVIndex      : WORD;
    stValue       : ST_LON_SNVT_environment;
    bStart        : BOOL;
    bSendInit     : BOOL := bSendInitDefault;
    bAuto         : BOOL := bAutoDefault;
    tMinSendTime  : TIME := tMinSendTimeDefault;
    tMaxSendTime  : TIME := tMaxSendTimeDefault;
    bDisabled     : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_environment [► 679]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for automatic sending [► 707] . A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for automatic sending [► 707] . The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
    stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

🔌 Outputs

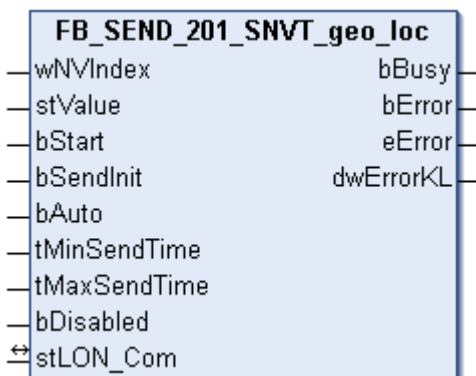
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401()</u> [► 27] (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <i>eKL6401_Error</i> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.3.190 FB_SEND_201_SNV geo_loc



This function block sends the following LON output variable (nvo):

SNVT Name: SNVT_geo_loc.

SNVT number: 201.

Description: Geographical location.

🔌 Inputs

```
VAR_INPUT
  wNVIndex      : WORD;
  stValue       : ST_LON_SNV geo_loc;
  bStart        : BOOL;
  bSendInit     : BOOL := bSendInitDefault;
  bAuto         : BOOL := bAutoDefault;
  tMinSendTime  : TIME := tMinSendTimeDefault;
```

```

tMaxSendTime : TIME := tMaxSendTimeDefault;
bDisabled    : BOOL := FALSE;
END_VAR

```

Name	Type	Description
wNVIndex	WORD	Unique index. This index is required for binding the LON nodes. A maximum of 62 SNVTs are permitted per LON terminal. Values between 0 and 61 are possible.
stValue	ST_LON_SNVT_geo_loc [► 681]	Structure of the data to be sent.
bStart	BOOL	A positive edge starts the send process (irrespective of <i>bAuto</i>).
bSendInit	BOOL	Automatically sends the value once when the PLC restarts.
bAuto	BOOL	Automatic sending [► 707] is selected when a value changes or the time <i>tMaxSendTime</i> has elapsed (polling).
tMinSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. A new value will be sent at the earliest after this time has elapsed. This prevents continuous sending.
tMaxSendTime	TIME	Parameter for <u>automatic sending</u> [► 707]. The value is sent at the latest after this time has elapsed. The value 0 disables this function.
bDisabled	BOOL	TRUE = deselection of the function block.

Inputs/outputs

```

VAR_IN_OUT
  stLON_Com : ST_LON_Communication;
END_VAR

```

Name	Type	Description
stLON_Com	ST_LON_Communication [► 665]	This structure is used to link <u>FB_LON_KL6401()</u> [► 27] with the transmit/receive blocks.

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  eError     : E_LON_ERROR;
  dwErrorKL  : DWORD;
END_VAR

```

Name	Type	Description
bBusy	BOOL	The <i>bBusy</i> output is TRUE as long as values are sent.
bError	BOOL	This output goes TRUE as soon as an error occurs. This error is described via the <i>eError</i> variable.
eError	E_LON_ERROR [► 557]	This output outputs an error code in the event of an error. <i>bError</i> goes TRUE at the same time.
dwErrorKL	DWORD	Error ID of the function block <u>FB_LON_KL6401</u> [► 27]() (see <u>dwErrorKL</u> [► 707]). In this case the variable <i>eError</i> has the value <u>eKL6401_Error</u> . <i>bError</i> goes TRUE at the same time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.1.4 Error codes

Error messages of the library



The NV index in the PLC is no

Sending without binding does not give an error message.

Value (hex)	Value (dec)	Value (enum)	Description
0x0000	0	eLON_no_Error	No error is pending.
0x0001	1	eLON_Value_out_of_range	The input variable "Value" is outside the permitted range. The value was not sent. "Value" can have different formats with corresponding prefix (e.g. LREAL = lValue).
0x0002	2	eLON_Terminal_not_ready	The function block "FB_LON_KL6401" passes through an initialization step chain (query terminal type, query firmware etc.) when the PLC is started. This message is issued as long as the initialization is in progress. If an error is pending after a PLC reset, the controller should be de-energized once.
0x0003	3	eLON_Wrong_SNVT_Typ	The received SNVT type does not match the SNVT type of the addressed NV index (input variable "wId").
0x0004	4	eLON_Wrong_wNVIndex	Incorrect NV index.
0x0005	5	eKL6401_Wrong_Terminal	No KL6401 was detected.
0x0006	6	eKL6401_Error	The function block "FB_LON_KL6401" has an error. The error code is shown at output "dwErrorKL".
0x0007	7	eKL6401_Terminal_is_not_initialized	The terminal is not initialized. This message usually means that there is no connection to the terminal. Terminal linked to the variables in the System Manager? Terminal plugged in incorrectly? Everything corrected, everything translated and re-read into the System Manager?
0x0032	50	eLON_L_star_Out_of_range	SNVT 70 / The input variable "stValue.L_star" is outside the permitted range. The value was not sent.
0x0033	51	eLON_A_star_Out_of_range	SNVT 70 / The input variable "stValue.A_star" is outside the permitted range. The value was not sent.
0x0034	52	eLON_B_star_Out_of_range	SNVT 70 / The input variable "stValue.B_star" is outside the permitted range. The value was not sent.
0x0037	55	eLON_eRequest_Out_of_range	SNVT 73 / The input variable "stValue.eRequest" is outside the permitted range. The value was not sent.
0x0042	66	eLON_wYear_Out_of_range	SNVT 084 / 088 / The input variable "stValue.wYear" is outside the permitted range. The value was not sent.
0x0043	67	eLON_wMonth_Out_of_range	SNVT 084 / 088 / The input variable "stValue.wMonth" is outside the permitted range. The value was not sent.
0x0044	68	eLON_wDay_Out_of_range	eLON_wDay_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wDay" is outside the permitted range. The value was not sent.
0x0045	69	eLON_wHour_Out_of_range	SNVT 084 / 088 / The input variable "stValue.wHour" is outside the permitted range. The value was not sent.
0x0046	70	eLON_wMinute_Out_of_range	SNVT 084 / 088 / The input variable "stValue.wMinute" is outside the permitted range. The value was not sent.
0x0047	71	eLON_wSecond_Out_of_range	SNVT 084 / 088 / The input variable "stValue.wSecond" is outside the permitted range. The value was not sent.
0x0048	72	eLON_wMillisecond_Out_of_range	SNVT 73 / The input variable "stValue.wMillisecond" is outside the permitted range. The value was not sent.
0x0050	80	eLON_rZero_Out_of_range	SNVT 085 / The input variable "stValue.rZero" is outside the permitted range. The value was not sent.
0x0051	81	eLON_rSpan_Out_of_range	SNVT 085 / The input variable "stValue.rSpan" is outside the permitted range. The value was not sent.
0x0055	85	eLON_arrValue01_Out_of_range	SNVT 086 / The input variable "arrValue[1]" is outside the permitted range. The value was not sent.
0x0056	86	eLON_arrValue02_Out_of_range	SNVT 086 / The input variable "arrValue[2]" is outside the permitted range. The value was not sent.
0x0057	87	eLON_arrValue03_Out_of_range	SNVT 086 / The input variable "arrValue[3]" is outside the permitted range. The value was not sent.
0x0058	88	eLON_arrValue04_Out_of_range	SNVT 086 / The input variable "arrValue[4]" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x0059	89	eLON_arrValue05_Out_of_range	SNVT 086 / The input variable "arrValue[5]" is outside the permitted range. The value was not sent.
0x005A	90	eLON_arrValue06_Out_of_range	SNVT 086 / The input variable "arrValue[6]" is outside the permitted range. The value was not sent.
0x005B	91	eLON_arrValue07_Out_of_range	SNVT 086 / The input variable "arrValue[7]" is outside the permitted range. The value was not sent.
0x005C	92	eLON_arrValue08_Out_of_range	SNVT 086 / The input variable "arrValue[8]" is outside the permitted range. The value was not sent.
0x005D	93	eLON_arrValue09_Out_of_range	SNVT 086 / The input variable "arrValue[9]" is outside the permitted range. The value was not sent.
0x0064	100	eLON_arrValue10_Out_of_range	SNVT 086 / The input variable "arrValue[10]" is outside the permitted range. The value was not sent.
0x0065	101	eLON_arrValue11_Out_of_range	SNVT 086 / The input variable "arrValue[11]" is outside the permitted range. The value was not sent.
0x0066	102	eLON_arrValue12_Out_of_range	SNVT 086 / The input variable "arrValue[12]" is outside the permitted range. The value was not sent.
0x0067	103	eLON_arrValue13_Out_of_range	SNVT 086 / The input variable "arrValue[13]" is outside the permitted range. The value was not sent.
0x0068	104	eLON_arrValue14_Out_of_range	SNVT 086 / The input variable "arrValue[14]" is outside the permitted range. The value was not sent.
0x0069	105	eLON_arrValue15_Out_of_range	SNVT 086 / The input variable "arrValue[15]" is outside the permitted range. The value was not sent.
0x006A	106	eLON_arrValue16_Out_of_range	SNVT 086 / The input variable "arrValue[16]" is outside the permitted range. The value was not sent.
0x006B	107	eLON_arrValue17_Out_of_range	SNVT 086 / The input variable "arrValue[17]" is outside the permitted range. The value was not sent.
0x006C	108	eLON_arrValue18_Out_of_range	SNVT 086 / The input variable "arrValue[18]" is outside the permitted range. The value was not sent.
0x006D	109	eLON_arrValue19_Out_of_range	SNVT 086 / The input variable "arrValue[19]" is outside the permitted range. The value was not sent.
0x0073	115	eLON_arrValue20_Out_of_range	SNVT 086 / The input variable "arrValue[20]" is outside the permitted range. The value was not sent.
0x0074	116	eLON_arrValue21_Out_of_range	SNVT 086 / The input variable "arrValue[21]" is outside the permitted range. The value was not sent.
0x0075	117	eLON_arrValue22_Out_of_range	SNVT 086 / The input variable "arrValue[22]" is outside the permitted range. The value was not sent.
0x0076	118	eLON_arrValue23_Out_of_range	SNVT 086 / The input variable "arrValue[23]" is outside the permitted range. The value was not sent.
0x0077	119	eLON_arrValue24_Out_of_range	SNVT 086 / The input variable "arrValue[24]" is outside the permitted range. The value was not sent.
0x0078	120	eLON_arrValue25_Out_of_range	SNVT 086 / The input variable "arrValue[25]" is outside the permitted range. The value was not sent.
0x0079	121	eLON_arrValue26_Out_of_range	SNVT 086 / The input variable "arrValue[26]" is outside the permitted range. The value was not sent.
0x007A	122	eLON_arrValue27_Out_of_range	SNVT 086 / The input variable "arrValue[27]" is outside the permitted range. The value was not sent.
0x007B	123	eLON_arrValue28_Out_of_range	SNVT 086 / The input variable "arrValue[28]" is outside the permitted range. The value was not sent.
0x007C	124	eLON_arrValue29_Out_of_range	SNVT 086 / The input variable "arrValue[29]" is outside the permitted range. The value was not sent.
0x0082	130	eLON_arrValue30_Out_of_range	SNVT 086 / The input variable "arrValue[30]" is outside the permitted range. The value was not sent.
0x0083	131	eLON_arrValue31_Out_of_range	SNVT 086 / The input variable "arrValue[31]" is outside the permitted range. The value was not sent.
0x0084	132	eLON_arrValue32_Out_of_range	SNVT 086 / The input variable "arrValue[32]" is outside the permitted range. The value was not sent.
0x0085	133	eLON_arrValue33_Out_of_range	SNVT 086 / The input variable "arrValue[33]" is outside the permitted range. The value was not sent.
0x0086	134	eLON_arrValue34_Out_of_range	SNVT 086 / The input variable "arrValue[34]" is outside the permitted range. The value was not sent.
0x0087	135	eLON_arrValue35_Out_of_range	SNVT 086 / The input variable "arrValue[35]" is outside the permitted range. The value was not sent.
0x0088	136	eLON_arrValue36_Out_of_range	SNVT 086 / The input variable "arrValue[36]" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x0089	137	eLON_arrValue37_Out_of_range	SNVT 086 / The input variable "arrValue[37]" is outside the permitted range. The value was not sent.
0x008A	138	eLON_arrValue38_Out_of_range	SNVT 086 / The input variable "arrValue[38]" is outside the permitted range. The value was not sent.
0x008B	139	eLON_arrValue39_Out_of_range	SNVT 086 / The input variable "arrValue[39]" is outside the permitted range. The value was not sent.
0x008C	140	eLON_arrValue40_Out_of_range	SNVT 086 / The input variable "arrValue[40]" is outside the permitted range. The value was not sent.
0x0091	145	eLON_087uiDay_Out_of_range	SNVT 087 / The input variable "stValue.uiDay" is outside the permitted range. The value was not sent.
0x0092	146	eLON_087uiHour_Out_of_range	SNVT 087 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.
0x0093	147	eLON_087uiMinute_Out_of_range	SNVT 087 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.
0x0094	148	eLON_087uiSecond_Out_of_range	SNVT 087 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.
0x0095	149	eLON_087uiMillisecond_Out_of_range	SNVT 087 / The input variable "stValue.uiMillisecond" is outside the permitted range. The value was not sent.
0x009B	155	eLON_ePriority_level_Out_of_range	SNVT 088 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.
0x009C	156	eLON_eAlarm_type_Out_of_range	SNVT 088 / The input variable "stValue.eAlarm_type" is outside the permitted range. The value was not sent.
0x00A0	160	eLON_Currency_Out_of_range	SNVT 089 / The input variable "stValue.Currency" is outside the permitted range. The value was not sent.
0x00A5	165	eLON_diRw_ptr_Out_of_range	SNVT 090 / The input variable "stValue.diRw_ptr" is outside the permitted range. The value was not sent.
0x00AA	170	eLON_Object_request_Out_of_range	SNVT 092 / The input variable "stValue.Object_request" is outside the permitted range. The value was not sent.
0x00AF	175	eLON_094eLearn_Out_of_range	SNVT 094 / The input variable "stValue.eLearn" is outside the permitted range. The value was not sent.
0x00B0	176	eLON_094uiHour_Out_of_range	SNVT 094 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.
0x00B1	177	eLON_094uiMinute_Out_of_range	SNVT 094 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.
0x00B2	178	eLON_094uiSecond_Out_of_range	SNVT 094 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.
0x00B3	179	eLON_094uiMillisecond_Out_of_range	SNVT 094 / The input variable "stValue.uiMillisecond" is outside the permitted range. The value was not sent.
0x00B9	185	eLON_095rValue_Out_of_range	SNVT 095 / The input variable "stValue.rValue" is outside the permitted range. The value was not sent.
0x00BA	186	eLON_095siState_Out_of_range	SNVT 095 / The input variable "stValue.siState" is outside the permitted range. The value was not sent.
0x00BE	190	eLON_byInterp_pts_0_to_1_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_0_to_1" is outside the permitted range. The value was not sent.
0x00BF	191	eLON_byInterp_pts_1_to_2_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_1_to_2" is outside the permitted range. The value was not sent.
0x00C0	192	eLON_byInterp_pts_2_to_3_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_2_to_3" is outside the permitted range. The value was not sent.
0x00C1	193	eLON_byInterp_pts_3_to_4_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_3_to_4" is outside the permitted range. The value was not sent.
0x00C2	194	eLON_byInterp_pts_4_to_5_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_4_to_5" is outside the permitted range. The value was not sent.
0x00C3	195	eLON_byInterp_pts_5_to_6_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_5_to_6" is outside the permitted range. The value was not sent.
0x00C4	196	eLON_byInterp_pts_6_to_0_Out_of_range	SNVT 096 / The input variable "stValue.byInterp_pts_6_to_0" is outside the permitted range. The value was not sent.
0x00C8	200	eLON_rOccupied_cool_Out_of_range	SNVT 106 / The input variable "stValue.rOccupied_cool" is outside the permitted range. The value was not sent.
0x00C9	201	eLON_rStandby_cool_Out_of_range	SNVT 106 / The input variable "stValue.rStandby_cool" is outside the permitted range. The value was not sent.
0x00CA	202	eLON_rUnoccupied_cool_Out_of_range	SNVT 106 / The input variable "stValue.rUnoccupied_cool" is outside the permitted range. The value was not sent.
0x00CB	203	eLON_rOccupied_heat_Out_of_range	SNVT 106 / The input variable "stValue.rOccupied_heat" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x00CC	204	eLON_rStandby_heat_Out_of_range	SNVT 106 / The input variable "stValue.rStandby_heat" is outside the permitted range. The value was not sent.
0x00CD	205	eLON_rUnoccupied_heat_Out_of_range	SNVT 106 / The input variable "stValue.rUnoccupied_heat" is outside the permitted range. The value was not sent.
0x00D2	210	eLON_111rPercent_Out_of_range	SNVT 111 / The input variable "stValue.rPercent" is outside the permitted range. The value was not sent.
0x00D3	211	eLON_111eState_Out_of_range	SNVT 111 / The input variable "stValue.eState" is outside the permitted range. The value was not sent.
0x00D7	215	eLON_eMode_Out_of_range	SNVT 112 / The input variable "stValue.eMode" is outside the permitted range. The value was not sent.
0x00D8	216	eLON_rHeat_output_primary_Out_of_range	SNVT 112 / The input variable "stValue.rHeat_output_primary" is outside the permitted range. The value was not sent.
0x00D9	217	eLON_rHeat_output_secondary_Out_of_range	SNVT 112 / The input variable "stValue.rHeat_output_secondary" is outside the permitted range. The value was not sent.
0x00DA	218	eLON_rCool_output_Out_of_range	SNVT 112 / The input variable "stValue.rCool_output" is outside the permitted range. The value was not sent.
0x00DB	219	eLON_rEcon_output_Out_of_range	SNVT 112 / The input variable "stValue.rEcon_output" is outside the permitted range. The value was not sent.
0x00DC	220	eLON_rFan_output_Out_of_range	SNVT 112 / The input variable "stValue.rFan_output" is outside the permitted range. The value was not sent.
0x00E1	225	eLON_115eFunction_Out_of_range	SNVT 115 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.
0x00E2	226	eLON_eFunction_Out_of_range	SNVT 116 / 117 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.
0x00E3	227	eLON_rSetting_Out_of_range	SNVT 116 / 117 / The input variable "stValue.rSetting" is outside the permitted range. The value was not sent.
0x00E4	228	eLON_rRotation_Out_of_range	SNVT 116 / 117 / The input variable "stValue.rRotation" is outside the permitted range. The value was not sent.
0x00E5	229	eLON_rFade_time_Out_of_range	SNVT 116 / The input variable "stValue.rFade_time" is outside the permitted range. The value was not sent.
0x00E6	230	eLON_rDelay_time_Out_of_range	SNVT 116 / The input variable "stValue.rDelay_time" is outside the permitted range. The value was not sent.
0x00EB	235	eLON_eChlr_run_mode_Out_of_range	SNVT 127 / The input variable "stValue.eChlr_run_mode" is outside the permitted range. The value was not sent.
0x00EC	236	eLON_echlr_op_mode_Out_of_range	SNVT 127 / The input variable "stValue.echlr_op_mode" is outside the permitted range. The value was not sent.
0x00F0	240	eLON_eNext_state_Out_of_range	SNVT 128 / The input variable "stValue.eNext_state" is outside the permitted range. The value was not sent.
0x00F1	241	eLON_eCurrent_state_Out_of_range	SNVT 128 / The input variable "stValue.eCurrent_state" is outside the permitted range. The value was not sent.
0x00F5	245	eLON_diSecond_time_offset_Out_of_range	SNVT 134 / The input variable "stValue.diSecond_time_offset" is outside the permitted range. The value was not sent.
0x00F6	246	eLON_eType_of_description_Out_of_range	SNVT 134 / The input variable "stValue.eType_of_description" is outside the permitted range. The value was not sent.
0x00FA	250	eLON_byHour_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.byHour_of_start_DST" is outside the permitted range. The value was not sent.
0x00FB	251	eLON_byMinute_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.byMinute_of_start_DST" is outside the permitted range. The value was not sent.
0x00FC	252	eLON_bySecond_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.bySecond_of_start_DST" is outside the permitted range. The value was not sent.
0x0104	260	eLON_byHour_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.byHour_of_end_DST" is outside the permitted range. The value was not sent.
0x0105	261	eLON_byMinute_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.byMinute_of_end_DST" is outside the permitted range. The value was not sent.
0x0106	262	eLON_bySecond_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.bySecond_of_end_DST" is outside the permitted range. The value was not sent.
0x0107	263	eLON_stStart_DST_uiG_day_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.stStart_DST.uiG_day_of_start_DST" is outside the permitted range. The value was not sent.
0x0108	264	eLON_stStart_DST_uiJ_day_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.stStart_DST.uiJ_day_of_start_DST" is outside the permitted range. The value was not sent.
0x0109	265	eLON_stStart_DST_stM_start_DST_byMonth_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.byMonth_of_start_DST" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x010A	266	eLON_stStart_DST_stM_start_DST_byWeek_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.byWeek_of_start_DST" is outside the permitted range. The value was not sent.
0x010B	267	eLON_stStart_DST_stM_start_DST_eDateday_of_start_DST_Out_of_range	SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.eDateday_of_start_DST" is outside the permitted range. The value was not sent.
0x010C	268	eLON_stEnd_DST_uiG_day_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.stEnd_DST.uiG_day_of_end_DST" is outside the permitted range. The value was not sent.
0x010D	269	eLON_stEnd_DST_uiJ_day_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.stEnd_DST.uiJ_day_of_end_DST" is outside the permitted range. The value was not sent.
0x010E	270	eLON_stEnd_DST_stM_end_DST_byMonth_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.byMonth_of_end_DST" is outside the permitted range. The value was not sent.
0x010F	271	eLON_stEnd_DST_stM_end_DST_byWeek_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.byWeek_of_end_DST" is outside the permitted range. The value was not sent.
0x0110	272	eLON_stEnd_DST_stM_end_DST_eDateday_of_end_DST_Out_of_range	SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.eDateday_of_end_DST" is outside the permitted range. The value was not sent.
0x0118	280	eLON_byLatitude_deg_Out_of_range	SNVT 135 / The input variable "stValue.byLatitude" is outside the permitted range. The value was not sent.
0x0119	281	eLON_rLatitude_min_Out_of_range	SNVT 135 / The input variable "stValue.rLatitude" is outside the permitted range. The value was not sent.
0x011A	282	eLON_bylongitude_deg_Out_of_range	SNVT 135 / The input variable "stValue.bylongitude_deg" is outside the permitted range. The value was not sent.
0x011B	283	eLON_rLongitude_min_Out_of_range	SNVT 135 / The input variable "stValue.rLongitude_min" is outside the permitted range. The value was not sent.
0x0122	290	eLON_byNr_decimals_Out_of_range	SNVT 136 / The input variable "stValue.byNr_decimals" is outside the permitted range. The value was not sent.
0x0123	291	eLON_eUnit_Out_of_range	SNVT 136 / The input variable "stValue.eUnit" is outside the permitted range. The value was not sent.
0x0127	295	eLON_137eUnit_Out_of_range	SNVT 137 / The input variable "stValue.eUnit" is outside the permitted range. The value was not sent.
0x0128	296	eLON_137byNr_decimals_Out_of_range	SNVT 137 / The input variable "stValue.byNr_decimals" is outside the permitted range. The value was not sent.
0x0129	297	eLON_137byStatus_Out_of_range	SNVT 137 / The input variable "stValue.byStatus" is outside the permitted range. The value was not sent.
0x012A	298	eLON_137uiYear_Out_of_range	SNVT 137 / The input variable "stValue.uiYear" is outside the permitted range. The value was not sent.
0x012B	299	eLON_137uiMonth_Out_of_range	SNVT 137 / The input variable "stValue.uiMonth" is outside the permitted range. The value was not sent.
0x012C	300	eLON_137uiDay_Out_of_range	SNVT 137 / The input variable "stValue.uiDay" is outside the permitted range. The value was not sent.
0x012D	301	eLON_137uiHour_Out_of_range	SNVT 137 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.
0x012E	302	eLON_137uiMinute_Out_of_range	SNVT 137 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.
0x012F	303	eLON_137uiSecond_Out_of_range	SNVT 137 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.
0x0136	310	eLON_bySender_prio_Out_of_range	SNVT 148 / The input variable "stValue.bySender_prio" is outside the permitted range. The value was not sent.
0x013B	315	eLON_eStatus_Out_of_range	SNVT 149 / The input variable "stValue.eStatus" is outside the permitted range. The value was not sent.
0x013C	316	eLON_stSender_uiID_Out_of_range	SNVT 149 / The input variable "stValue.stSender.uiID" is outside the permitted range. The value was not sent.
0x013D	317	eLON_stSender_stRange_uiLower_Out_of_range	SNVT 149 / The input variable "stValue.stSender.stRange.uiLower" is outside the permitted range. The value was not sent.
0x013E	318	eLON_stSender_stRange_uiUpper_Out_of_range	SNVT 149 / The input variable "stValue.stSender.stRange.uiUpper" is outside the permitted range. The value was not sent.
0x013F	319	eLON_uiController_id_Out_of_range	SNVT 149 / The input variable "stValue.uiController" is outside the permitted range. The value was not sent.
0x0145	325	eLON_ePan_dir_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x0146	326	eLON_rPan_speed_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x0147	327	eLON_eTilt_dir_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x0148	328	eLON_rTilt_speed_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x0149	329	eLON_eZoom_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x014A	330	eLON_rZoom_speed_Out_of_range	SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x014F	335	eLON_eAction_Out_of_range	SNVT 151 / The input variable "stValue.eAction" is outside the permitted range. The value was not sent.
0x0154	340	eLON_byController_prio_Out_of_range	SNVT 152 / The input variable "stValue.byController" is outside the permitted range. The value was not sent.
0x0155	341	eLON_152eFunction_Out_of_range	SNVT 152 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.
0x0156	342	eLON_152eAction_Out_of_range	SNVT 152 / The input variable "stValue.eAction" is outside the permitted range. The value was not sent.
0x0157	343	eLON_stValue_stAbspos_rZoom_Out_of_range	SNVT 152 / The input variable "stValue.stValue.stAbspos.rZoom" is outside the permitted range. The value was not sent.
0x0158	344	eLON_stValue_stAbspos_rTilt_Out_of_range	SNVT 152 / The input variable "stValue.stValue.stAbspos.rTilt" is outside the permitted range. The value was not sent.
0x0159	345	eLON_stValue_stAbspos_rPan_Out_of_range	SNVT 152 / The input variable "stValue.stValue.stAbspos.rPan" is outside the permitted range. The value was not sent.
0x015E	350	eLON_eMain_pump_Out_of_range	SNVT 156 / The input variable "stValue.eMain_pump" is outside the permitted range. The value was not sent.
0x015F	351	eLON_eBooster_pump_Out_of_range	SNVT 156 / The input variable "stValue.eBooster_pump" is outside the permitted range. The value was not sent.
0x0160	352	eLON_ePriority_level_Out_of_range	SNVT 156 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.
0x0161	353	eLON_eProcess_ready_Out_of_range	SNVT 156 / The input variable "stValue.eProcess_ready" is outside the permitted range. The value was not sent.
0x0162	354	eLON_eEmergency_stop_activated_Out_of_range	SNVT 156 / The input variable "stValue.eEmergency_stop_activated" is outside the permitted range. The value was not sent.
0x0163	355	eLON_eMain_pump_drive_enabled_Out_of_range	SNVT 156 / The input variable "stValue.eMain_pump_drive_enabled" is outside the permitted range. The value was not sent.
0x0164	356	eLON_eBooster_pump_drive_enabled_Out_of_range	SNVT 156 / The input variable "stValue.eBooster_pump_drive_enabled" is outside the permitted range. The value was not sent.
0x0165	357	eLON_eMaintenance_required_Out_of_range	SNVT 156 / The input variable "stValue.eMaintenance_required" is outside the permitted range. The value was not sent.
0x016D	365	eLON_eControl_status_Out_of_range	SNVT 157 / The input variable "stValue.eControl_status" is outside the permitted range. The value was not sent.
0x016E	366	eLON_stControl_device_addr_byDomain_length_Out_of_range	SNVT 157 / The input variable "stValue.stControl_device_addr.byDomain_length" is outside the permitted range. The value was not sent.
0x016F	367	eLON_stControl_device_addr_bySubnet_Out_of_range	SNVT 157 / The input variable "stValue.stControl_device_addr.bySubnet" is outside the permitted range. The value was not sent.
0x0170	368	eLON_stControl_device_addr_byNode_Out_of_range	SNVT 157 / The input variable "stValue.stControl_device_addr.byNode" is outside the permitted range. The value was not sent.
0x0177	375	eLON_rExhaust_temperature_Out_of_range	SNVT 158 / The input variable "stValue.rExhaust_temperature" is outside the permitted range. The value was not sent.
0x0178	376	eLON_rExhaust_pressure_Out_of_range	SNVT 158 / The input variable "stValue.rExhaust_pressure" is outside the permitted range. The value was not sent.
0x0179	377	eLON_rShaft_seal_purge_pressure_Out_of_range	SNVT 158 / The input variable "stValue.rShaft_seal_purge_pressure" is outside the permitted range. The value was not sent.
0x017A	378	eLON_rSupply_voltage_Out_of_range	SNVT 158 / The input variable "stValue.rSupply_voltage" is outside the permitted range. The value was not sent.
0x017B	379	eLON_eCoolant_flow_low_Out_of_range	SNVT 158 / The input variable "stValue.eCoolant_flow_low" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x017C	380	eLON_eDilution_active_Out_of_range	SNVT 158 / The input variable "stValue.eDilution_active" is outside the permitted range. The value was not sent.
0x017D	381	eLON_eBallast_dilution_active_Out_of_range	SNVT 158 / The input variable "stValue.eBallast_dilution_active" is outside the permitted range. The value was not sent.
0x017E	382	eLON_eInlet_purge_dilution_active_Out_of_range	SNVT 158 / The input variable "stValue.eInlet_purge_dilution_active" is outside the permitted range. The value was not sent.
0x017F	383	eLON_eExhaust_dilution_active_Out_of_range	SNVT 158 / The input variable "stValue.eExhaust_dilution_active" is outside the permitted range. The value was not sent.
0x0180	384	eLON_eDilution_flow_Out_of_range	SNVT 158 / The input variable "stValue.eDilution_flow" is outside the permitted range. The value was not sent.
0x0181	385	eLON_ePower_supply_on_Out_of_range	SNVT 158 / The input variable "stValue.ePower_supply_on" is outside the permitted range. The value was not sent.
0x0186	390	eLON_rRotational_speed_Out_of_range	SNVT 159 / The input variable "stValue.rRotational_speed" is outside the permitted range. The value was not sent.
0x0187	391	eLON_rBody_temperature_Out_of_range	SNVT 159 / The input variable "stValue.rBody" is outside the permitted range. The value was not sent.
0x0188	392	eLON_rMotor_external_temperature_Out_of_range	SNVT 159 / The input variable "stValue.rMotor_external_temperature" is outside the permitted range. The value was not sent.
0x0189	393	eLON_rMotor_external_temperature_Out_of_range	SNVT 159 / The input variable "stValue.eMotor_overloaded" is outside the permitted range. The value was not sent.
0x018A	394	eLON_eMotor_overloaded_Out_of_range	SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x018B	395	eLON_eOil_level_low_Out_of_range	SNVT 159 / The input variable "stValue.ePhase_imbalance_detected" is outside the permitted range. The value was not sent.
0x018C	396	eLON_ePhase_imbalance_detected_Out_of_range	SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x018D	397	eLON_rCurrent_usage_Out_of_range	SNVT 159 / The input variable "stValue.rCurrent_usage" is outside the permitted range. The value was not sent.
0x018E	398	eLON_rPower_usage_Out_of_range	SNVT 159 / The input variable "stValue.Power_usage" is outside the permitted range. The value was not sent.
0x018F	399	eLON_eTemperature_control_Out_of_range	SNVT 159 / The input variable "stValue.eElectromagnetic_brake_active" is outside the permitted range. The value was not sent.
0x0190	400	eLON_eElectromagnetic_brake_active_Out_of_range	SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x0191	401	eLON_eFriction_brake_active_Out_of_range	SNVT 159 / The input variable "stValue.eFriction_brake_active" is outside the permitted range. The value was not sent.
0x0192	402	eLON_eGas_brake_active_Out_of_range	SNVT 159 / The input variable "stValue.eGas_brake_active" is outside the permitted range. The value was not sent.
0x019A	410	eLON_164iMilliseconds_Out_of_range	SNVT 164 / The input variable "stValue.iMilliseconds" is outside the permitted range. The value was not sent.
0x019B	411	eLON_164ePriority_level_Out_of_range	SNVT 164 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.
0x019C	412	eLON_164eAlarm_type_Out_of_range	SNVT 164 / The input variable "stValue.eAlarm" is outside the permitted range. The value was not sent.
0x01A4	420	eLON_byType_scope_Out_of_range	SNVT 166 / The input variable "stValue.byType_scope" is outside the permitted range. The value was not sent.
0x01A5	421	eLON_uiType_index_Out_of_range	SNVT 166 / The input variable "stValue.uiType_index" is outside the permitted range. The value was not sent.
0x01A6	422	eLON_eType_category_Out_of_range	SNVT 166 / The input variable "stValue.eType_category" is outside the permitted range. The value was not sent.
0x01A7	423	eLON_byType_length_Out_of_range	SNVT 166 / The input variable "stValue.byType" is outside the permitted range. The value was not sent.
0x01AE	430	eLON_eCmd_fb_Out_of_range	SNVT 170 / The input variable "stValue.eCmd_fb" is outside the permitted range. The value was not sent.
0x01B3	435	eLON_byManufacturer_Out_of_range	SNVT 172 / The input variable "stValue.byManufacturer" is outside the permitted range. The value was not sent.
0x01B8	440	eLON_eDevice_select_Out_of_range	SNVT 175 / The input variable "stValue.eDevice_select" is outside the permitted range. The value was not sent.
0x01BD	445	eLON_stPos_eFunction_Out_of_range	SNVT 180 / The input variable "stValue.stPos_eFunction" is outside the permitted range. The value was not sent.
0x01BE	446	eLON_stPos_rSetting_Out_of_range	SNVT 180 / The input variable "stValue.stPos.rSetting" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x01BF	447	eLON_stPos_rRotation_Out_of_range	SNVT 180 / The input variable "stValue.stPos.rRotation" is outside the permitted range. The value was not sent.
0x01C0	448	eLON_eCmd_source_Out_of_range	SNVT 180 / The input variable "stValue.eCmd_source" is outside the permitted range. The value was not sent.
0x01C1	449	eLON_eError_code_Out_of_range	SNVT 180 / The input variable "stValue._eError_code" is outside the permitted range. The value was not sent.
0x01C7	455	eLON_181stAddr_talk_eAudio_sensor_type_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_talk.eAudio_sensor" is outside the permitted range. The value was not sent.
0x01C8	456	eLON_181stAddr_talk_byCar_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_talk.byCar_id" is outside the permitted range. The value was not sent.
0x01C9	457	eLON_181stAddr_talk_byLocation_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_talk.byLocation" is outside the permitted range. The value was not sent.
0x01CA	458	eLON_181stAddr_talk_byUnit_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_talk.byUnit" is outside the permitted range. The value was not sent.
0x01CB	459	eLON_181stAddr_init_eAudio_sensor_type_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_init.eAudio_sensor_type" is outside the permitted range. The value was not sent.
0x01C2	450	eLON_181stAddr_init_byCar_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_init.byCar" is outside the permitted range. The value was not sent.
0x01CD	461	eLON_181stAddr_init_byLocation_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_init.byLocation" is outside the permitted range. The value was not sent.
0x01CE	462	eLON_181stAddr_init_byUnit_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_init.byUnit" is outside the permitted range. The value was not sent.
0x01CF	463	eLON_181eAudio_type_Out_of_range	SNVT 181 / The input variable "stValue.eAudio_type" is outside the permitted range. The value was not sent.
0x01D0	464	eLON_181byAudio_line_Out_of_range	SNVT 181 / The input variable "stValue.byAudio_line" is outside the permitted range. The value was not sent.
0x01D1	465	eLON_181stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.eAudio_sensor_type" is outside the permitted range. The value was not sent.
0x01D2	466	eLON_181stAddr_dest_stP2p_byCar_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.byLocation" is outside the permitted range. The value was not sent.
0x01D3	467	eLON_181stAddr_dest_stP2p_byLocation_Out_of_range	SNVT 181 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x01D4	468	eLON_181stAddr_dest_stP2p_byUnit_id_Out_of_range	SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.byUnit_id" is outside the permitted range. The value was not sent.
0x01DB	475	eLON_stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.eAudio_sensor_type" is outside the permitted range. The value was not sent.
0x01DC	476	eLON_stAddr_dest_stP2p_byCar_id_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.byCar" is outside the permitted range. The value was not sent.
0x01DD	477	eLON_stAddr_dest_stP2p_byLocation_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.byLocation" is outside the permitted range. The value was not sent.
0x01DE	478	eLON_stAddr_dest_stP2p_byUnit_id_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_init.eAudio_sensor_type" is outside the permitted range. The value was not sent.
0x01DF	479	eLON_stAddr_init_eAudio_sensor_type_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_init.byCar_id" is outside the permitted range. The value was not sent.
0x01E0	480	eLON_stAddr_init_byCar_id_Out_of_range	SNVT 182 / The input variable "stValue." is outside the permitted range. The value was not sent.
0x01E1	481	eLON_stAddr_init_byLocation_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_init.byLocation" is outside the permitted range. The value was not sent.
0x01E2	482	eLON_stAddr_init_byUnit_id_Out_of_range	SNVT 182 / The input variable "stValue.stAddr_init.byUnit_id" is outside the permitted range. The value was not sent.
0x01E3	483	eLON_eAudio_type_Out_of_range	SNVT 182 / The input variable "stValue.eAudio_type" is outside the permitted range. The value was not sent.
0x01EA	490	eLON_eCycle_Out_of_range	SNVT 184 / The input variable "stValue.eCycle" is outside the permitted range. The value was not sent.
0x01EB	491	eLON_eSubcycle_Out_of_range	SNVT 184 / The input variable "stValue.eSubcycle" is outside the permitted range. The value was not sent.
0x01EC	492	eLON_stFunction_eProgram_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.eProgram" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x01ED	493	eLON_stFunction_stWash_eLoad_level_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stWash_eLoad_level" is outside the permitted range. The value was not sent.
0x01EE	494	eLON_stFunction_stWash_ePrewash_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stWash.ePrewash" is outside the permitted range. The value was not sent.
0x01EF	495	eLON_stFunction_stRinse_eOption_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stRinse.eOption" is outside the permitted range. The value was not sent.
0x01F0	496	eLON_stFunction_stRinse_byRepeat_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stRinse.byRepeat" is outside the permitted range. The value was not sent.
0x01F1	497	eLON_stFunction_stSpin_eHold_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stSpin.eHold" is outside the permitted range. The value was not sent.
0x01F2	498	eLON_stFunction_stDry_byTemp_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stDry.byTemp" is outside the permitted range. The value was not sent.
0x01F3	499	eLON_stFunction_stDry_stDuration_eDryness_Out_of_range	SNVT 184 / The input variable "stValue.stFunction.stDry.stDuration.eDryness" is outside the permitted range. The value was not sent.
0x01F9	505	eLON_186eCycle_Out_of_range	SNVT 186 / The input variable "stValue.eCycle" is outside the permitted range. The value was not sent.
0x01FA	506	eLON_186eSubcycle_Out_of_range	SNVT 186 / The input variable "stValue.eSubcycle" is outside the permitted range. The value was not sent.
0x01FB	507	eLON_stWasher_command_data_eCycle_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.eCycle" is outside the permitted range. The value was not sent.
0x01FC	508	eLON_stWasher_command_data_eSubcycle_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.eSubcycle" is outside the permitted range. The value was not sent.
0x01FD	509	eLON_stWasher_command_data_stFunction_eProgram_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.eProgram" is outside the permitted range. The value was not sent.
0x01FE	510	eLON_stWasher_command_data_stFunction_stWash_eLoad_level_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stWash.eLoad" is outside the permitted range. The value was not sent.
0x01FF	511	eLON_stWasher_command_data_stFunction_stWash_ePrewash_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stWash.ePrewash" is outside the permitted range. The value was not sent.
0x0200	512	eLON_stWasher_command_data_stFunction_stRinse_eOption_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stRinse.eOption" is outside the permitted range. The value was not sent.
0x0201	513	eLON_stWasher_command_data_stFunction_stRinse_byRepeat_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stRinse.byRepeat" is outside the permitted range. The value was not sent.
0x0202	514	eLON_stWasher_command_data_stFunction_stSpin_eHold_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stSpin.eHold" is outside the permitted range. The value was not sent.
0x0203	515	eLON_stWasher_command_data_stFunction_stDry_byTemp_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stDry.byTemp" is outside the permitted range. The value was not sent.
0x0204	516	eLON_stWasher_command_data_stFunction_stDry_stDuration_eDryness_Out_of_range	SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stDry.stDuration.eDryness" is outside the permitted range. The value was not sent.
0x0206	518	eLON_eState_Out_of_range	SNVT 189 / The input variable "stValue.eState" is outside the permitted range. The value was not sent.
0x0207	519	eLON_stSetting_rValue_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.rValue" is outside the permitted range. The value was not sent.
0x0208	520	eLON_stSetting_rChange_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.rChange" is outside the permitted range. The value was not sent.
0x0209	521	eLON_stSetting_rMultiplier_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.rMultiplier" is outside the permitted range. The value was not sent.
0x020A	522	eLON_stSetting_iAngle_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.iAngle" is outside the permitted range. The value was not sent.
0x020B	523	eLON_stSetting_byGroup_number_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.byGroup_number" is outside the permitted range. The value was not sent.
0x020C	524	eLON_stSetting_siFan_level_Out_of_range	SNVT 189 / The input variable "stValue.stSettings.siFan_level" is outside the permitted range. The value was not sent.

Value (hex)	Value (dec)	Value (enum)	Description
0x020D	525	eLON_stColor_value_stCIE1931_lumen_rX_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.rX" is outside the permitted range. The value was not sent.
0x020E	526	eLON_stColor_value_stCIE1931_lumen_rY_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.rY" is outside the permitted range. The value was not sent.
0x020F	527	eLON_stColor_value_stCIE1931_lumen_udiAbsolute_Y_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.udiAbsolute_Y" is outside the permitted range. The value was not sent.
0x0210	528	eLON_stColor_value_stCIE1931_percent_rX_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rX" is outside the permitted range. The value was not sent.
0x0211	529	eLON_stColor_value_stCIE1931_percent_rY_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rY" is outside the permitted range. The value was not sent.
0x0212	530	eLON_stColor_value_stCIE1931_percent_rPercent_Y_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rPercent_Y" is outside the permitted range. The value was not sent.
0x0213	531	eLON_stColor_value_uiColor_temperature_Out_of_range	SNVT 190 / The input variable "stValue.stColor_value.uiColor_temperature" is outside the permitted range. The value was not sent.
0x0217	535	eLON_191eStatus_Out_of_range	SNVT 191 / The input variable "stValue.Status" is outside the permitted range. The value was not sent.
0x0218	536	eLON_uiLog_number_Out_of_range	SNVT 191 / The input variable "stValue.uiLog_number" is outside the permitted range. The value was not sent.
0x0219	537	eLON_rLevel_Out_of_range	SNVT 191 / The input variable "stValue.rLevel" is outside the permitted range. The value was not sent.
0x021A	538	eLON_stCurrent_notify_time_rHundredths_Out_of_range	SNVT 191 / The input variable "stValue.stCurrent_notify_time.rHundredths" is outside the permitted range. The value was not sent.
0x021B	539	eLON_stPrevious_notify_time_rHundredths_Out_of_range	SNVT 191 / The input variable "stValue.stPrevious_notify_time.rHundredths" is outside the permitted range. The value was not sent.
0x0221	545	eLON_rHundredths_Out_of_range	SNVT 192 / The input variable "stValue.rHundredths" is outside the permitted range. The value was not sent.
0x0226	550	eLON_stStart_time_rHundredths_Out_of_range	SNVT 193 / The input variable "stValue.stStart_time.rHundredths" is outside the permitted range. The value was not sent.
0x0227	551	eLON_stEnd_time_rHundredths_Out_of_range	SNVT 193 / The input variable "stValue.stEnd_time.rHundredths" is outside the permitted range. The value was not sent.
0x0235	565	eLON_rComplete_Out_of_range	SNVT 194 / The input variable "stValue.rComplete" is outside the permitted range. The value was not sent.
0x023A	570	eLON_stTime_actual_rHundredths_Out_of_range	SNVT 199 / The input variable "stValue.stTime_actual.rHundredths" is outside the permitted range. The value was not sent.
0x023B	571	eLON_stTime_previous_rHundredths_Out_of_range	SNVT 199 / The input variable "stValue.stTime_previous.rHundredths" is outside the permitted range. The value was not sent.
0x0249	585	eLON_lrEnergy_Out_of_range	SNVT 200 / The input variable "stValue.lrEnergy" is outside the permitted range. The value was not sent.
0x024A	586	eLON_rPowerFactor_Out_of_range	SNVT 200 / The input variable "stValue.rPowerFactor" is outside the permitted range. The value was not sent.
0x024B	587	eLON_rPower_Out_of_range	SNVT 200 / The input variable "stValue.rPower" is outside the permitted range. The value was not sent.
0x024C	588	eLON_rBallastTemp_Out_of_range	SNVT 200 / The input variable "stValue.rBallastTemp" is outside the permitted range. The value was not sent.
0x0253	595	eLON_lrLongitude_Out_of_range	SNVT 201 / The input variable "stValue.lrLongitude" is outside the permitted range. The value was not sent.
0x0254	596	eLON_lrLatitude_Out_of_range	SNVT 201 / The input variable "stValue.lrLatitude" is outside the permitted range. The value was not sent.

4.2 DUTs

Enums

Data types	Description
E_LON_alarm_type_t [► 583]	Used by: SNVT_alarm / SNVT_alarm_2
E_LON_appl_cwc_t [► 584]	Used by: SNVT_clothes_w_c / SNVT_clothes_w_s
E_LON_appl_cwp_t [► 585]	Used by: SNVT_clothes_w_c
E_LON_appl_cws_t [► 586]	Used by: SNVT_clothes_w_c / SNVT_clothes_w_s
E_LON_appl_rin_t [► 586]	Used by: SNVT_clothes_w_c
E_LON_boolean_t [► 587]	Used by: SCPTautoAnswer / SCPTcoolingResetEnable / SCPTdefrostHold / SCPTdefrostInternalSchedule / SCPTheatingResetEnable / SCPTHighLimit1Enable / SCPTHighLimit2Enable / SCPTLowLimit1Enable / SCPTLowLimit2Enable / SCPTscheduleInternal / SNVT_clothes_w_c / SNVT_pump_sensor / SNVT_pumpset_mn / SNVT_pumpset_sn
E_LON_calendar_type_t [► 587]	Used by: SNVT_time_zone
E_LON_cam_act_t [► 587]	Used by: SNVT_pos_ctrl
E_LON_cam_func_t [► 588]	Used by: SNVT_pos_ctrl
E_LON_chiller_t [► 588]	Used by: SNVT_chlr_status
E_LON_color_encoding_t [► 589]	Used by: SNVT_color_2
E_LON_config_source_t [► 589]	Used by: SNVT_config_src
E_LON_control_resp_t [► 589]	Used by: SNVT_ctrl_resp
E_LON_currency_t [► 590]	Used by: SNVT_currency
E_LON_days_of_week_t [► 593]	Used by: SCPTtimePeriod / SNVT_date_day / SNVT_time_zone
E_LON_defrost_mode_t [► 593]	Used by: SNVT_defr_mode
E_LON_defrost_state_t [► 593]	Used by: SNVT_defr_state
E_LON_defrost_term_t [► 594]	Used by: SNVT_defr_term
E_LON_device_c_mode_t [► 595]	Used by: SNVT_dev_c_mode
E_LON_device_select_t [► 596]	Used by: SNVT_dev_fault / SNVT_dev_maint / SNVT_dev_status
E_LON_discrete_levels_t [► 596]	Used by: SNVT_clothes_w_c / SNVT_lev_disc
E_LON_emerg_t [► 596]	Used by: SNVT_hvac_emerg
E_LON_ent_cmd_t [► 597]	Used by: SNVT_ent_state
E_LON_ent_opmode_cmd_t [► 598]	Used by: SNVT_ent_opmode / SNVT_ent_status
E_LON_evap_t [► 599]	Used by: SNVT_evap_state
E_LON_ex_control_t [► 599]	Used by: SNVT_ex_control
E_LON_file_request_t [► 599]	Used by: SNVT_file_req
E_LON_file_status_t [► 600]	Used by: SNVT_file_status
E_LON_fire_indicator_t [► 601]	Used by: SNVT_fire_indcte
E_LON_fire_initiator_t [► 601]	Used by: SNVT_fire_init
E_LON_fire_test_t [► 602]	Used by: SNVT_fire_test
E_LON_flow_direction_t [► 603]	Used by: SNVT_flow_dir
E_LON_gfci_status_t [► 603]	Used by: SNVT_gfci_status
E_LON_hvac_hvt_t [► 604]	Used by: SNVT_hvac_type

Data types	Description
E_LON_hvac_overid t [► 604]	Used by: SNVT_hvac_overid
E_LON_hvac t [► 607]	Used by: SNVT_chlr_status / SNVT_hvac_mode / SNVT_hvac_status
E_LON_learn_mode t [► 608]	Used by: SNVT_preset
E_LON_log_status t [► 608]	Used by: SCPTlogRecord / SNVT_log_status
E_LON_motor_state t [► 609]	Used by: SNVT_motor_state / SNVT_pumpset_mn
E_LON_nv_type_category t [► 609]	Used by: SNVT_nv_type
E_LON_object_request t [► 610]	Used by: SNVT_obj_request
E_LON_occup t [► 611]	Used by: SNVT_occupancy / SNVT_tod_event
E_LON_override t [► 611]	Used by: SNVT_override
E_LON_pan_dir t [► 612]	Used by: SNVT_ptz
E_LON_priority_level t [► 612]	Used by: SNVT_alarm / SNVT_alarm_2 / SNVT_pumpset_mn
E_LON_privacyzone t [► 613]	Used by: SNVT_privacyzone
E_LON_rail_audio_sensor_type t [► 613]	Used by: SNVT_rac_ctrl / SNVT_rac_req
E_LON_rail_audio_type t [► 615]	Used by: SNVT_rac_ctrl / SNVT_rac_req
E_LON_reg_val_unit t [► 616]	Used by: SNVT_reg_val / SNVT_reg_val_ts
E_LON_sblnd_cmd_source t [► 618]	Used by: SNVT_sblnd_state
E_LON_sblnd_error t [► 619]	Used by: SNVT_sblnd_state
E_LON_scene_config t [► 620]	Used by: SNVT_scene_cfg
E_LON_scene t [► 621]	Used by: SNVT_scene
E_LON_sec_state t [► 622]	Used by: SNVT_sec_state
E_LON_sec_status t [► 623]	Used by: SNVT_sec_status
E_LON_setting t [► 624]	Used by: SNVT_setting
E_LON_switch_state t [► 625]	Used by: SNVT_switch_2
E_LON_telcom_states t [► 627]	Used by: SNVT_telcom
E_LON_therm_mode t [► 628]	Used by: SNVT_therm_mode
E_LON_tilt_dir t [► 628]	Used by: SNVT_ptz
E_LON_unit_temp t [► 629]	Used by: SNVT_pump_sensor
E_LON_valve_mode t [► 629]	Used by: SNVT_valve_mode
E_LON_zoom t [► 630]	Used by: SNVT_ptz

Hardware Types

Data types	Description
ST_LON_Parameter_IN_36B [► 663]	Process Image of the inputs
ST_LON_Parameter_OUT_36B [► 664]	Process Image of the outputs

LON_TYPES

Data types	Description
E_LON_Parameter_Datatypes [► 575]	Enums SNVT types

Structure/AuxiliaryStructure/SNVT_chlr_status

Data types	Description
ST_LON_chlr_state [► 637]	Used by: SNVT_chlr_status

Structure/AuxiliaryStructure/SNVT_clothes_w_c

Data types	Description
ST_LON_action [▶ 637]	Used by: SNVT_clothes_w_c
ST_LON_dry [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_duration [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_function [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_rinse [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_spin [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_wash [▶ 639]	Used by: SNVT_clothes_w_c

Structure/AuxiliaryStructure/SNVT_clothes_w_s

Data types	Description
ST_LON_alarm [▶ 640]	Used by: SNVT_clothes_w_s

Structure/AuxiliaryStructure/SNVT_color_2

Data types	Description
ST_LON_CIE1931_lumen [▶ 641]	Used by: SNVT_color_2
ST_LON_CIE1931_percent [▶ 642]	Used by: SNVT_color_2
ST_LON_color_value [▶ 642]	Used by: SNVT_color_2
ST_LON_RGB [▶ 643]	Used by: SNVT_color_2

Structure/AuxiliaryStructure/SNVT_ctrl_resp

Data types	Description
ST_LON_range [▶ 643]	Used by: SNVT_ctrl_resp
ST_LON_sender [▶ 643]	Used by: SNVT_ctrl_resp

Structure/AuxiliaryStructure/SNVT_dev_fault

Data types	Description
ST_LON_Dev_type1 [▶ 644]	Used by: SNVT_dev_fault
ST_LON_pump_ctrl1 [▶ 644]	Used by: SNVT_dev_fault
ST_LON_valve_pos1 [▶ 645]	Used by: SNVT_dev_fault

Structure/AuxiliaryStructure/SNVT_dev_maint

Data types	Description
ST_LON_Dev_type2 [▶ 646]	Used by: SNVT_dev_maint
ST_LON_pump_ctrl2 [▶ 647]	Used by: SNVT_dev_maint
ST_LON_valve_pos2 [▶ 647]	Used by: SNVT_dev_maint

Structure/AuxiliaryStructure/SNVT_dev_status

Data types	Description
ST_LON_Dev_type3 [▶ 648]	Used by: SNVT_dev_status
ST_LON_pump_ctrl3 [▶ 648]	Used by: SNVT_dev_status
ST_LON_valve_pos3 [▶ 649]	Used by: SNVT_dev_status

Structure/AuxiliaryStructure/SNVT_ex_control

Data types	Description
ST_LON_Control_device_addr [► 650]	Used by: SNVT_ex_control

Structure/AuxiliaryStructure/SNVT_file_req

Data types	Description
ST_LON_addr [► 651]	Used by: SNVT_file_req
ST_LON_dest_address [► 651]	Used by: SNVT_file_req
ST_LON_gp [► 651]	Used by: SNVT_file_req
ST_LON_sn [► 652]	Used by: SNVT_file_req

Structure/AuxiliaryStructure/SNVT_file_status

Data types	Description
ST_LON_address [► 652]	Used by: FB_Write_Address_Table / FB_Read_Address_Table
ST_LON_adr [► 653]	Used by: SNVT_file_status
ST_LON_descriptor [► 653]	Used by: SNVT_file_status

Structure/AuxiliaryStructure/SNVT_lamp_status

Data types	Description
ST_LON_Alarm_actual [► 654]	Used by: SNVT_lamp_status
ST_LON_alarm_previous [► 655]	Used by: SNVT_lamp_status

Structure/AuxiliaryStructure/SNVT_pos_ctrl

Data types	Description
ST_LON_abspos [► 657]	Used by: SNVT_pos_ctrl
ST_LON_Value [► 658]	Used by: SNVT_pos_ctrl

Structure/AuxiliaryStructure/SNVT_rac_ctrl

Data types	Description
ST_LON_addr_dest [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_init [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_talk [► 659]	Used by: SNVT_rac_ctrl
ST_LON_p2m [► 659]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_p2p [► 660]	Used by: SNVT_rac_req / SNVT_rac_ctrl

Structure/AuxiliaryStructure/SNVT_rac_req

Data types	Description
ST_LON_rac_req_addr_dest [► 660]	
ST_LON_rac_req_addr_init [► 661]	

Structure/AuxiliaryStructure/SNVT_switch_2

Data types	Description
ST_LON_setting [► 661]	Used by: SNVT_switch_2

Structure/AuxiliaryStructure/SNVT_time_zone

Data types	Description
ST_LON_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_start_DST [► 663]	Used by: SNVT_time_zone
ST_LON_start_DST [► 663]	Used by: SNVT_time_zone

Structure

Data types	Description
ST_KL6401 [► 667]	Structure for the configuration
ST_LON_AddressTable [► 667]	Used by: FB_Write_Address_Table / FB_Read_Address_Table
ST_LON_ConfigTable [► 668]	Used by: FB_Write_Config_Table / FB_Read_Config_Table
ST_LON_DomainTable [► 669]	Used by: FB_Write_Domain_Table / FB_Read_Domain_Table
ST_LON_SNVT_alarm [► 669]	Used by: SNVT_alarm
ST_LON_SNVT_alarm_2 [► 670]	Used by: SNVT_alarm_2
ST_LON_SNVT_chlr_status [► 670]	Used by: SNVT_chlr_status
ST_LON_SNVT_clothes_w_a [► 671]	Used by: SNVT_clothes_w_a
ST_LON_SNVT_clothes_w_c [► 672]	Used by: SNVT_clothes_w_c
ST_LON_SNVT_clothes_w_m [► 673]	Used by: SNVT_clothes_w_m
ST_LON_SNVT_clothes_w_s [► 673]	Used by: SNVT_clothes_w_s
ST_LON_SNVT_color [► 674]	Used by: SNVT_color
ST_LON_SNVT_color_2 [► 674]	Used by: SNVT_color_2
ST_LON_SNVT_ctrl_req [► 674]	Used by: SNVT_ctrl_req
ST_LON_SNVT_ctrl_resp [► 675]	Used by: SNVT_ctrl_resp
ST_LON_SNVT_currency [► 675]	Used by: SNVT_currency
ST_LON_SNVT_date_event [► 675]	Used by: SNVT_date_event
ST_LON_SNVT_dev_fault [► 676]	Used by: SNVT_dev_fault
ST_LON_SNVT_dev_maint [► 676]	Used by: SNVT_dev_maint
ST_LON_SNVT_dev_status [► 676]	Used by: SNVT_dev_status
ST_LON_SNVT_earth_pos [► 677]	Used by: SNVT_earth_pos
ST_LON_SNVT_elapsed_tm [► 677]	Used by: SNVT_elapsed_tm
ST_LON_SNVT_ent_status [► 678]	Used by: SNVT_ent_status
ST_LON_SNVT_environment [► 679]	Used by: SNVT_environment
ST_LON_SNVT_ex_control [► 680]	Used by: SNVT_ex_control
ST_LON_SNVT_file_pos [► 680]	Used by: SNVT_file_pos
ST_LON_SNVT_file_req [► 680]	Used by: SNVT_file_req
ST_LON_SNVT_file_status [► 681]	Used by: SNVT_file_status
ST_LON_SNVT_geo_loc [► 681]	Used by: SNVT_geo_loc
ST_LON_SNVT_hvac_overid [► 681]	Used by: SNVT_hvac_overid
ST_LON_SNVT_hvac_satsts [► 682]	Used by: SNVT_hvac_satsts
ST_LON_SNVT_hvac_status [► 683]	Used by: SNVT_hvac_status
ST_LON_SNVT_lamp_status [► 683]	Used by: SNVT_lamp_status

Data types	Description
ST_LON_SNVT_log_fx_request [► 683]	Used by: SNVT_log_fx_request
ST_LON_SNVT_log_fx_status [► 684]	Used by: SNVT_log_fx_status
ST_LON_SNVT_log_status [► 684]	Used by: SNVT_log_status
ST_LON_SNVT_muldiv [► 685]	Used by: SNVT_muldiv
ST_LON_SNVT_nv_type [► 685]	Used by: SNVT_nv_type
ST_LON_SNVT_obj_request [► 686]	Used by: SNVT_obj_request
ST_LON_SNVT_obj_status [► 686]	Used by: SNVT_obj_status
ST_LON_SNVT_pos_ctrl [► 688]	Used by: SNVT_pos_ctrl
ST_LON_SNVT_preset [► 688]	Used by: SNVT_preset
ST_LON_SNVT_privacyzone [► 689]	Used by: SNVT_privacyzone
ST_LON_SNVT_ptz [► 689]	Used by: SNVT_ptz
ST_LON_SNVT_pump_sensor [► 689]	Used by: SNVT_pump_sensor
ST_LON_SNVT_pumpset_mn [► 690]	Used by: SNVT_pumpset_mn
ST_LON_SNVT_pumpset_sn [► 691]	Used by: SNVT_pumpset_sn
ST_LON_SNVT_rac_ctrl [► 692]	Used by: SNVT_rac_ctrl
ST_LON_SNVT_rac_req [► 692]	Used by: SNVT_rac_req
ST_LON_SNVT_reg_val [► 693]	Used by: SNVT_rac_val
ST_LON_SNVT_reg_val_ts [► 693]	Used by: SNVT_rac_val_ts
ST_LON_SNVT_sblnd_state [► 694]	Used by: SNVT_sblnd_state
ST_LON_SNVT_scene [► 694]	Used by: SNVT_scene
ST_LON_SNVT_scene_cfg [► 694]	Used by: SNVT_scene_cfg
ST_LON_SNVT_setting [► 695]	Used by: SNVT_setting
ST_LON_SNVT_str_int [► 695]	Used by: SNVT_str_int
ST_LON_SNVT_switch [► 695]	Used by: SNVT_switch
ST_LON_SNVT_switch_2 [► 696]	Used by: SNVT_switch_2
ST_LON_SNVT_temp_setpt [► 696]	Used by: SNVT_temp_setpt
ST_LON_SNVT_time_zone [► 697]	Used by: SNVT_time_zone
ST_LON_SNVT_tod_event [► 697]	Used by: SNVT_tod_event
ST_LON_SNVT_trans_table [► 698]	Used by: SNVT_trans_table
ST_LON_SNVT_zerospan [► 698]	Used by: SNVT_zerospan
str_AddressTable [► 698]	Address table

Data types	Description
E_LON_ERROR [► 557]	Error messages
ST_ExplicitMessage [► 664]	Explicit Message
ST_LON_Communication [► 665]	Connection between "FB_LON_KL6401" and the send/receive function blocks
ST_LON_ParameterInterface [► 666]	LON parameter interface
ST_LON_WriteData [► 666]	Structure of the send buffer
ST_Prm [► 667]	Structure for configuration

4.2.1 Enums

Data types	Description
E_LON_alarm_type_t [► 583]	Used by: SNVT_alarm / SNVT_alarm_2

Data types	Description
E LON_appl_cwc_t [► 584]	Used by: SNVT_clothes_w_c / SNVT_clothes_w_s
E LON_appl_cwp_t [► 585]	Used by: SNVT_clothes_w_c
E LON_appl_cws_t [► 586]	Used by: SNVT_clothes_w_c / SNVT_clothes_w_s
E LON_appl_rin_t [► 586]	Used by: SNVT_clothes_w_c
E LON_boolean_t [► 587]	Used by: SCPTautoAnswer / SCPTcoolingResetEnable / SCPTdefrostHold / SCPTdefrostInternalSchedule / SCPTheatingResetEnable / SCPTHighLimit1Enable / SCPTHighLimit2Enable / SCPTLowLimit1Enable / SCPTLowLimit2Enable / SCPTscheduleInternal / SNVT_clothes_w_c / SNVT_pump_sensor / SNVT_pumpset_mn / SNVT_pumpset_sn
E LON_calendar_type_t [► 587]	Used by: SNVT_time_zone
E LON_cam_act_t [► 587]	Used by: SNVT_pos_ctrl
E LON_cam_func_t [► 588]	Used by: SNVT_pos_ctrl
E LON_chiller_t [► 588]	Used by: SNVT_chlr_status
E LON_color_encoding_t [► 589]	Used by: SNVT_color_2
E LON_config_source_t [► 589]	Used by: SNVT_config_src
E LON_control_resp_t [► 589]	Used by: SNVT_ctrl_resp
E LON_currency_t [► 590]	Used by: SNVT_currency
E LON_days_of_week_t [► 593]	Used by: SCPTtimePeriod / SNVT_date_day / SNVT_time_zone
E LON_defrost_mode_t [► 593]	Used by: SNVT_defr_mode
E LON_defrost_state_t [► 593]	Used by: SNVT_defr_state
E LON_defrost_term_t [► 594]	Used by: SNVT_defr_term
E LON_device_c_mode_t [► 595]	Used by: SNVT_dev_c_mode
E LON_device_select_t [► 596]	Used by: SNVT_dev_fault / SNVT_dev_maint / SNVT_dev_status
E LON_discrete_levels_t [► 596]	Used by: SNVT_clothes_w_c / SNVT_lev_disc
E LON_emerg_t [► 596]	Used by: SNVT_hvac_emerg
E LON_ent_cmd_t [► 597]	Used by: SNVT_ent_state
E LON_ent_opmode_cmd_t [► 598]	Used by: SNVT_ent_opmode / SNVT_ent_status
E LON_evap_t [► 599]	Used by: SNVT_evap_state
E LON_ex_control_t [► 599]	Used by: SNVT_ex_control
E LON_file_request_t [► 599]	Used by: SNVT_file_req
E LON_file_status_t [► 600]	Used by: SNVT_file_status
E LON_fire_indicator_t [► 601]	Used by: SNVT_fire_indcte
E LON_fire_initiator_t [► 601]	Used by: SNVT_fire_init
E LON_fire_test_t [► 602]	Used by: SNVT_fire_test
E LON_flow_direction_t [► 603]	Used by: SNVT_flow_dir
E LON_gfci_status_t [► 603]	Used by: SNVT_gfci_status
E LON_hvac_hvt_t [► 604]	Used by: SNVT_hvac_type
E LON_hvac_overid_t [► 604]	Used by: SNVT_hvac_overid
E LON_hvac_t [► 607]	Used by: SNVT_chlr_status / SNVT_hvac_mode / SNVT_hvac_status
E LON_learn_mode_t [► 608]	Used by: SNVT_preset

Data types	Description
E_LON_log_status t [► 608]	Used by: SCPTlogRecord / SNVT_log_status
E_LON_motor_state t [► 609]	Used by: SNVT_motor_state / SNVT_pumpset_mn
E_LON_nv_type_category t [► 609]	Used by: SNVT_nv_type
E_LON_object_request t [► 610]	Used by: SNVT_obj_request
E_LON_occup t [► 611]	Used by: SNVT_occupancy / SNVT_tod_event
E_LON_override t [► 611]	Used by: SNVT_override
E_LON_pan_dir t [► 612]	Used by: SNVT_ptz
E_LON_priority_level t [► 612]	Used by: SNVT_alarm / SNVT_alarm_2 / SNVT_pumpset_mn
E_LON_privacyzone t [► 613]	Used by: SNVT_privacyzone
E_LON_rail_audio_sensor_type t [► 613]	Used by: SNVT_rac_ctrl / SNVT_rac_req
E_LON_rail_audio_type t [► 615]	Used by: SNVT_rac_ctrl / SNVT_rac_req
E_LON_reg_val_unit t [► 616]	Used by: SNVT_reg_val / SNVT_reg_val_ts
E_LON_sblnd_cmd_source t [► 618]	Used by: SNVT_sblnd_state
E_LON_sblnd_error t [► 619]	Used by: SNVT_sblnd_state
E_LON_scene_config t [► 620]	Used by: SNVT_scene_cfg
E_LON_scene t [► 621]	Used by: SNVT_scene
E_LON_sec_state t [► 622]	Used by: SNVT_sec_state
E_LON_sec_status t [► 623]	Used by: SNVT_sec_status
E_LON_setting t [► 624]	Used by: SNVT_setting
E_LON_switch_state t [► 625]	Used by: SNVT_switch_2
E_LON_telcom_states t [► 627]	Used by: SNVT_telcom
E_LON_therm_mode t [► 628]	Used by: SNVT_therm_mode
E_LON_tilt_dir t [► 628]	Used by: SNVT_ptz
E_LON_unit_temp t [► 629]	Used by: SNVT_pump_sensor
E_LON_valve_mode t [► 629]	Used by: SNVT_valve_mode
E_LON_zoom t [► 630]	Used by: SNVT_ptz

4.2.1.1 E_LON_ERROR

Library error messages



The NV index in the PLC is not compared with the NV index (column Id) in the KS2000 during sending. Wrong/invalid values can be sent if the indices do not match.

Sending without binding does no result in an error message.

```

TYPE E_LON_ERROR :
(
  eLON_no_Error                      := 0,
  eLON_Value_out_of_range            := 1,
  eLON_Terminal_not_ready             := 2,
  eLON_Wrong_SNVT_Typ                := 3,
  eLON_Wrong_wNVIndex                := 4,
  eKL6401_Wrong_Terminal              := 5,
  eKL6401_Error                      := 6,
  eKL6401_Terminal_is_not_initialized := 7,

  eLON_L_star_Out_of_range            := 50,
  eLON_A_star_Out_of_range            := 51,
  eLON_B_star_Out_of_range            := 52,

  eLON_eRequest_Out_of_range          := 55,

```

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eLON_wYear_Out_of_range           := 66,
eLON_wMonth_Out_of_range          := 67,
eLON_wDay_Out_of_range            := 68,
eLON_wHour_Out_of_range           := 69,
eLON_wMinute_Out_of_range         := 70,
eLON_wSecond_Out_of_range         := 71,
eLON_wMillisecond_Out_of_range     := 72,

eLON_rZero_Out_of_range           := 80,
eLON_rSpan_Out_of_range           := 81,

eLON_arrValue01_Out_of_range      := 85,
eLON_arrValue02_Out_of_range      := 86,
eLON_arrValue03_Out_of_range      := 87,
eLON_arrValue04_Out_of_range      := 88,
eLON_arrValue05_Out_of_range      := 89,
eLON_arrValue06_Out_of_range      := 90,
eLON_arrValue07_Out_of_range      := 91,
eLON_arrValue08_Out_of_range      := 92,
eLON_arrValue09_Out_of_range      := 93,

eLON_arrValue10_Out_of_range      := 100,
eLON_arrValue11_Out_of_range      := 101,
eLON_arrValue12_Out_of_range      := 102,
eLON_arrValue13_Out_of_range      := 103,
eLON_arrValue14_Out_of_range      := 104,
eLON_arrValue15_Out_of_range      := 105,
eLON_arrValue16_Out_of_range      := 106,
eLON_arrValue17_Out_of_range      := 107,
eLON_arrValue18_Out_of_range      := 108,
eLON_arrValue19_Out_of_range      := 109,

eLON_arrValue20_Out_of_range      := 115,
eLON_arrValue21_Out_of_range      := 116,
eLON_arrValue22_Out_of_range      := 117,
eLON_arrValue23_Out_of_range      := 118,
eLON_arrValue24_Out_of_range      := 119,
eLON_arrValue25_Out_of_range      := 120,
eLON_arrValue26_Out_of_range      := 121,
eLON_arrValue27_Out_of_range      := 122,
eLON_arrValue28_Out_of_range      := 123,
eLON_arrValue29_Out_of_range      := 124,

eLON_arrValue30_Out_of_range      := 130,
eLON_arrValue31_Out_of_range      := 131,
eLON_arrValue32_Out_of_range      := 132,
eLON_arrValue33_Out_of_range      := 133,
eLON_arrValue34_Out_of_range      := 134,
eLON_arrValue35_Out_of_range      := 135,
eLON_arrValue36_Out_of_range      := 136,
eLON_arrValue37_Out_of_range      := 137,
eLON_arrValue38_Out_of_range      := 138,
eLON_arrValue39_Out_of_range      := 139,
eLON_arrValue40_Out_of_range      := 140,

eLON_087uiDay_Out_of_range        := 145,
eLON_087uiHour_Out_of_range       := 146,
eLON_087uiMinute_Out_of_range     := 147,
eLON_087uiSecond_Out_of_range     := 148,
eLON_087uiMillisecond_Out_of_range := 149,

eLON_ePriority_level_Out_of_range  := 155,
eLON_eAlarm_type_Out_of_range     := 156,

eLON_Currency_Out_of_range        := 160,

eLON_diRw_ptr_Out_of_range        := 165,

eLON_Object_request_Out_of_range  := 170,

eLON_094eLearn_Out_of_range       := 175,
eLON_094uiHour_Out_of_range       := 176,
eLON_094uiMinute_Out_of_range     := 177,
eLON_094uiSecond_Out_of_range     := 178,
eLON_094uiMillisecond_Out_of_range := 179,

eLON_095rValue_Out_of_range       := 185,
eLON_095siState_Out_of_range      := 186,

```



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eLON_byInterp_pts_0_to_1_Out_of_range      := 190,
eLON_byInterp_pts_1_to_2_Out_of_range      := 191,
eLON_byInterp_pts_2_to_3_Out_of_range      := 192,
eLON_byInterp_pts_3_to_4_Out_of_range      := 193,
eLON_byInterp_pts_4_to_5_Out_of_range      := 194,
eLON_byInterp_pts_5_to_6_Out_of_range      := 195,
eLON_byInterp_pts_6_to_0_Out_of_range      := 196,

eLON_rOccupied_cool_Out_of_range           := 200,
eLON_rStandby_cool_Out_of_range            := 201,
eLON_rUnoccupied_cool_Out_of_range         := 202,
eLON_rOccupied_heat_Out_of_range           := 203,
eLON_rStandby_heat_Out_of_range            := 204,
eLON_rUnoccupied_heat_Out_of_range         := 205,

eLON_111rPercent_Out_of_range              := 210,
eLON_111eState_Out_of_range                := 211,

eLON_eMode_Out_of_range                    := 215,
eLON_rHeat_output_primary_Out_of_range     := 216,
eLON_rHeat_output_secondary_Out_of_range   := 217,
eLON_rCool_output_Out_of_range             := 218,
eLON_rEcon_output_Out_of_range             := 219,
eLON_rFan_output_Out_of_range              := 220,

eLON_115eFunction_Out_of_range             := 225,

eLON_eFunction_Out_of_range                := 226,
eLON_rSetting_Out_of_range                 := 227,
eLON_rRotation_Out_of_range                := 228,
eLON_rFade_time_Out_of_range               := 229,
eLON_rDelay_time_Out_of_range              := 230,

eLON_eChlr_run_mode_Out_of_range           := 235,
eLON_echlr_op_mode_Out_of_range            := 236,

eLON_eNext_state_Out_of_range              := 240,
eLON_eCurrent_state_Out_of_range           := 241,

eLON_diSecond_time_offset_Out_of_range     := 245,
eLON_eType_of_description_Out_of_range     := 246,
eLON_byHour_of_start_DST_Out_of_range      := 250,
eLON_byMinute_of_start_DST_Out_of_range    := 251,
eLON_bySecond_of_start_DST_Out_of_range    := 252,
eLON_byHour_of_end_DST_Out_of_range        := 260,
eLON_byMinute_of_end_DST_Out_of_range      := 261,
eLON_bySecond_of_end_DST_Out_of_range      := 262,
eLON_stStart_DST_uiG_day_of_start_DST_Out_of_range := 263,
eLON_stStart_DST_uiJ_day_of_start_DST_Out_of_range := 264,
eLON_stStart_DST_stM_start_DST_byMonth_of_start_DST_Out_of_range := 265,
eLON_stStart_DST_stM_start_DST_byWeek_of_start_DST_Out_of_range := 266,
eLON_stStart_DST_stM_start_DST_eDateday_of_start_DST_Out_of_range := 267,
eLON_stEnd_DST_uiG_day_of_end_DST_Out_of_range := 268,
eLON_stEnd_DST_uiJ_day_of_end_DST_Out_of_range := 269,
eLON_stEnd_DST_stM_end_DST_byMonth_of_end_DST_Out_of_range := 270,
eLON_stEnd_DST_stM_end_DST_byWeek_of_end_DST_Out_of_range := 271,
eLON_stEnd_DST_stM_end_DST_eDateday_of_end_DST_Out_of_range := 272,

eLON_byLatitude_deg_Out_of_range           := 280,
eLON_rLatitude_min_Out_of_range            := 281,
eLON_bylongitude_deg_Out_of_range          := 282,
eLON_rLongitude_min_Out_of_range           := 283,

eLON_byNr_decimals_Out_of_range            := 290,
eLON_eUnit_Out_of_range                    := 291,

eLON_137eUnit_Out_of_range                 := 295,
eLON_137byNr_decimals_Out_of_range         := 296,
eLON_137byStatus_Out_of_range              := 297,
eLON_137uiYear_Out_of_range                := 298,
eLON_137uiMonth_Out_of_range               := 299,
eLON_137uiDay_Out_of_range                 := 300,
eLON_137uiHour_Out_of_range                := 301,
eLON_137uiMinute_Out_of_range              := 302,
eLON_137uiSecond_Out_of_range              := 303,

eLON_bySender_prio_Out_of_range            := 310,

eLON_eStatus_Out_of_range                  := 315,
eLON_stSender_uiID_Out_of_range            := 316,

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eLON_stSender_stRange_uiLower_Out_of_range      := 317,
eLON_stSender_stRange_uiUpper_Out_of_range      := 318,
eLON_uiController_id_Out_of_range               := 319,

eLON_ePan_dir_Out_of_range                      := 325,
eLON_rPan_speed_Out_of_range                   := 326,
eLON_eTilt_dir_Out_of_range                    := 327,
eLON_rTilt_speed_Out_of_range                  := 328,
eLON_eZoom_Out_of_range                       := 329,
eLON_rZoom_speed_Out_of_range                  := 330,

eLON_eAction_Out_of_range                      := 335,

eLON_byController_prio_Out_of_range             := 340,
eLON_152eFunction_Out_of_range                 := 341,
eLON_152eAction_Out_of_range                   := 342,
eLON_stValue_stAbspos_rZoom_Out_of_range       := 343,
eLON_stValue_stAbspos_rTilt_Out_of_range       := 344,
eLON_stValue_stAbspos_rPan_Out_of_range        := 345,

eLON_eMain_pump_Out_of_range                   := 350,
eLON_eBooster_pump_Out_of_range                := 351,
eLON_ePriority_level_Out_of_range              := 352,
eLON_eProcess_ready_Out_of_range              := 353,
eLON_eEmergency_stop_activated_Out_of_range    := 354,
eLON_eMain_pump_drive_enabled_Out_of_range     := 355,
eLON_eBooster_pump_drive_enabled_Out_of_range := 356,
eLON_eMaintenance_required_Out_of_range       := 357,

eLON_eControl_status_Out_of_range              := 365,
eLON_stControl_device_addr_byDomain_length_Out_of_range := 366,
eLON_stControl_device_addr_bySubnet_Out_of_range := 367,
eLON_stControl_device_addr_byNode_Out_of_range := 368,

eLON_rExhaust_temperature_Out_of_range         := 375,
eLON_rExhaust_pressure_Out_of_range            := 376,
eLON_rShaft_seal_purge_pressure_Out_of_range   := 377,
eLON_rSupply_voltage_Out_of_range              := 378,
eLON_eCoolant_flow_low_Out_of_range            := 379,
eLON_eDilution_active_Out_of_range            := 380,
eLON_eBallast_dilution_active_Out_of_range    := 381,
eLON_eInlet_purge_dilution_active_Out_of_range := 382,
eLON_eExhaust_dilution_active_Out_of_range    := 383,
eLON_eDilution_flow_Out_of_range              := 384,
eLON_ePower_supply_on_Out_of_range             := 385,

eLON_rRotational_speed_Out_of_range            := 390,
eLON_rBody_temperature_Out_of_range            := 391,
eLON_rMotor_external_temperature_Out_of_range := 392,
eLON_rMotor_internal_temperature_Out_of_range := 393,
eLON_eMotor_overloaded_Out_of_range            := 394,
eLON_eOil_level_low_Out_of_range               := 395,
eLON_ePhase_imbalance_detected_Out_of_range   := 396,
eLON_rCurrent_usage_Out_of_range               := 397,
eLON_rPower_usage_Out_of_range                 := 398,
eLON_eTemperature_control_Out_of_range         := 399,
eLON_eElectromagnetic_brake_active_Out_of_range := 400,
eLON_eFriction_brake_active_Out_of_range       := 401,
eLON_eGas_brake_active_Out_of_range            := 402,

eLON_164iMilliseconds_Out_of_range            := 410,
eLON_164ePriority_level_Out_of_range           := 411,
eLON_164eAlarm_type_Out_of_range              := 412,

eLON_byType_scope_Out_of_range                 := 420,
eLON_uiType_index_Out_of_range                 := 421,
eLON_eType_category_Out_of_range              := 422,
eLON_byType_length_Out_of_range               := 423,

eLON_eCmd_fb_Out_of_range                     := 430,

eLON_byManufacturer_Out_of_range               := 435,

eLON_eDevice_select_Out_of_range               := 440,

eLON_stPos_eFunction_Out_of_range              := 445,
eLON_stPos_rSetting_Out_of_range               := 446,
eLON_stPos_rRotation_Out_of_range              := 447,
eLON_eCmd_source_Out_of_range                 := 448,
eLON_eError_code_Out_of_range                 := 449,

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eLON_181stAddr_talk_eAudio_sensor_type_Out_of_range      := 455,
eLON_181stAddr_talk_byCar_id_Out_of_range                 := 456,
eLON_181stAddr_talk_byLocation_Out_of_range               := 457,
eLON_181stAddr_talk_byUnit_id_Out_of_range               := 458,
eLON_181stAddr_init_eAudio_sensor_type_Out_of_range      := 459,
eLON_181stAddr_init_byCar_id_Out_of_range                 := 450,
eLON_181stAddr_init_byLocation_Out_of_range               := 461,
eLON_181stAddr_init_byUnit_id_Out_of_range               := 462,
eLON_181eAudio_type_Out_of_range                         := 463,
eLON_181byAudio_line_Out_of_range                        := 464,
eLON_181stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range := 465,
eLON_181stAddr_dest_stP2p_byCar_id_Out_of_range           := 466,
eLON_181stAddr_dest_stP2p_byLocation_Out_of_range         := 467,
eLON_181stAddr_dest_stP2p_byUnit_id_Out_of_range          := 468,

eLON_stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range    := 475,
eLON_stAddr_dest_stP2p_byCar_id_Out_of_range              := 476,
eLON_stAddr_dest_stP2p_byLocation_Out_of_range            := 477,
eLON_stAddr_dest_stP2p_byUnit_id_Out_of_range             := 478,
eLON_stAddr_init_eAudio_sensor_type_Out_of_range          := 479,
eLON_stAddr_init_byCar_id_Out_of_range                    := 480,
eLON_stAddr_init_byLocation_Out_of_range                  := 481,
eLON_stAddr_init_byUnit_id_Out_of_range                   := 482,
eLON_eAudio_type_Out_of_range                             := 483,

eLON_eCycle_Out_of_range                                  := 490,
eLON_eSubcycle_Out_of_range                               := 491,
eLON_stFunction_eProgram_Out_of_range                     := 492,
eLON_stFunction_stWash_eLoad_level_Out_of_range           := 493,
eLON_stFunction_stWash_ePrewash_Out_of_range              := 494,
eLON_stFunction_stRinse_eOption_Out_of_range              := 495,
eLON_stFunction_stRinse_byRepeat_Out_of_range             := 496,
eLON_stFunction_stSpin_eHold_Out_of_range                 := 497,
eLON_stFunction_stDry_byTemp_Out_of_range                 := 498,
eLON_stFunction_stDry_stDuration_eDryness_Out_of_range    := 499,

eLON_186eCycle_Out_of_range                               := 505,
eLON_186eSubcycle_Out_of_range                            := 506,
eLON_stWasher_command_data_eCycle_Out_of_range            := 507,
eLON_stWasher_command_data_eSubcycle_Out_of_range         := 508,
eLON_stWasher_command_data_stFunction_eProgram_Out_of_range := 509,
eLON_stWasher_command_data_stFunction_stWash_eLoad_level_Out_of_range := 510,
eLON_stWasher_command_data_stFunction_stWash_ePrewash_Out_of_range := 511,
eLON_stWasher_command_data_stFunction_stRinse_eOption_Out_of_range := 512,
eLON_stWasher_command_data_stFunction_stRinse_byRepeat_Out_of_range := 513,
eLON_stWasher_command_data_stFunction_stSpin_eHold_Out_of_range := 514,
eLON_stWasher_command_data_stFunction_stDry_byTemp_Out_of_range := 515,
eLON_stWasher_command_data_stFunction_stDry_stDuration_eDryness_Out_of_range := 516,

eLON_eState_Out_of_range                                  := 518,
eLON_stSetting_rValue_Out_of_range                        := 519,
eLON_stSetting_rChange_Out_of_range                       := 520,
eLON_stSetting_rMultiplier_Out_of_range                   := 521,
eLON_stSetting_iAngle_Out_of_range                        := 522,
eLON_stSetting_byGroup_number_Out_of_range                := 523,
eLON_stSetting_siFan_level_Out_of_range                   := 524,

eLON_stColor_value_stCIE1931_lumen_rX_Out_of_range       := 525,
eLON_stColor_value_stCIE1931_lumen_rY_Out_of_range       := 526,
eLON_stColor_value_stCIE1931_lumen_udiAbsolute_Y_Out_of_range := 527,
eLON_stColor_value_stCIE1931_percent_rX_Out_of_range     := 528,
eLON_stColor_value_stCIE1931_percent_rY_Out_of_range     := 529,
eLON_stColor_value_stCIE1931_percent_rPercent_Y_Out_of_range := 530,
eLON_stColor_value_uiColor_temperature_Out_of_range      := 531,

eLON_191eStatus_Out_of_range                              := 535,
eLON_uiLog_number_Out_of_range                            := 536,
eLON_rLevel_Out_of_range                                  := 537,
eLON_stCurrent_notify_time_rHundredths_Out_of_range      := 538,
eLON_stPrevious_notify_time_rHundredths_Out_of_range      := 539,

eLON_rHundredths_Out_of_range                             := 545,

eLON_stStart_time_rHundredths_Out_of_range                := 550,
eLON_stEnd_time_rHundredths_Out_of_range                  := 551,

eLON_rComplete_Out_of_range                              := 565,

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eLON_stTime_actual_rHundredths_Out_of_range      := 570,
eLON_stTime_previous_rHundredths_Out_of_range    := 571,

eLON_lrEnergy_Out_of_range                       := 585,
eLON_rPowerFactor_Out_of_range                   := 586,
eLON_rPower_Out_of_range                         := 587,
eLON_rBallastTemp_Out_of_range                   := 588,

eLON_lrLongitude_Out_of_range                    := 595,
eLON_lrLatitude_Out_of_range                     := 596
)
END_TYPE

```

eLON_no_Error: No error is pending.

eLON_Value_out_of_range: The input variable "Value" is outside the permitted range. The value was not sent. "Value" can have different formats with corresponding prefix (e.g. LREAL = lValue).

eLON_Terminal_not_ready: The function block "FB_LON_KL6401" passes through an initialization step chain (query terminal type, query firmware etc.) when the PLC is started. This message is issued as long as the initialization is in progress. If an error is pending after a PLC reset, the controller should be de-energized once.

eLON_Wrong_SNVT_Typ: The received SNVT type does not match the SNVT type of the addressed NV index (input variable "wld").

eLON_Wrong_wNVIndex: Incorrect NV index.

eKL6401_Wrong_Terminal: No KL6401 was detected.

eKL6401_Error: The function block "FB_LON_KL6401" has an error. The error code is shown at output "dwErrorKL".

eKL6401_Terminal_is_not_initialized: The terminal is not initialized. This message usually means that there is no connection to the terminal. Terminal linked to the variables in the System Manager? Terminal plugged in incorrectly? Everything corrected, everything translated and re-read into the System Manager?

eLON_L_star_Out_of_range: SNVT 70 / The input variable "stValue.L_star" is outside the permitted range. The value was not sent.

eLON_A_star_Out_of_range: SNVT 70 / The input variable "stValue.A_star" is outside the permitted range. The value was not sent.

eLON_B_star_Out_of_range: SNVT 70 / The input variable "stValue.B_star" is outside the permitted range. The value was not sent.

eLON_eRequest_Out_of_range: SNVT 73 / The input variable "stValue.eRequest" is outside the permitted range. The value was not sent.

eLON_wYear_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wYear" is outside the permitted range. The value was not sent.

eLON_wMonth_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wMonth" is outside the permitted range. The value was not sent.

eLON_wDay_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wDay" is outside the permitted range. The value was not sent.

eLON_wHour_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wHour" is outside the permitted range. The value was not sent.

eLON_wMinute_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wMinute" is outside the permitted range. The value was not sent.

eLON_wSecond_Out_of_range: SNVT 084 / 088 / The input variable "stValue.wSecond" is outside the permitted range. The value was not sent.

eLON_wMillisecond_Out_of_range: SNVT 73 / The input variable "stValue.wMillisecond" is outside the permitted range. The value was not sent.

eLON_rZero_Out_of_range: SNVT 085 / The input variable "stValue.rZero" is outside the permitted range. The value was not sent.

eLON_rSpan_Out_of_range: SNVT 085 / The input variable "stValue.rSpan" is outside the permitted range. The value was not sent.

eLON_arrValue01_Out_of_range: SNVT 086 / The input variable "arrValue[1]" is outside the permitted range. The value was not sent.

eLON_arrValue02_Out_of_range: SNVT 086 / The input variable "arrValue[2]" is outside the permitted range. The value was not sent.

eLON_arrValue03_Out_of_range: SNVT 086 / The input variable "arrValue[3]" is outside the permitted range. The value was not sent.

eLON_arrValue04_Out_of_range: SNVT 086 / The input variable "arrValue[4]" is outside the permitted range. The value was not sent.

eLON_arrValue05_Out_of_range: SNVT 086 / The input variable "arrValue[5]" is outside the permitted range. The value was not sent.

eLON_arrValue06_Out_of_range: SNVT 086 / The input variable "arrValue[6]" is outside the permitted range. The value was not sent.

eLON_arrValue07_Out_of_range: SNVT 086 / The input variable "arrValue[7]" is outside the permitted range. The value was not sent.

eLON_arrValue08_Out_of_range: SNVT 086 / The input variable "arrValue[8]" is outside the permitted range. The value was not sent.

eLON_arrValue09_Out_of_range: SNVT 086 / The input variable "arrValue[9]" is outside the permitted range. The value was not sent.

eLON_arrValue10_Out_of_range: SNVT 086 / The input variable "arrValue[10]" is outside the permitted range. The value was not sent.

eLON_arrValue11_Out_of_range: SNVT 086 / The input variable "arrValue[11]" is outside the permitted range. The value was not sent.

eLON_arrValue12_Out_of_range: SNVT 086 / The input variable "arrValue[12]" is outside the permitted range. The value was not sent.

eLON_arrValue13_Out_of_range: SNVT 086 / The input variable "arrValue[13]" is outside the permitted range. The value was not sent.

eLON_arrValue14_Out_of_range: SNVT 086 / The input variable "arrValue[14]" is outside the permitted range. The value was not sent.

eLON_arrValue15_Out_of_range: SNVT 086 / The input variable "arrValue[15]" is outside the permitted range. The value was not sent.

eLON_arrValue16_Out_of_range: SNVT 086 / The input variable "arrValue[16]" is outside the permitted range. The value was not sent.

eLON_arrValue17_Out_of_range: SNVT 086 / The input variable "arrValue[17]" is outside the permitted range. The value was not sent.

eLON_arrValue18_Out_of_range: SNVT 086 / The input variable "arrValue[18]" is outside the permitted range. The value was not sent.

eLON_arrValue19_Out_of_range: SNVT 086 / The input variable "arrValue[19]" is outside the permitted range. The value was not sent.

eLON_arrValue20_Out_of_range: SNVT 086 / The input variable "arrValue[20]" is outside the permitted range. The value was not sent.

eLON_arrValue21_Out_of_range: SNVT 086 / The input variable "arrValue[21]" is outside the permitted range. The value was not sent.

eLON_arrValue22_Out_of_range: SNVT 086 / The input variable "arrValue[22]" is outside the permitted range. The value was not sent.

eLON_arrValue23_Out_of_range: SNVT 086 / The input variable "arrValue[23]" is outside the permitted range. The value was not sent.

eLON_arrValue24_Out_of_range: SNVT 086 / The input variable "arrValue[24]" is outside the permitted range. The value was not sent.

eLON_arrValue25_Out_of_range: SNVT 086 / The input variable "arrValue[25]" is outside the permitted range. The value was not sent.

eLON_arrValue26_Out_of_range: SNVT 086 / The input variable "arrValue[26]" is outside the permitted range. The value was not sent.

eLON_arrValue27_Out_of_range: SNVT 086 / The input variable "arrValue[27]" is outside the permitted range. The value was not sent.

eLON_arrValue28_Out_of_range: SNVT 086 / The input variable "arrValue[28]" is outside the permitted range. The value was not sent.

eLON_arrValue29_Out_of_range: SNVT 086 / The input variable "arrValue[29]" is outside the permitted range. The value was not sent.

eLON_arrValue30_Out_of_range: SNVT 086 / The input variable "arrValue[30]" is outside the permitted range. The value was not sent.

eLON_arrValue31_Out_of_range: SNVT 086 / The input variable "arrValue[31]" is outside the permitted range. The value was not sent.

eLON_arrValue32_Out_of_range: SNVT 086 / The input variable "arrValue[32]" is outside the permitted range. The value was not sent.

eLON_arrValue33_Out_of_range: SNVT 086 / The input variable "arrValue[33]" is outside the permitted range. The value was not sent.

eLON_arrValue34_Out_of_range: SNVT 086 / The input variable "arrValue[34]" is outside the permitted range. The value was not sent.

eLON_arrValue35_Out_of_range: SNVT 086 / The input variable "arrValue[35]" is outside the permitted range. The value was not sent.

eLON_arrValue36_Out_of_range: SNVT 086 / The input variable "arrValue[36]" is outside the permitted range. The value was not sent.

eLON_arrValue37_Out_of_range: SNVT 086 / The input variable "arrValue[37]" is outside the permitted range. The value was not sent.

eLON_arrValue38_Out_of_range: SNVT 086 / The input variable "arrValue[38]" is outside the permitted range. The value was not sent.

eLON_arrValue39_Out_of_range: SNVT 086 / The input variable "arrValue[39]" is outside the permitted range. The value was not sent.

eLON_arrValue40_Out_of_range: SNVT 086 / The input variable "arrValue[40]" is outside the permitted range. The value was not sent.

eLON_087uiDay_Out_of_range: SNVT 087 / The input variable "stValue.uiDay" is outside the permitted range. The value was not sent.

eLON_087uiHour_Out_of_range: SNVT 087 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.

eLON_087uiMinute_Out_of_range: SNVT 087 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.

eLON_087uiSecond_Out_of_range: SNVT 087 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.

eLON_087uiMillisecond_Out_of_range: SNVT 087 / The input variable "stValue.uiMillisecond" is outside the permitted range. The value was not sent.

eLON_ePriority_level_Out_of_range: SNVT 088 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.

eLON_eAlarm_type_Out_of_range: SNVT 088 / The input variable "stValue.eAlarm_type" is outside the permitted range. The value was not sent.

eLON_Currency_Out_of_range: SNVT 089 / The input variable "stValue.Currency" is outside the permitted range. The value was not sent.

eLON_diRw_ptr_Out_of_range: SNVT 090 / The input variable "stValue.diRw_ptr" is outside the permitted range. The value was not sent.

eLON_Object_request_Out_of_range: SNVT 092 / The input variable "stValue.Object_request" is outside the permitted range. The value was not sent.

eLON_094eLearn_Out_of_range: SNVT 094 / The input variable "stValue.eLearn" is outside the permitted range. The value was not sent.

eLON_094uiHour_Out_of_range: SNVT 094 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.

eLON_094uiMinute_Out_of_range: SNVT 094 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.

eLON_094uiSecond_Out_of_range: SNVT 094 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.

eLON_094uiMillisecond_Out_of_range: SNVT 094 / The input variable "stValue.uiMillisecond" is outside the permitted range. The value was not sent.

eLON_095rValue_Out_of_range: SNVT 095 / The input variable "stValue.rValue" is outside the permitted range. The value was not sent.

eLON_095siState_Out_of_range: SNVT 095 / The input variable "stValue.siState" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_0_to_1_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_0_to_1" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_1_to_2_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_1_to_2" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_2_to_3_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_2_to_3" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_3_to_4_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_3_to_4" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_4_to_5_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_4_to_5" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_5_to_6_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_5_to_6" is outside the permitted range. The value was not sent.

eLON_byInterp_pts_6_to_0_Out_of_range: SNVT 096 / The input variable "stValue.byInterp_pts_6_to_0" is outside the permitted range. The value was not sent.

eLON_rOccupied_cool_Out_of_range: SNVT 106 / The input variable "stValue.rOccupied_cool" is outside the permitted range. The value was not sent.

eLON_rStandby_cool_Out_of_range: SNVT 106 / The input variable "stValue.rStandby_cool" is outside the permitted range. The value was not sent.

eLON_rUnoccupied_cool_Out_of_range: SNVT 106 / The input variable "stValue.rUnoccupied_cool" is outside the permitted range. The value was not sent.

eLON_rOccupied_heat_Out_of_range: SNVT 106 / The input variable "stValue.rOccupied_heat" is outside the permitted range. The value was not sent.

eLON_rStandby_heat_Out_of_range: SNVT 106 / The input variable "stValue.rStandby_heat" is outside the permitted range. The value was not sent.

eLON_rUnoccupied_heat_Out_of_range: SNVT 106 / The input variable "stValue.rUnoccupied_heat" is outside the permitted range. The value was not sent.

eLON_111rPercent_Out_of_range: SNVT 111 / The input variable "stValue.rPercent" is outside the permitted range. The value was not sent.

eLON_111eState_Out_of_range: SNVT 111 / The input variable "stValue.eState" is outside the permitted range. The value was not sent.

eLON_eMode_Out_of_range: SNVT 112 / The input variable "stValue.eMode" is outside the permitted range. The value was not sent.

eLON_rHeat_output_primary_Out_of_range: SNVT 112 / The input variable "stValue.rHeat_output_primary" is outside the permitted range. The value was not sent.

eLON_rHeat_output_secondary_Out_of_range: SNVT 112 / The input variable "stValue.rHeat_output_secondary" is outside the permitted range. The value was not sent.

eLON_rCool_output_Out_of_range: SNVT 112 / The input variable "stValue.rCool_output" is outside the permitted range. The value was not sent.

eLON_rEcon_output_Out_of_range: SNVT 112 / The input variable "stValue.rEcon_output" is outside the permitted range. The value was not sent.

eLON_rFan_output_Out_of_range: SNVT 112 / The input variable "stValue.rFan_output" is outside the permitted range. The value was not sent.

eLON_115eFunction_Out_of_range: SNVT 115 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.

eLON_eFunction_Out_of_range: SNVT 116 / 117 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.

eLON_rSetting_Out_of_range: SNVT 116 / 117 / The input variable "stValue.rSetting" is outside the permitted range. The value was not sent.

eLON_rRotation_Out_of_range: SNVT 116 / 117 / The input variable "stValue.rRotation" is outside the permitted range. The value was not sent.

eLON_rFade_time_Out_of_range: SNVT 116 / The input variable "stValue.rFade_time" is outside the permitted range. The value was not sent.

eLON_rDelay_time_Out_of_range: SNVT 116 / The input variable "stValue.rDelay_time" is outside the permitted range. The value was not sent.

eLON_eChlr_run_mode_Out_of_range: SNVT 127 / The input variable "stValue.eChlr_run_mode" is outside the permitted range. The value was not sent.

eLON_echlr_op_mode_Out_of_range: SNVT 127 / The input variable "stValue.echlr_op_mode" is outside the permitted range. The value was not sent.

eLON_eNext_state_Out_of_range: SNVT 128 / The input variable "stValue.eNext_state" is outside the permitted range. The value was not sent.

eLON_eCurrent_state_Out_of_range: SNVT 128 / The input variable "stValue.eCurrent_state" is outside the permitted range. The value was not sent.

eLON_diSecond_time_offset_Out_of_range: SNVT 134 / The input variable "stValue.diSecond_time_offset" is outside the permitted range. The value was not sent.

eLON_eType_of_description_Out_of_range: SNVT 134 / The input variable "stValue.eType_of_description" is outside the permitted range. The value was not sent.

eLON_byHour_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.byHour_of_start_DST" is outside the permitted range. The value was not sent.

eLON_byMinute_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.byMinute_of_start_DST" is outside the permitted range. The value was not sent.

eLON_bySecond_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.bySecond_of_start_DST" is outside the permitted range. The value was not sent.

eLON_byHour_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.byHour_of_end_DST" is outside the permitted range. The value was not sent.

eLON_byMinute_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.byMinute_of_end_DST" is outside the permitted range. The value was not sent.

eLON_bySecond_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.bySecond_of_end_DST" is outside the permitted range. The value was not sent.

eLON_stStart_DST_uiG_day_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.stStart_DST.uiG_day_of_start_DST" is outside the permitted range. The value was not sent.

eLON_stStart_DST_uiJ_day_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.stStart_DST.uiJ_day_of_start_DST" is outside the permitted range. The value was not sent.

eLON_stStart_DST_stM_start_DST_byMonth_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.byMonth_of_start_DST" is outside the permitted range. The value was not sent.

eLON_stStart_DST_stM_start_DST_byWeek_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.byWeek_of_start_DST" is outside the permitted range. The value was not sent.

eLON_stStart_DST_stM_start_DST_eDateday_of_start_DST_Out_of_range: SNVT 134 / The input variable "stValue.stStart_DST.stM_start_DST.eDateday_of_start_DST" is outside the permitted range. The value was not sent.

eLON_stEnd_DST_uiG_day_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.stEnd_DST.uiG_day_of_end_DST" is outside the permitted range. The value was not sent.

eLON_stEnd_DST_uiJ_day_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.stEnd_DST.uiJ_day_of_end_DST" is outside the permitted range. The value was not sent.

eLON_stEnd_DST_stM_end_DST_byMonth_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.byMonth_of_end_DST" is outside the permitted range. The value was not sent.

eLON_stEnd_DST_stM_end_DST_byWeek_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.byWeek_of_end_DST" is outside the permitted range. The value was not sent.

eLON_stEnd_DST_stM_end_DST_eDateday_of_end_DST_Out_of_range: SNVT 134 / The input variable "stValue.stEnd_DST.stM_end_DST.eDateday_of_end_DST" is outside the permitted range. The value was not sent.

eLON_byLatitude_deg_Out_of_range: SNVT 135 / The input variable "stValue.byLatitude" is outside the permitted range. The value was not sent.

eLON_rLatitude_min_Out_of_range: SNVT 135 / The input variable "stValue.rLatitude" is outside the permitted range. The value was not sent.

eLON_bylongitude_deg_Out_of_range: SNVT 135 / The input variable "stValue.bylongitude_deg" is outside the permitted range. The value was not sent.

eLON_rLongitude_min_Out_of_range: SNVT 135 / The input variable "stValue.rLongitude_min" is outside the permitted range. The value was not sent.

eLON_byNr_decimals_Out_of_range: SNVT 136 / The input variable "stValue.byNr_decimals" is outside the permitted range. The value was not sent.

eLON_eUnit_Out_of_range: SNVT 136 / The input variable "stValue.eUnit" is outside the permitted range. The value was not sent.

eLON_137eUnit_Out_of_range: SNVT 137 / The input variable "stValue.eUnit" is outside the permitted range. The value was not sent.

eLON_137byNr_decimals_Out_of_range: SNVT 137 / The input variable "stValue.byNr_decimals" is outside the permitted range. The value was not sent.

eLON_137byStatus_Out_of_range: SNVT 137 / The input variable "stValue.byStatus" is outside the permitted range. The value was not sent.

eLON_137uiYear_Out_of_range: SNVT 137 / The input variable "stValue.uiYear" is outside the permitted range. The value was not sent.

eLON_137uiMonth_Out_of_range: SNVT 137 / The input variable "stValue.uiMonth" is outside the permitted range. The value was not sent.

eLON_137uiDay_Out_of_range: SNVT 137 / The input variable "stValue.uiDay" is outside the permitted range. The value was not sent.

eLON_137uiHour_Out_of_range: SNVT 137 / The input variable "stValue.uiHour" is outside the permitted range. The value was not sent.

eLON_137uiMinute_Out_of_range: SNVT 137 / The input variable "stValue.uiMinute" is outside the permitted range. The value was not sent.

eLON_137uiSecond_Out_of_range: SNVT 137 / The input variable "stValue.uiSecond" is outside the permitted range. The value was not sent.

eLON_bySender_prio_Out_of_range: SNVT 148 / The input variable "stValue.bySender_prio" is outside the permitted range. The value was not sent.

eLON_eStatus_Out_of_range: SNVT 149 / The input variable "stValue.eStatus" is outside the permitted range. The value was not sent.

eLON_stSender_uiID_Out_of_range: SNVT 149 / The input variable "stValue.stSender.uiID" is outside the permitted range. The value was not sent.

eLON_stSender_stRange_uiLower_Out_of_range: SNVT 149 / The input variable "stValue.stSender.stRange.uiLower" is outside the permitted range. The value was not sent.

eLON_stSender_stRange_uiUpper_Out_of_range: SNVT 149 / The input variable "stValue.stSender.stRange.uiUpper" is outside the permitted range. The value was not sent.

eLON_uiController_id_Out_of_range: SNVT 149 / The input variable "stValue.uiController" is outside the permitted range. The value was not sent.

eLON_ePan_dir_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_rPan_speed_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_eTilt_dir_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_rTilt_speed_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_eZoom_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_rZoom_speed_Out_of_range: SNVT 150 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_eAction_Out_of_range: SNVT 151 / The input variable "stValue.eAction" is outside the permitted range. The value was not sent.

eLON_byController_prio_Out_of_range: SNVT 152 / The input variable "stValue.byController" is outside the permitted range. The value was not sent.

eLON_152eFunction_Out_of_range: SNVT 152 / The input variable "stValue.eFunction" is outside the permitted range. The value was not sent.

eLON_152eAction_Out_of_range: SNVT 152 / The input variable "stValue.eAction" is outside the permitted range. The value was not sent.

eLON_stValue_stAbspos_rZoom_Out_of_range: SNVT 152 / The input variable "stValue.stValue.stAbspos.rZoom" is outside the permitted range. The value was not sent.

eLON_stValue_stAbspos_rTilt_Out_of_range: SNVT 152 / The input variable "stValue.stValue.stAbspos.rTilt" is outside the permitted range. The value was not sent.

eLON_stValue_stAbspos_rPan_Out_of_range: SNVT 152 / The input variable "stValue.stValue.stAbspos.rPan" is outside the permitted range. The value was not sent.

eLON_eMain_pump_Out_of_range: SNVT 156 / The input variable "stValue.eMain_pump" is outside the permitted range. The value was not sent.

eLON_eBooster_pump_Out_of_range: SNVT 156 / The input variable "stValue.eBooster_pump" is outside the permitted range. The value was not sent.

eLON_ePriority_level_Out_of_range: SNVT 156 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.

eLON_eProcess_ready_Out_of_range: SNVT 156 / The input variable "stValue.eProcess_ready" is outside the permitted range. The value was not sent.

eLON_eEmergency_stop_activated_Out_of_range: SNVT 156 / The input variable "stValue.eEmergency_stop_activated" is outside the permitted range. The value was not sent.

eLON_eMain_pump_drive_enabled_Out_of_range: SNVT 156 / The input variable "stValue.eMain_pump_drive_enabled" is outside the permitted range. The value was not sent.

eLON_eBooster_pump_drive_enabled_Out_of_range: SNVT 156 / The input variable "stValue.eBooster_pump_drive_enabled" is outside the permitted range. The value was not sent.

eLON_eMaintenance_required_Out_of_range: SNVT 156 / The input variable "stValue.eMaintenance_required" is outside the permitted range. The value was not sent.

eLON_eControl_status_Out_of_range: SNVT 157 / The input variable "stValue.eControl_status" is outside the permitted range. The value was not sent.

eLON_stControl_device_addr_byDomain_length_Out_of_range: SNVT 157 / The input variable "stValue.stControl_device_addr.byDomain_length" is outside the permitted range. The value was not sent.

eLON_stControl_device_addr_bySubnet_Out_of_range: SNVT 157 / The input variable "stValue.stControl_device_addr.bySubnet" is outside the permitted range. The value was not sent.

eLON_stControl_device_addr_byNode_Out_of_range: SNVT 157 / The input variable "stValue.stControl_device_addr.byNode" is outside the permitted range. The value was not sent.

eLON_rExhaust_temperature_Out_of_range: SNVT 158 / The input variable "stValue.rExhaust_temperature" is outside the permitted range. The value was not sent.

eLON_rExhaust_pressure_Out_of_range: SNVT 158 / The input variable "stValue.rExhaust_pressure" is outside the permitted range. The value was not sent.

eLON_rShaft_seal_purge_pressure_Out_of_range: SNVT 158 / The input variable "stValue.rShaft_seal_purge_pressure" is outside the permitted range. The value was not sent.

eLON_rSupply_voltage_Out_of_range: SNVT 158 / The input variable "stValue.rSupply_voltage" is outside the permitted range. The value was not sent.

eLON_eCoolant_flow_low_Out_of_range: SNVT 158 / The input variable "stValue.eCoolant_flow_low" is outside the permitted range. The value was not sent.

eLON_eDilution_active_Out_of_range: SNVT 158 / The input variable "stValue.eDilution_active" is outside the permitted range. The value was not sent.

eLON_eBallast_dilution_active_Out_of_range: SNVT 158 / The input variable "stValue.eBallast_dilution_active" is outside the permitted range. The value was not sent.

eLON_eInlet_purge_dilution_active_Out_of_range: SNVT 158 / The input variable "stValue.eInlet_purge_dilution_active" is outside the permitted range. The value was not sent.

eLON_eExhaust_dilution_active_Out_of_range: SNVT 158 / The input variable "stValue.eExhaust_dilution_active" is outside the permitted range. The value was not sent.

eLON_eDilution_flow_Out_of_range: SNVT 158 / The input variable "stValue.eDilution_flow" is outside the permitted range. The value was not sent.

eLON_ePower_supply_on_Out_of_range: SNVT 158 / The input variable "stValue.ePower_supply_on" is outside the permitted range. The value was not sent.

eLON_rRotational_speed_Out_of_range: SNVT 159 / The input variable "stValue.rRotational_speed" is outside the permitted range. The value was not sent.

eLON_rBody_temperature_Out_of_range: SNVT 159 / The input variable "stValue.rBody" is outside the permitted range. The value was not sent.

eLON_rMotor_external_temperature_Out_of_range: SNVT 159 / The input variable "stValue.rMotor_external_temperature" is outside the permitted range. The value was not sent.

eLON_rMotor_internal_temperature_Out_of_range: SNVT 159 / The input variable "stValue.eMotor_overloaded" is outside the permitted range. The value was not sent.

eLON_eMotor_overloaded_Out_of_range: SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_eOil_level_low_Out_of_range: SNVT 159 / The input variable "stValue.ePhase_imbalance_detected" is outside the permitted range. The value was not sent.

eLON_ePhase_imbalance_detected_Out_of_range: SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_rCurrent_usage_Out_of_range: SNVT 159 / The input variable "stValue.rCurrent_usage" is outside the permitted range. The value was not sent.

eLON_rPower_usage_Out_of_range: SNVT 159 / The input variable "stValue.Power_usage" is outside the permitted range. The value was not sent.

eLON_eTemperature_control_Out_of_range: SNVT 159 / The input variable "stValue.eElectromagnetic_brake_active" is outside the permitted range. The value was not sent.

eLON_eElectromagnetic_brake_active_Out_of_range: SNVT 159 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_eFriction_brake_active_Out_of_range: SNVT 159 / The input variable "stValue.eFriction_brake_active" is outside the permitted range. The value was not sent.

eLON_eGas_brake_active_Out_of_range: SNVT 159 / The input variable "stValue.eGas_brake_active" is outside the permitted range. The value was not sent.

eLON_164iMilliseconds_Out_of_range: SNVT 164 / The input variable "stValue.iMilliseconds" is outside the permitted range. The value was not sent.

eLON_164ePriority_level_Out_of_range: SNVT 164 / The input variable "stValue.ePriority_level" is outside the permitted range. The value was not sent.

eLON_164eAlarm_type_Out_of_range: SNVT 164 / The input variable "stValue.eAlarm" is outside the permitted range. The value was not sent.

eLON_byType_scope_Out_of_range: SNVT 166 / The input variable "stValue.byType_scope" is outside the permitted range. The value was not sent.

eLON_uiType_index_Out_of_range: SNVT 166 / The input variable "stValue.uiType_index" is outside the permitted range. The value was not sent.

eLON_eType_category_Out_of_range: SNVT 166 / The input variable "stValue.eType_category" is outside the permitted range. The value was not sent.

eLON_byType_length_Out_of_range: SNVT 166 / The input variable "stValue.byType" is outside the permitted range. The value was not sent.

eLON_eCmd_fb_Out_of_range: SNVT 170 / The input variable "stValue.eCmd_fb" is outside the permitted range. The value was not sent.

eLON_byManufacturer_Out_of_range: SNVT 172 / The input variable "stValue.byManufacturer" is outside the permitted range. The value was not sent.

eLON_eDevice_select_Out_of_range: SNVT 175 / The input variable "stValue.eDevice_select" is outside the permitted range. The value was not sent.

eLON_stPos_eFunction_Out_of_range: SNVT 180 / The input variable "stValue.stPos_eFunction" is outside the permitted range. The value was not sent.

eLON_stPos_rSetting_Out_of_range: SNVT 180 / The input variable "stValue.stPos.rSetting" is outside the permitted range. The value was not sent.

eLON_stPos_rRotation_Out_of_range: SNVT 180 / The input variable "stValue.stPos.rRotation" is outside the permitted range. The value was not sent.

eLON_eCmd_source_Out_of_range: SNVT 180 / The input variable "stValue.eCmd_source" is outside the permitted range. The value was not sent.

eLON_eError_code_Out_of_range: SNVT 180 / The input variable "stValue._eError_code" is outside the permitted range. The value was not sent.

eLON_181stAddr_talk_eAudio_sensor_type_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_talk.eAudio_sensor" is outside the permitted range. The value was not sent.

eLON_181stAddr_talk_byCar_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_talk.byCar_id" is outside the permitted range. The value was not sent.

eLON_181stAddr_talk_byLocation_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_talk.byLocation" is outside the permitted range. The value was not sent.

eLON_181stAddr_talk_byUnit_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_talk.byUnit" is outside the permitted range. The value was not sent.

eLON_181stAddr_init_eAudio_sensor_type_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_init.eAudio_sensor_type" is outside the permitted range. The value was not sent.

eLON_181stAddr_init_byCar_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_init.byCar" is outside the permitted range. The value was not sent.

eLON_181stAddr_init_byLocation_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_init.byLocation" is outside the permitted range. The value was not sent.

eLON_181stAddr_init_byUnit_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_init.byUnit" is outside the permitted range. The value was not sent.

eLON_181eAudio_type_Out_of_range: SNVT 181 / The input variable "stValue.eAudio_type" is outside the permitted range. The value was not sent.

eLON_181byAudio_line_Out_of_range: SNVT 181 / The input variable "stValue.byAudio_line" is outside the permitted range. The value was not sent.

eLON_181stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.eAudio_sensor_type" is outside the permitted range. The value was not sent.

eLON_181stAddr_dest_stP2p_byCar_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.byLocation" is outside the permitted range. The value was not sent.

eLON_181stAddr_dest_stP2p_byLocation_Out_of_range: SNVT 181 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_181stAddr_dest_stP2p_byUnit_id_Out_of_range: SNVT 181 / The input variable "stValue.stAddr_dest.stP2p.byUnit_id" is outside the permitted range. The value was not sent.

eLON_stAddr_dest_stP2p_eAudio_sensor_type_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.eAudio_sensor_type" is outside the permitted range. The value was not sent.

eLON_stAddr_dest_stP2p_byCar_id_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.byCar" is outside the permitted range. The value was not sent.

eLON_stAddr_dest_stP2p_byLocation_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_dest.stP2p.byLocation" is outside the permitted range. The value was not sent.

eLON_stAddr_dest_stP2p_byUnit_id_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_init.eAudio_sensor_type" is outside the permitted range. The value was not sent.

eLON_stAddr_init_eAudio_sensor_type_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_init.byCar_id" is outside the permitted range. The value was not sent.

eLON_stAddr_init_byCar_id_Out_of_range: SNVT 182 / The input variable "stValue." is outside the permitted range. The value was not sent.

eLON_stAddr_init_byLocation_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_init.byLocation" is outside the permitted range. The value was not sent.

eLON_stAddr_init_byUnit_id_Out_of_range: SNVT 182 / The input variable "stValue.stAddr_init.byUnit_id" is outside the permitted range. The value was not sent.

eLON_eAudio_type_Out_of_range: SNVT 182 / The input variable "stValue.eAudio_type" is outside the permitted range. The value was not sent.

eLON_eCycle_Out_of_range: SNVT 184 / The input variable "stValue.eCycle" is outside the permitted range. The value was not sent.

eLON_eSubcycle_Out_of_range: SNVT 184 / The input variable "stValue.eSubcycle" is outside the permitted range. The value was not sent.

eLON_stFunction_eProgram_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.eProgram" is outside the permitted range. The value was not sent.

eLON_stFunction_stWash_eLoad_level_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stWash_eLoad_level" is outside the permitted range. The value was not sent.

eLON_stFunction_stWash_ePrewash_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stWash.ePrewash" is outside the permitted range. The value was not sent.

eLON_stFunction_stRinse_eOption_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stRinse.eOption" is outside the permitted range. The value was not sent.

eLON_stFunction_stRinse_byRepeat_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stRinse.byRepeat" is outside the permitted range. The value was not sent.

eLON_stFunction_stSpin_eHold_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stSpin.eHold" is outside the permitted range. The value was not sent.

eLON_stFunction_stDry_byTemp_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stDry.byTemp" is outside the permitted range. The value was not sent.

eLON_stFunction_stDry_stDuration_eDryness_Out_of_range: SNVT 184 / The input variable "stValue.stFunction.stDry.stDuration.eDryness" is outside the permitted range. The value was not sent.

eLON_186eCycle_Out_of_range: SNVT 186 / The input variable "stValue.eCycle" is outside the permitted range. The value was not sent.

eLON_186eSubcycle_Out_of_range: SNVT 186 / The input variable "stValue.eSubcycle" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_eCycle_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.eCycle" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_eSubcycle_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.eSubcycle" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_eProgram_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.eProgram" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stWash_eLoad_level_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stWash.eLoad" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stWash_ePrewash_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stWash.ePrewash" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stRinse_eOption_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stRinse.eOption" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stRinse_byRepeat_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stRinse.byRepeat" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stSpin_eHold_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stSpin.eHold" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stDry_byTemp_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stDry.byTemp" is outside the permitted range. The value was not sent.

eLON_stWasher_command_data_stFunction_stDry_stDuration_eDryness_Out_of_range: SNVT 186 / The input variable "stValue.stWasher_command_data.stFunction.stDry.stDuration.eDryness" is outside the permitted range. The value was not sent.

eLON_eState_Out_of_range: SNVT 189 / The input variable "stValue.eState" is outside the permitted range. The value was not sent.

eLON_stSetting_rValue_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.rValue" is outside the permitted range. The value was not sent.

eLON_stSetting_rChange_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.rChange" is outside the permitted range. The value was not sent.

eLON_stSetting_rMultiplier_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.rMultiplier" is outside the permitted range. The value was not sent.

eLON_stSetting_iAngle_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.iAngle" is outside the permitted range. The value was not sent.

eLON_stSetting_byGroup_number_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.byGroup_number" is outside the permitted range. The value was not sent.

eLON_stSetting_siFan_level_Out_of_range: SNVT 189 / The input variable "stValue.stSettings.siFan_level" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_lumen_rX_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.rX" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_lumen_rY_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.rY" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_lumen_udiAbsolute_Y_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_lumen.udiAbsolute_Y" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_percent_rX_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rX" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_percent_rY_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rY" is outside the permitted range. The value was not sent.

eLON_stColor_value_stCIE1931_percent_rPercent_Y_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.stCIE1931_percent.rPercent_Y" is outside the permitted range. The value was not sent.

eLON_stColor_value_uiColor_temperature_Out_of_range: SNVT 190 / The input variable "stValue.stColor_value.uiColor_temperature" is outside the permitted range. The value was not sent.

eLON_191eStatus_Out_of_range: SNVT 191 / The input variable "stValue.Status" is outside the permitted range. The value was not sent.

eLON_uiLog_number_Out_of_range: SNVT 191 / The input variable "stValue.uiLog_number" is outside the permitted range. The value was not sent.

eLON_rLevel_Out_of_range: SNVT 191 / The input variable "stValue.rLevel" is outside the permitted range. The value was not sent.

eLON_stCurrent_notify_time_rHundredths_Out_of_range: SNVT 191 / The input variable "stValue.stCurrent_notify_time.rHundredths" is outside the permitted range. The value was not sent.

eLON_stPrevious_notify_time_rHundredths_Out_of_range: SNVT 191 / The input variable "stValue.stPrevious_notify_time.rHundredths" is outside the permitted range. The value was not sent.

eLON_rHundredths_Out_of_range: SNVT 192 / The input variable "stValue.rHundredths" is outside the permitted range. The value was not sent.

eLON_stStart_time_rHundredths_Out_of_range: SNVT 193 / The input variable "stValue.stStart_time.rHundredths" is outside the permitted range. The value was not sent.

eLON_stEnd_time_rHundredths_Out_of_range: SNVT 193 / The input variable "stValue.stEnd_time.rHundredths" is outside the permitted range. The value was not sent.

eLON_rComplete_Out_of_range: SNVT 194 / The input variable "stValue.rComplete" is outside the permitted range. The value was not sent.

eLON_stTime_actual_rHundredths_Out_of_range: SNVT 199 / The input variable "stValue.stTime_actual.rHundredths" is outside the permitted range. The value was not sent.

eLON_stTime_previous_rHundredths_Out_of_range: SNVT 199 / The input variable "stValue.stTime_previous.rHundredths" is outside the permitted range. The value was not sent.

eLON_lrEnergy_Out_of_range: SNVT 200 / The input variable "stValue.lrEnergy" is outside the permitted range. The value was not sent.

eLON_rPowerFactor_Out_of_range: SNVT 200 / The input variable "stValue.rPowerFactor" is outside the permitted range. The value was not sent.

eLON_rPower_Out_of_range: SNVT 200 / The input variable "stValue.rPower" is outside the permitted range. The value was not sent.

eLON_rBallastTemp_Out_of_range: SNVT 200 / The input variable "stValue.rBallastTemp" is outside the permitted range. The value was not sent.

eLON_lrLongitude_Out_of_range: SNVT 201 / The input variable "stValue.lrLongitude" is outside the permitted range. The value was not sent.

eLON_lrLatitude_Out_of_range: SNVT 201 / The input variable "stValue.lrLatitude" is outside the permitted range. The value was not sent.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.2 E_LON_Parameter_Datatypes

Enums SNVT types

```

TYPE E_LON_Parameter_Datatypes :
(
  eEmpty           := 0,
  eSNVT_amp        := 1,
  eSNVT_amp_mil    := 2,
  eSNVT_angle      := 3,
  eSNVT_angle_vel  := 4,
  eSNVT_btu_kilo   := 5,
  eSNVT_btu_mega   := 6,
  eSNVT_char_ascii := 7,
  eSNVT_count      := 8,
  eSNVT_count_inc  := 9,
  eSNVT_date_cal   := 10,
  eSNVT_date_day   := 11,
  eSNVT_date_time  := 12,
  eSNVT_elec_kwh   := 13,
  eSNVT_elec_whr   := 14,
  eSNVT_flow       := 15,
  eSNVT_flow_mil   := 16,
  eSNVT_length     := 17,
  eSNVT_length_kilo := 18,
  eSNVT_length_micr := 19,
  eSNVT_length_mil := 20,
  eSNVT_lev_cont   := 21,
  eSNVT_lev_disc   := 22,
  eSNVT_mass       := 23,
  eSNVT_mass_kilo  := 24,
  eSNVT_mass_mega  := 25,
  eSNVT_mass_mil   := 26,
  eSNVT_power      := 27,
  eSNVT_power_kilo := 28,
  eSNVT_ppm        := 29,
  eSNVT_press      := 30,
  eSNVT_res        := 31,
  eSNVT_res_kilo   := 32,
  eSNVT_sound_db   := 33,
  eSNVT_speed      := 34,
  eSNVT_speed_mil  := 35,
  eSNVT_str_asc    := 36,
  eSNVT_str_int    := 37,
  eSNVT_telcom     := 38,
  eSNVT_temp       := 39,
  eSNVT_time_passed := 40,
  eSNVT_vol        := 41,
  eSNVT_vol_kilo   := 42,
  eSNVT_vol_mil    := 43,
  eSNVT_volt       := 44,
  eSNVT_volt_dbmv  := 45,
  eSNVT_volt_kilo  := 46,
  eSNVT_volt_mil   := 47,
  eSNVT_amp_f      := 48,
  eSNVT_angle_f    := 49,
  eSNVT_angle_vel_f := 50,
  eSNVT_count_f    := 51,
  eSNVT_count_inc_f := 52,
  eSNVT_flow_f     := 53,
  eSNVT_length_f   := 54,
  eSNVT_lev_cont_f := 55,
  eSNVT_mass_f     := 56,
  eSNVT_power_f    := 57,
  eSNVT_ppm_f      := 58,
  eSNVT_press_f    := 59,
  eSNVT_res_f      := 60,
  eSNVT_sound_db_f := 61,
  eSNVT_speed_f    := 62,
  eSNVT_temp_f     := 63,
  eSNVT_time_f     := 64,
  eSNVT_vol_f      := 65,
  eSNVT_volt_f     := 66,
  eSNVT_btu_f      := 67,
  eSNVT_elec_whr_f := 68,
  eSNVT_config_src := 69,
  eSNVT_color      := 70,
  eSNVT_grammage   := 71,
  eSNVT_grammage_f := 72,
  eSNVT_file_req   := 73,

```



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eSNVT_file_status      := 74,
eSNVT_freq_f          := 75,
eSNVT_freq_hz         := 76,
eSNVT_freq_kilohz     := 77,
eSNVT_freq_milhz      := 78,
eSNVT_lux             := 79,
eSNVT_ISO_7811        := 80,
eSNVT_lev_percent     := 81,
eSNVT_multiplier      := 82,
eSNVT_state           := 83,
eSNVT_time_stamp      := 84,
eSNVT_zerospanspan    := 85,
eSNVT_magcard         := 86,
eSNVT_elapsed_tm      := 87,
eSNVT_alarm           := 88,
eSNVT_currency        := 89,
eSNVT_file_pos        := 90,
eSNVT_muldiv          := 91,
eSNVT_obj_request     := 92,
eSNVT_obj_status      := 93,
eSNVT_preset          := 94,
eSNVT_switch          := 95,
eSNVT_trans_table     := 96,
eSNVT_override        := 97,
eSNVT_pwr_fact        := 98,
eSNVT_pwr_fact_f      := 99,
eSNVT_density         := 100,
eSNVT_density_f       := 101,
eSNVT_rpm             := 102,
eSNVT_hvac_emerg      := 103,
eSNVT_angle_deg       := 104,
eSNVT_temp_p          := 105,
eSNVT_temp_setpt      := 106,
eSNVT_time_sec        := 107,
eSNVT_hvac_mode       := 108,
eSNVT_occupancy       := 109,
eSNVT_area            := 110,
eSNVT_hvac_overid     := 111,
eSNVT_hvac_status     := 112,
eSNVT_press_p         := 113,
eSNVT_address         := 114,
eSNVT_scene           := 115,
eSNVT_scene_cfg       := 116,
eSNVT_setting         := 117,
eSNVT_evap_state      := 118,
eSNVT_therm_mode      := 119,
eSNVT_defr_mode       := 120,
eSNVT_defr_term       := 121,
eSNVT_defr_state      := 122,
eSNVT_time_min        := 123,
eSNVT_time_hour       := 124,
eSNVT_ph              := 125,
eSNVT_ph_f            := 126,
eSNVT_chlr_status     := 127,
eSNVT_tod_event       := 128,
eSNVT_smo_obscur      := 129,
eSNVT_fire_test       := 130,
eSNVT_temp_ror        := 131,
eSNVT_fire_init       := 132,
eSNVT_fire_indcte     := 133,
eSNVT_time_zone       := 134,
eSNVT_earth_pos       := 135,
eSNVT_reg_val         := 136,
eSNVT_reg_val_ts      := 137,
eSNVT_volt_ac         := 138,
eSNVT_amp_ac          := 139,

eSNVT_turbidity       := 143,
eSNVT_turbidity_f     := 144,
eSNVT_hvac_type       := 145,
eSNVT_elec_kwh_l      := 146,
eSNVT_temp_diff_p     := 147,
eSNVT_ctrl_req        := 148,
eSNVT_ctrl_resp       := 149,
eSNVT_ptz             := 150,
eSNVT_privacyzone     := 151,
eSNVT_pos_ctrl        := 152,
eSNVT_enthalpy        := 153,
eSNVT_gfci_status     := 154,
eSNVT_motor_state     := 155,

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eSNVT_pumpset_mn      := 156,
eSNVT_ex_control      := 157,
eSNVT_pumpset_sn      := 158,
eSNVT_pump_sensor     := 159,
eSNVT_abs_humid       := 160,
eSNVT_flow_p          := 161,
eSNVT_dev_c_mode      := 162,
eSNVT_valve_mode      := 163,
eSNVT_alarm_2         := 164,
eSNVT_state_64        := 165,
eSNVT_nv_type         := 166,

eSNVT_ent_opmode      := 168,
eSNVT_ent_state       := 169,
eSNVT_ent_status      := 170,
eSNVT_flow_dir        := 171,
eSNVT_hvac_satsts     := 172,
eSNVT_dev_status      := 173,
eSNVT_dev_fault       := 174,
eSNVT_dev_maint       := 175,
eSNVT_date_event      := 176,
eSNVT_sched_val       := 177,
eSNVT_sec_state       := 178,
eSNVT_sec_status      := 179,
eSNVT_sbld_state      := 180,
eSNVT_rac_ctrl        := 181,
eSNVT_rac_req         := 182,
eSNVT_count_32        := 183,
eSNVT_clothes_w_c     := 184,
eSNVT_clothes_w_m     := 185,
eSNVT_clothes_w_s     := 186,
eSNVT_clothes_w_a     := 187,
eSNVT_multiplier_s    := 188,
eSNVT_switch_2        := 189,
eSNVT_color_2         := 190,
eSNVT_log_status      := 191,
eSNVT_time_stamp_p    := 192,
eSNVT_log_fx_request  := 193,
eSNVT_log_fx_status   := 194,
eSNVT_log_request     := 195,
eSNVT_enthalpy_d      := 196,
eSNVT_amp_ac_mil      := 197,
eSNVT_time_hour_p     := 198,
eSNVT_lamp_status     := 199,
eSNVT_environment     := 200,
eSNVT_geo_loc         := 201
)
END_TYPE

```

eEmpty:**eSNVT_amp:** SNVT_amp**eSNVT_amp_mil:** SNVT_amp_mil**eSNVT_angle:** SNVT_angle**eSNVT_angle_vel:** SNVT_angle_vel**eSNVT_btu_kilo:** SNVT_btu_kilo**eSNVT_btu_mega:** SNVT_btu_mega**eSNVT_char_ascii:** SNVT_char_ascii**eSNVT_count:** SNVT_count**eSNVT_count_inc:** SNVT_count_inc**eSNVT_date_cal:** SNVT_date_cal**eSNVT_date_day:** SNVT_date_day**eSNVT_date_time:** SNVT_date_time**eSNVT_elec_kwh:** SNVT_elec_kwh

eSNVT_elec_whr: SNVT_elec_whr
eSNVT_flow: SNVT_flow
eSNVT_flow_mil: SNVT_flow_mil
eSNVT_length: SNVT_length
eSNVT_length_kilo: SNVT_length_kilo
eSNVT_length_micr: SNVT_length_micr
eSNVT_length_mil: SNVT_length_mil
eSNVT_lev_cont: SNVT_lev_cont
eSNVT_lev_disc: SNVT_lev_disc
eSNVT_mass: SNVT_mass
eSNVT_mass_kilo: SNVT_mass_kilo
eSNVT_mass_mega: SNVT_mass_mega
eSNVT_mass_mil: SNVT_mass_mil
eSNVT_power: SNVT_power
eSNVT_power_kilo: SNVT_power_kilo
eSNVT_ppm: SNVT_ppm
eSNVT_press: SNVT_press
eSNVT_res: SNVT_res
eSNVT_res_kilo: SNVT_res_kilo
eSNVT_sound_db: SNVT_sound_db
eSNVT_speed: SNVT_speed
eSNVT_speed_mil: SNVT_speed_mil
eSNVT_str_asc: SNVT_str_asc
eSNVT_str_int: SNVT_str_int
eSNVT_telcom: SNVT_telcom
eSNVT_temp: SNVT_temp
eSNVT_time_passed: SNVT_time_passed
eSNVT_vol: SNVT_vol
eSNVT_vol_kilo: SNVT_vol_kilo
eSNVT_vol_mil: SNVT_vol_mil
eSNVT_volt: SNVT_volt
eSNVT_volt_dbmv: SNVT_volt_dbmv
eSNVT_volt_kilo: SNVT_volt_kilo
eSNVT_volt_mil: SNVT_volt_mil
eSNVT_amp_f: SNVT_amp_f
eSNVT_angle_f: SNVT_angle_f

eSNVT_angle_vel_f: SNVT_angle_vel_f
eSNVT_count_f: SNVT_count_f
eSNVT_count_inc_f: SNVT_count_inc_f
eSNVT_flow_f: SNVT_flow_f
eSNVT_length_f: SNVT_length_f
eSNVT_lev_cont_f: SNVT_lev_cont_f
eSNVT_mass_f: SNVT_mass_f
eSNVT_power_f: SNVT_power_f
eSNVT_ppm_f: SNVT_ppm_f
eSNVT_press_f: SNVT_press_f
eSNVT_res_f: SNVT_res_f
eSNVT_sound_db_f: SNVT_sound_db_f
eSNVT_speed_f: SNVT_speed_f
eSNVT_temp_f: SNVT_temp_f
eSNVT_time_f: SNVT_time_f
eSNVT_vol_f: SNVT_vol_f
eSNVT_volt_f: SNVT_volt_f
eSNVT_btu_f: SNVT_btu_f
eSNVT_elec_whr_f: SNVT_elec_whr_f
eSNVT_config_src: SNVT_config_src
eSNVT_color: SNVT_color
eSNVT_grammage: SNVT_grammage
eSNVT_grammage_f: SNVT_grammage_f
eSNVT_file_req: SNVT_file_req
eSNVT_file_status: SNVT_file_status
eSNVT_freq_f: SNVT_freq_f
eSNVT_freq_hz: SNVT_freq_hz
eSNVT_freq_kilohz: SNVT_freq_kilohz
eSNVT_freq_milhz: SNVT_freq_milhz
eSNVT_lux: SNVT_lux
eSNVT_ISO_7811: SNVT_ISO_7811
eSNVT_lev_percent: SNVT_lev_percent
eSNVT_multiplier: SNVT_multiplier
eSNVT_state: SNVT_state
eSNVT_time_stamp: SNVT_time_stamp
eSNVT_zerospans: SNVT_zerospans

eSNVT_magcard: SNVT_magcard
eSNVT_elapsed_tm: SNVT_elapsed_tm
eSNVT_alarm: SNVT_alarm
eSNVT_currency: SNVT_currency
eSNVT_file_pos: SNVT_file_pos
eSNVT_muldiv: SNVT_muldiv
eSNVT_obj_request: SNVT_obj_request
eSNVT_obj_status: SNVT_obj_status
eSNVT_preset: SNVT_preset
eSNVT_switch: SNVT_switch
eSNVT_trans_table: SNVT_trans_table
eSNVT_override: SNVT_override
eSNVT_pwr_fact: SNVT_pwr_fact
eSNVT_pwr_fact_f: SNVT_pwr_fact_f
eSNVT_density: SNVT_density
eSNVT_density_f: SNVT_density_f
eSNVT_rpm: SNVT_rpm
eSNVT_hvac_emerg: SNVT_hvac_emerg
eSNVT_angle_deg: SNVT_angle_deg
eSNVT_temp_p: SNVT_temp_p
eSNVT_temp_setpt: SNVT_temp_setpt
eSNVT_time_sec: SNVT_time_sec
eSNVT_hvac_mode: SNVT_hvac_mode
eSNVT_occupancy: SNVT_occupancy
eSNVT_area: SNVT_area
eSNVT_hvac_overid: SNVT_hvac_overid
eSNVT_hvac_status: SNVT_hvac_status
eSNVT_press_p: SNVT_press_p
eSNVT_address: SNVT_address
eSNVT_scene: SNVT_scene
eSNVT_scene_cfg: SNVT_scene_cfg
eSNVT_setting: SNVT_setting
eSNVT_evap_state: SNVT_evap_state
eSNVT_therm_mode: SNVT_therm_mode
eSNVT_defr_mode: SNVT_defr_mode
eSNVT_defr_term: SNVT_defr_term

eSNVT_defr_state: SNVT_defr_state
eSNVT_time_min: SNVT_time_min
eSNVT_time_hour: SNVT_time_hour
eSNVT_ppm: SNVT_ph
eSNVT_ph_f: SNVT_ph_f
eSNVT_chlr_status: SNVT_chlr_status
eSNVT_tod_event: SNVT_tod_event
eSNVT_smo_obscur: SNVT_smo_obscur
eSNVT_fire_test: SNVT_fire_test
eSNVT_temp_ror: SNVT_temp_ror
eSNVT_fire_init: SNVT_fire_init
eSNVT_fire_indcte: SNVT_fire_indcte
eSNVT_time_zone: SNVT_time_zone
eSNVT_earth_pos: SNVT_earth_pos
eSNVT_reg_val: SNVT_reg_val
eSNVT_reg_val_ts: SNVT_reg_val_ts
eSNVT_volt_ac: SNVT_volt_ac
eSNVT_amp_ac: SNVT_amp_ac
eSNVT_turbidity: SNVT_turbidity
eSNVT_turbidity_f: SNVT_turbidity_f
eSNVT_hvac_type: SNVT_hvac_type
eSNVT_elec_kwh_l: SNVT_elec_kwh_l
eSNVT_temp_diff_p: SNVT_temp_diff_p
eSNVT_ctrl_req: SNVT_ctrl_req
eSNVT_ctrl_resp: SNVT_ctrl_resp
eSNVT_ptz: SNVT_ptz
eSNVT_privacyzone: SNVT_privacyzone
eSNVT_pos_ctrl: SNVT_pos_ctrl
eSNVT_enthalpy: SNVT_enthalpy
eSNVT_gfci_status: SNVT_gfci_status
eSNVT_motor_state: SNVT_motor_state
eSNVT_pumpset_mn: SNVT_pumpset_mn
eSNVT_ex_control: SNVT_ex_control
eSNVT_pumpset_sn: SNVT_pumpset_sn
eSNVT_pump_sensor: SNVT_pump_sensor
eSNVT_abs_humid: SNVT_abs_humid

eSNVT_flow_p: SNVT_flow_p
eSNVT_dev_c_mode: SNVT_dev_c_mode
eSNVT_valve_mode: SNVT_valve_mode
eSNVT_alarm_2: SNVT_alarm_2
eSNVT_state_64: SNVT_state_64
eSNVT_nv_type: SNVT_nv_type
eSNVT_ent_opmode: SNVT_ent_opmode
eSNVT_ent_state: SNVT_ent_state
eSNVT_ent_status: SNVT_ent_status
eSNVT_flow_dir: SNVT_flow_dir
eSNVT_hvac_satsts: SNVT_hvac_satsts
eSNVT_dev_status: SNVT_dev_status
eSNVT_dev_fault: SNVT_dev_fault
eSNVT_dev_maint: SNVT_dev_maint
eSNVT_date_event: SNVT_date_event
eSNVT_sched_val: SNVT_sched_val
eSNVT_sec_state: SNVT_sec_state
eSNVT_sec_status: SNVT_sec_status
eSNVT_sblnd_state: SNVT_sblnd_state
eSNVT_rac_ctrl: SNVT_rac_ctrl
eSNVT_rac_req: SNVT_rac_req
eSNVT_count_32: SNVT_count_32
eSNVT_clothes_w_c: SNVT_clothes_w_c
eSNVT_clothes_w_m: SNVT_clothes_w_m
eSNVT_clothes_w_s: SNVT_clothes_w_s
eSNVT_clothes_w_a: SNVT_clothes_w_a
eSNVT_multiplier_s: SNVT_multiplier_s
eSNVT_switch_2: SNVT_switch_2
eSNVT_color_2: SNVT_color_2
eSNVT_log_status: SNVT_log_status
eSNVT_time_stamp_p: SNVT_time_stamp_p
eSNVT_log_fx_request: SNVT_log_fx_request
eSNVT_log_fx_status: SNVT_log_fx_status
eSNVT_log_request: SNVT_log_request
eSNVT_enthalpy_d: SNVT_enthalpy_d
eSNVT_amp_ac_mil: SNVT_amp_ac_mil

eSNVT_time_hour_p: SNVT_time_hour_p

eSNVT_lamp_status: SNVT_lamp_status

eSNVT_environment: SNVT_environment

eSNVT_geo_loc: SNVT_geo_loc

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.3 E_LON_alarm_type_t

Used by: SNVT_alarm / SNVT_alarm_2

```

TYPE E_LON_alarm_type_t :
(
  eLON_AL_HEADER           := -13,
  eLON_AL_FOOTER           := -12,
  eLON_AL_DEBUG            := -11,
  eLON_AL_INFO             := -10,
  eLON_AL_SYSTEM_INFO      := -6,
  eLON_AL_VALUE_INVALID    := -5,
  eLON_AL_CONSTANT         := -4,
  eLON_AL_OFFLINE          := -3,
  eLON_AL_UNKNOWN          := -2,
  eLON_AL_NUL              := -1,
  eLON_AL_NO_CONDITION     := 0,
  eLON_AL_ALM_CONDITION    := 1,
  eLON_AL_TOT_SVC_ALM_1    := 2,
  eLON_AL_TOT_SVC_ALM_2    := 3,
  eLON_AL_TOT_SVC_ALM_3    := 4,
  eLON_AL_LOW_LMT_CLR_1    := 5,
  eLON_AL_LOW_LMT_CLR_2    := 6,
  eLON_AL_HIGH_LMT_CLR_1   := 7,
  eLON_AL_HIGH_LMT_CLR_2   := 8,
  eLON_AL_LOW_LMT_ALM_1    := 9,
  eLON_AL_LOW_LMT_ALM_2    := 10,
  eLON_AL_HIGH_LMT_ALM_1   := 11,
  eLON_AL_HIGH_LMT_ALM_2   := 12,
  eLON_AL_FIR_ALM          := 13,
  eLON_AL_FIR_PRE_ALM      := 14,
  eLON_AL_FIR_TRBL         := 15,
  eLON_AL_FIR_SUPV         := 16,
  eLON_AL_FIR_TEST_ALM     := 17,
  eLON_AL_FIR_TEST_PRE_ALM := 18,
  eLON_AL_FIR_ENVCOMP_MAX  := 19,
  eLON_AL_FIR_MONITOR_COND := 20,
  eLON_AL_FIR_MAINT_ALERT  := 21,
  eLON_AL_FATAL_ERROR       := 30,
  eLON_AL_ERROR             := 31,
  eLON_AL_WARNING          := 32
)
END_TYPE

```

eLON_AL_HEADER: Update sequence header

eLON_AL_FOOTER: Update sequence footer

eLON_AL_DEBUG: Debug information (not an alarm)

eLON_AL_INFO: Information update (not an alarm)

eLON_AL_SYSTEM_INFO: System information (not an alarm)

eLON_AL_VALUE_INVALID: The value is invalid

eLON_AL_CONSTANT: The value is a constant value (not an alarm)

eLON_AL_OFFLINE: The device is offline

eLON_AL_UNKNOWN: Alarm condition unknown (may be due to a communication failure or hardware failure)

eLON_AL_NUL: Invalid alarm type value (alarm condition not specified)

eLON_AL_NO_CONDITION: No alarm condition present

eLON_AL_ALM_CONDITION: Unspecified alarm condition present

eLON_AL_TOT_SVC_ALM_1: Total/service interval alarm 1 (component requires service or maintenance)

eLON_AL_TOT_SVC_ALM_2: Total/service interval alarm 2

eLON_AL_TOT_SVC_ALM_3: Total/service interval alarm 3

eLON_AL_LOW_LMT_CLR_1: Alarm low limit alarm clear 1

eLON_AL_LOW_LMT_CLR_2: Alarm low limit alarm clear 2

eLON_AL_HIGH_LMT_CLR_1: Alarm high limit alarm clear 1

eLON_AL_HIGH_LMT_CLR_2: Alarm high limit alarm clear 2

eLON_AL_LOW_LMT_ALM_1: Alarm low limit alarm 1

eLON_AL_LOW_LMT_ALM_2: Alarm low limit alarm 2

eLON_AL_HIGH_LMT_ALM_1: Alarm high limit alarm 1

eLON_AL_HIGH_LMT_ALM_2: Alarm high limit alarm 2

eLON_AL_FIR_ALM: Fire alarm condition

eLON_AL_FIR_PRE_ALM: Fire pre-alarm condition

eLON_AL_FIR_TRBL: Fire-related trouble (fault) condition

eLON_AL_FIR_SUPV: Fire-related supervisory condition (e.g., sprinkler pressure)

eLON_AL_FIR_TEST_ALM: Fire-related test-mode alarm condition

eLON_AL_FIR_TEST_PRE_ALM: Fire-related test-mode pre-alarm condition

eLON_AL_FIR_ENVCOMP_MAX: Fire-related maximum environmental compensation level reached

eLON_AL_FIR_MONITOR_COND: Fire-related abnormal input condition

eLON_AL_FIR_MAINT_ALERT: Fire-related maintenance alert

eLON_AL_FATAL_ERROR: Fatal application error

eLON_AL_ERROR: Other error condition

eLON_AL_WARNING: Other warning condition

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.4 E_LON_appl_cwc_t

Used by: SNVT_clothes_w_c / SNVT_clothes_w_s

```

TYPE E_LON_appl_cwc_t :
(
  eLON_CWC_NUL      := -1,
  eLON_CWC_WASH     := 0,
  eLON_CWC_RINSE    := 1,
  eLON_CWC_SPIN     := 2,

```

```

    eLON_CWC_DRY      := 3
)
END_TYPE

```

eLON_CWC_NUL: Invalid Value

eLON_CWC_WASH: Wash

eLON_CWC_RINSE: Rinse

eLON_CWC_SPIN: Spin

eLON_CWC_DRY: Dry

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.5 E_LON_appl_cwp_t

Used by: SNVT_clothes_w_c

```

TYPE E_LON_appl_cwp_t :
(
    eLON_CWP_NUL           := -1,
    eLON_CWP_GENERAL       := 0,
    eLON_CWP_BOIL          := 1,
    eLON_CWP_FAST_WASH     := 2,
    eLON_CWP_LINGERIE      := 3,
    eLON_CWP_WOOL          := 4,
    eLON_CWP_TOWEL         := 5,
    eLON_CWP_BED_LINENS    := 6,
    eLON_CWP_CURTAIN       := 7,
    eLON_CWP_RINSE_SPIN_ONLY := 8,
    eLON_CWP_DELICATE_RINSE := 9,
    eLON_CWP_SPIN_ONLY     := 10,
    eLON_CWP_DRY_ONLY      := 11
)
END_TYPE

```

eLON_CWP_NUL: Invalid Value

eLON_CWP_GENERAL: Normal Wash

eLON_CWP_BOIL: Boil

eLON_CWP_FAST_WASH: Fast Wash

eLON_CWP_LINGERIE: Lingerie

eLON_CWP_WOOL: Wool

eLON_CWP_TOWEL: Towel

eLON_CWP_BED_LINENS: Bed Linens

eLON_CWP_CURTAIN: Curtain

eLON_CWP_RINSE_SPIN_ONLY: Rinse and Spin Only

eLON_CWP_DELICATE_RINSE: Delicate Rinse

eLON_CWP_SPIN_ONLY: Spin Only

eLON_CWP_DRY_ONLY: Dry Only

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.6 E_LON_appl_cws_t

Used by: SNVT_clothes_w_c / SNVT_clothes_w_s

```
TYPE E_LON_appl_cws_t :
(
  eLON_CWS_NUL           := -1,
  eLON_CWS_LOAD_SENSING := 0,
  eLON_CWS_WETTING       := 1,
  eLON_CWS_DETERGENT     := 2,
  eLON_CWS_WASHING       := 3,
  eLON_CWS_WATERING      := 4,
  eLON_CWS_RINSING       := 5,
  eLON_CWS_ARRANGING     := 6,
  eLON_CWS_DRAIN         := 7,
  eLON_CWS_SPINNING      := 8,
  eLON_CWS_FINAL_SPINNING := 9,
  eLON_CWS_FLUFFING      := 10,
  eLON_CWS_DRYING        := 11,
  eLON_CWS_COOLING       := 12
)
END_TYPE
```

eLON_CWS_NUL: Invalid Value

eLON_CWS_LOAD_SENSING: Sensing Load

eLON_CWS_WETTING: Wetting

eLON_CWS_DETERGENT: Detergent

eLON_CWS_WASHING: Washing

eLON_CWS_WATERING: Watering

eLON_CWS_RINSING: Rinsing

eLON_CWS_ARRANGING: Arranging

eLON_CWS_DRAIN: Drain

eLON_CWS_SPINNING: Spinning

eLON_CWS_FINAL_SPINNING: In Final Spin

eLON_CWS_FLUFFING: Fluffing

eLON_CWS_DRYING: Drying

eLON_CWS_COOLING: Cooling

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.7 E_LON_appl_rin_t

Used by: SNVT_clothes_w_c

```
TYPE E_LON_appl_rin_t :
(
  eLON_RIN_NUL           := -1,
  eLON_RIN_PRE_WASH      := 0,
  eLON_RIN_WATER_PLUS    := 1,
  eLON_RIN_DETERGENT_PLUS := 2,
  eLON_RIN_RINSE_HOLD    := 3
)
END_TYPE
```

eLON_RIN_NUL: Invalid Value

eLON_RIN_PRE_WASH: Pre-wash

eLON_RIN_WATER_PLUS: Water Plus

eLON_RIN_DETERGENT_PLUS: Detergent Plus

eLON_RIN_RINSE_HOLD: Rinse Hold

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.8 E_LON_boolean_t

Used by: SCPTautoAnswer / SCPTcoolingResetEnable / SCPTdefrostHold / SCPTdefrostInternalSchedule / SCPTheatingResetEnable / SCPTHighLimit1Enable / SCPTHighLimit2Enable / SCPTLowLimit1Enable / SCPTLowLimit2Enable / SCPTscheduleInternal / SNVT_clothes_w_c / SNVT_pump_sensor / SNVT_pumpset_mn / SNVT_pumpset_sn

```
TYPE E_LON_boolean_t :
```

```
(
  eLON_BOOL_NUL    := -1,
  eLON_BOOL_FALSE  := 0,
  eLON_BOOL_TRUE   := 1
)
```

```
END_TYPE
```

eLON_BOOL_NUL: Invalid Value

eLON_BOOL_FALSE: False

eLON_BOOL_TRUE: True

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.9 E_LON_calendar_type_t

Used by: SNVT_time_zone

```
TYPE E_LON_calendar_type_t :
```

```
(
  eLON_CAL_NUL    := -1,
  eLON_CAL_GREG   := 0,
  eLON_CAL_JUL    := 1,
  eLON_CAL_MEU    := 2
)
```

```
END_TYPE
```

eLON_CAL_NUL: Invalid Value

eLON_CAL_GREG: Gregorian calendar

eLON_CAL_JUL: Julian calendar

eLON_CAL_MEU: Calendar Method European/US "MEU"

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.10 E_LON_cam_act_t

Used by: SNVT_pos_ctrl

```

TYPE E_LON_cam_act_t :
(
  eLON_CMA_NUL   := -1,
  eLON_CMA_SAVE  := 0,
  eLON_CMA_CALL  := 1,
  eLON_CMA_READ  := 2
)
END_TYPE

```

eLON_CMA_NUL: Invalid action call response

eLON_CMA_SAVE: Save the values defined by the function

eLON_CMA_CALL: Preposition tour tables

eLON_CMA_READ: Absolute positions

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.11 E_LON_cam_func_t

Used by: SNVT_pos_ctrl

```

TYPE E_LON_cam_func_t :
(
  eLON_CMF_NUL   := -1,
  eLON_CMF_REL   := 0,
  eLON_CMF_TOUR  := 1,
  eLON_CMF_ABS   := 2
)
END_TYPE

```

eLON_CMF_ABS eLON_CMF_TOUR eLON_CMF_REL eLON_CMF_NUL

eLON_CMF_NUL: Invalid function call response

eLON_CMF_REL: Relative positions, prepositions

eLON_CMF_TOUR: Preposition tour tables

eLON_CMF_ABS: Absolute positions

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.12 E_LON_chiller_t

Used by: SNVT_chlr_status

```

TYPE E_LON_chiller_t :
(
  eLON_CHLR_NUL      := -1,
  eLON_CHLR_OFF      := 0,
  eLON_CHLR_START    := 1,
  eLON_CHLR_RUN      := 2,
  eLON_CHLR_PRESHUTDN := 3,
  eLON_CHLR_SERVICE  := 4
)
END_TYPE

```

eLON_CHLR_NUL: Invalid Value

eLON_CHLR_OFF: Chiller off

eLON_CHLR_START: Chiller in start mode

eLON_CHLR_RUN: Chiller in run mode

eLON_CHLR_PRESHUTDN: Chiller in pre shutdown mode

eLON_CHLR_SERVICE: Chiller in service mode

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.13 E_LON_color_encoding_t

Used by: SNVT_color_2

```

TYPE E_LON_color_encoding_t :
(
  eLON_COLOR_NUL           := -1,
  eLON_COLOR_CIE31_LUMEN   := 0,
  eLON_COLOR_CIE31_PERCENT := 1,
  eLON_COLOR_RGB           := 2,
  eLON_COLOR_TEMPERATURE   := 3
)
END_TYPE

```

eLON_COLOR_NUL: Invalid value

eLON_COLOR_CIE31_LUMEN: CIE 1931 color space; Y output in lumen

eLON_COLOR_CIE31_PERCENT: CIE 1931 color space; Y output in percent of maximum lumen output of the lamp

eLON_COLOR_RGB: No color space, RGB color value

eLON_COLOR_TEMPERATURE: Color temperature

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.14 E_LON_config_source_t

Used by: SNVT_config_src

```

TYPE E_LON_config_source_t :
(
  eLON_CFG_NUL       := -1,
  eLON_CFG_LOCAL      := 0,
  eLON_CFG_EXTERNAL  := 1
)
END_TYPE

```

eLON_CFG_NUL: Invalid Value

eLON_CFG_LOCAL: Device will use self-installation functions to set its own network image

eLON_CFG_EXTERNAL: Device's network image will be set by an outside source

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.15 E_LON_control_resp_t

Used by: SNVT_ctrl_resp

```

TYPE E_LON_control_resp_t :
(
  eLON_CTRLR_NUL      := -1,
  eLON_CTRLR_NO       := 0,
  eLON_CTRLR_PEND     := 1,
  eLON_CTRLR_REL      := 2,
  eLON_CTRLR_QUERY    := 3,
  eLON_CTRLR_RES      := 4,
  eLON_CTRLR_ERR      := 5
)
END_TYPE

```

eLON_CTRLR_NUL: Invalid value

eLON_CTRLR_NO: Number of current controller

eLON_CTRLR_PEND: Request pending due to control query to current operator

eLON_CTRLR_REL: Current control released

eLON_CTRLR_QUERY: Query to current controller

eLON_CTRLR_RES: Controllable device has been reset

eLON_CTRLR_ERR: Error in control

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.16 E_LON_currency_t

Used by: SNVT_currency

```

TYPE E_LON_currency_t :
(
  eLON_CU_NUL                      := -1,
  eLON_CU_ARGENTINA_PESO           := 0,
  eLON_CU_AUSTRALIA_DOLLAR         := 1,
  eLON_CU_AUSTRIA_SCHILLING        := 2,
  eLON_CU_BAHRAIN_DINAR           := 3,
  eLON_CU_BELGIUM_FRANC            := 4,
  eLON_CU_BRAZIL_CRUZEIRO_REAL     := 5,
  eLON_CU_BRITAIN_POUND            := 6,
  eLON_CU_CANADA_DOLLAR            := 7,
  eLON_CU_CZECH_KORUNA             := 8,
  eLON_CU_CHILE_PESO               := 9,
  eLON_CU_CHINA_RENMINBI           := 10,
  eLON_CU_COLOMBIA_PESO            := 11,
  eLON_CU_DENMARK_KRONE            := 12,
  eLON_CU_ECUADOR_SUCRE            := 13,
  eLON_CU_EUROPEAN_CURRENCY_UNIT   := 14,
  eLON_CU_FINLAND_MARKKA           := 15,
  eLON_CU_FRANCE_FRANC             := 16,
  eLON_CU_GERMANY_MARK             := 17,
  eLON_CU_GREECE_DRACHMA           := 18,
  eLON_CU_HONG_KONG_DOLLAR         := 19,
  eLON_CU_HUNGARY_FORINT           := 20,
  eLON_CU_INDIA_RUPEE              := 21,
  eLON_CU_INDONESIA_RUPIAH          := 22,
  eLON_CU_IRELAND_PUNT             := 23,
  eLON_CU_ISRAEL_SHEKEL            := 24,
  eLON_CU_ITALY_LIRA               := 25,
  eLON_CU_JAPAN_YEN                := 26,
  eLON_CU_JORDAN_DINAR             := 27,
  eLON_CU_KUWAIT_DINAR             := 28,
  eLON_CU_LEBANON_POUND            := 29,
  eLON_CU_MALAYSIA_RINGGIT         := 30,
  eLON_CU_MALTA_LIRA               := 31,
  eLON_CU_MEXICO_PESO              := 32,
  eLON_CU_NETHERLANDS_GUILDER      := 33,
  eLON_CU_NEW_ZEALAND_DOLLAR       := 34,
  eLON_CU_NORWAY_KRONE             := 35,
  eLON_CU_PAKISTAN_RUPEE           := 36,

```

```

eLON_CU_PERU_NEW_SOL           := 37,
eLON_CU_PHILIPPINES_PESO       := 38,
eLON_CU_POLAND_ZLOTY           := 39,
eLON_CU_PORTUGAL_ESCUDO        := 40,
eLON_CU_SAUDI_ARABIA_RIYAL     := 41,
eLON_CU_SINGAPORE_DOLLAR       := 42,
eLON_CU_SLOVAK_KORUNA          := 43,
eLON_CU_SOUTH_AFRICA_RAND      := 44,
eLON_CU_SOUTH_KOREA_WON        := 45,
eLON_CU_SPAIN_PESETA           := 46,
eLON_CU_SPECIAL_DRAWING_RIGHTS := 47,
eLON_CU_SWEDEN_KRONA           := 48,
eLON_CU_SWITZERLAND_FRANC      := 49,
eLON_CU_TAIWAN_DOLLAR          := 50,
eLON_CU_THAILAND_BAHT          := 51,
eLON_CU_TURKEY_LIRA            := 52,
eLON_CU_UNITED_ARAB_DIRHAM     := 53,
eLON_CU_UNITED_STATES_DOLLAR   := 54,
eLON_CU_URUGUAY_NEW_PESO       := 55,
eLON_CU_VENEZUELA_BOLIVAR      := 56
)
END_TYPE

```

eLON_CU_NUL: Invalid Value

eLON_CU_ARGENTINA_PESO: Argentine Peso

eLON_CU_AUSTRALIA_DOLLAR: Australian Dollar

eLON_CU_AUSTRIA_SCHILLING: Austrian Schilling

eLON_CU_BAHRAIN_DINAR: Bahraini Dinar

eLON_CU_BELGIUM_FRANC: Belgian Franc

eLON_CU_BRAZIL_CRUZEIRO_REAL: Brazilian Cruzeiro Real

eLON_CU_BRITAIN_POUND: British Pound

eLON_CU_CANADA_DOLLAR: Canadian Dollar

eLON_CU_CZECH_KORUNA: Czechoslovakian Koruna

eLON_CU_CHILE_PESO: Chilean Peso

eLON_CU_CHINA_RENMINBI: Chinese Renminbi Yuan

eLON_CU_COLOMBIA_PESO: Colombian Peso

eLON_CU_DENMARK_KRONE: Danish Krone

eLON_CU_ECUADOR_SUCRE: Ecuadorian Sucre

eLON_CU_EUROPEAN_CURRENCY_UNIT: European Euro

eLON_CU_FINLAND_MARKKA: Finnish Markka

eLON_CU_FRANCE_FRANC: French Franc

eLON_CU_GERMANY_MARK: German Mark

eLON_CU_GREECE_DRACHMA: Greek Drachma

eLON_CU_HONG_KONG_DOLLAR: Hong Kong Dollar

eLON_CU_HUNGARY_FORINT: Hungarian Forint

eLON_CU_INDIA_RUPEE: Indian Rupee

eLON_CU_INDONESIA_RUPIAH: Indonesian Rupiah

eLON_CU_IRELAND_PUNT: Irish Punt

eLON_CU_ISRAEL_SHEKEL: Israeli Shekel

eLON_CU_ITALY_LIRA: Italian Lira
eLON_CU_JAPAN_YEN: Japanese Yen
eLON_CU_JORDAN_DINAR: Jordanian Dinar
eLON_CU_KUWAIT_DINAR: Kuwaiti Dinar
eLON_CU_LEBANON_POUND: Lebanese Pound
eLON_CU_MALAYSIA_RINGGIT: Malaysian Ringgit
eLON_CU_MALTA_LIRA: Maltese Lira
eLON_CU_MEXICO_PESO: Mexican New Peso
eLON_CU_NETHERLANDS_GUILDER: Netherlands Guilder
eLON_CU_NEW_ZEALAND_DOLLAR: New Zealand Dollar
eLON_CU_NORWAY_KRONE: Norwegian Krone
eLON_CU_PAKISTAN_RUPEE: Pakistani Rupee
eLON_CU_PERU_NEW_SOL: Peruvian New Sol
eLON_CU_PHILIPPINES_PESO: Philippine Peso
eLON_CU_POLAND_ZLOTY: Polish Zloty
eLON_CU_PORTUGAL_ESCUDO: Portuguese Escudo
eLON_CU_SAUDI_ARABIA_RIYAL: Saudi Arabian Riyal
eLON_CU_SINGAPORE_DOLLAR: Singaporean Dollar
eLON_CU_SLOVAK_KORUNA: Slavic Koruna
eLON_CU_SOUTH_AFRICA_RAND: South African Rand
eLON_CU_SOUTH_KOREA_WON: South Korean Won
eLON_CU_SPAIN_PESETA: Spanish Peseta
eLON_CU_SPECIAL_DRAWING_RIGHTS: international governmental exchange
eLON_CU_SWEDEN_KRONA: Swedish Krona
eLON_CU_SWITZERLAND_FRANC: Swiss Franc
eLON_CU_TAIWAN_DOLLAR: Taiwanese Dollar
eLON_CU_THAILAND_BAHT: Thai Baht
eLON_CU_TURKEY_LIRA: Turkish Lira
eLON_CU_UNITED_ARAB_DIRHAM: United Arab Emirates Dirham
eLON_CU_UNITED_STATES_DOLLAR: United States Dollar
eLON_CU_URUGUAY_NEW_PESO: Uruguayan New Peso
eLON_CU_VENEZUELA_BOLIVAR: Venezuelan Bolivar

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.17 E_LON_days_of_week_t

Used by: SCPTtimePeriod / SNVT_date_day / SNVT_time_zone

```
TYPE E_LON_days_of_week_t :
(
  eLON_DAY_NUL := -1,
  eLON_DAY_SUN := 0,
  eLON_DAY_MON := 1,
  eLON_DAY_TUE := 2,
  eLON_DAY_WED := 3,
  eLON_DAY_THU := 4,
  eLON_DAY_FRI := 5,
  eLON_DAY_SAT := 6
)
END_TYPE
```

eLON_DAY_NUL: Invalid Value

eLON_DAY_SUN: Sunday

eLON_DAY_MON: Monday

eLON_DAY_TUE: Tuesday

eLON_DAY_WED: Wednesday

eLON_DAY_THU: Thursday

eLON_DAY_FRI: Friday

eLON_DAY_SAT: Saturday

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.18 E_LON_defrost_mode_t

Used by: SNVT_defr_mode

```
TYPE E_LON_defrost_mode_t :
(
  eLON_DFM_NUL := -1,
  eLON_DFM_MODE_AMBIENT := 0,
  eLON_DFM_MODE_FORCED := 1,
  eLON_DFM_MODE_SYNC := 2
)
END_TYPE
```

eLON_DFM_NUL: Invalid Value

eLON_DFM_MODE_AMBIENT: No forced heating required

eLON_DFM_MODE_FORCED: Start-up after defrost ignored

eLON_DFM_MODE_SYNC: Synchronized

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.19 E_LON_defrost_state_t

Used by: SNVT_defr_state

```

TYPE E_LON_defrost_state_t :
(
  eLON_DFS_NUL           := -1,
  eLON_DFS_STANDBY       := 0,
  eLON_DFS_PUMPDOWN      := 1,
  eLON_DFS_DEFROST       := 2,
  eLON_DFS_DRAINDOWN     := 3,
  eLON_DFS_INJECT_DLY    := 4
)
END_TYPE

```

eLON_DFS_NUL: Invalid Value

eLON_DFS_STANDBY: Defrost in standby

eLON_DFS_PUMPDOWN: Defrost in pump-down mode

eLON_DFS_DEFROST: In defrost mode

eLON_DFS_DRAINDOWN: Defrost in drain-down

eLON_DFS_INJECT_DLY: Defrost in injection delay

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.20 E_LON_defrost_term_t

Used by: SNVT_defr_term

```

TYPE E_LON_defrost_term_t :
(
  eLON_DFT_NUL           := -1,
  eLON_DFT_TERM_TEMP     := 0,
  eLON_DFT_TERM_TIME     := 1,
  eLON_DFT_TERM_FIRST    := 2,
  eLON_DFT_TERM_LAST     := 3,
  eLON_DFT_TERM_SENSOR   := 4,
  eLON_DFT_TERM_DISCHARGE := 5,
  eLON_DFT_TERM_RETURN   := 6,
  eLON_DFT_TERM_SW_OPEN  := 7,
  eLON_DFT_TERM_SW_CLOSE := 8,
  eLON_DFT_TERM_MANUF    := 100
)
END_TYPE

```

eLON_DFT_NUL: Invalid Value

eLON_DFT_TERM_TEMP: Terminate on temperature

eLON_DFT_TERM_TIME: Terminate on time

eLON_DFT_TERM_FIRST: Terminate on first occurring

eLON_DFT_TERM_LAST: Terminate on last occurring

eLON_DFT_TERM_SENSOR: Terminate on sensor

eLON_DFT_TERM_DISCHARGE: Terminate on discharge

eLON_DFT_TERM_RETURN: Terminate on return

eLON_DFT_TERM_SW_OPEN: Terminate on "Switch Open"

eLON_DFT_TERM_SW_CLOSE: Terminate on "Switch Closed"

eLON_DFT_TERM_MANUF: Manufacturer-Defined termination state

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.21 E_LON_device_c_mode_t

Used by: SNVT_dev_c_mode

```

TYPE E_LON_device_c_mode_t :
(
  eLON_DCM_NUL           := -1,
  eLON_DCM_SPEED_CONST   := 0,
  eLON_DCM_PRESS_CONST   := 1,
  eLON_DCM_PRESS_COMP    := 2,
  eLON_DCM_FLOW_CONST    := 3,
  eLON_DCM_FLOW_COMP     := 4,
  eLON_DCM_TEMP_CONST    := 5,
  eLON_DCM_TEMP_COMP     := 6,
  eLON_DCM_PRESS_AUTO    := 7,
  eLON_DCM_QUICK_OPEN    := 20,
  eLON_DCM_LINEAR        := 21,
  eLON_DCM_EQUAL_PERCENT := 22,
  eLON_DCM_QUADRATIC     := 23,
  eLON_DCM_FREE_DEFINED  := 24,
  eLON_DCM_2WAY_VALVE    := 27,
  eLON_DCM_MIXING_VALVE  := 28,
  eLON_DCM_DIVERTING_VALVE := 29,
  eLON_DCM_INVFNC_QCK_OPN := 30,
  eLON_DCM_INVFNC_EQL_PERC := 31,
  eLON_DCM_INVFNC_QUAD   := 32
)
END_TYPE

```

eLON_DCM_NUL: Invalid Value

eLON_DCM_SPEED_CONST:

eLON_DCM_PRESS_CONST:

eLON_DCM_PRESS_COMP:

eLON_DCM_FLOW_CONST:

eLON_DCM_FLOW_COMP:

eLON_DCM_TEMP_CONST:

eLON_DCM_TEMP_COMP:

eLON_DCM_PRESS_AUTO:

eLON_DCM_QUICK_OPEN: Valve works with Quick-Open flow characteristic

eLON_DCM_LINEAR: Valve works with Linear flow characteristic

eLON_DCM_EQUAL_PERCENT: Valve works with Equal Percent flow characteristic

eLON_DCM_QUADRATIC: Valve works with Quadratic flow characteristic

eLON_DCM_FREE_DEFINED: Valve works with free defined flow characteristic

eLON_DCM_2WAY_VALVE:

eLON_DCM_MIXING_VALVE:

eLON_DCM_DIVERTING_VALVE:

eLON_DCM_INVFNC_QCK_OPN:

eLON_DCM_INVFNC_EQL_PERC:

eLON_DCM_INVFNC_QUAD:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.22 E_LON_device_select_t

Used by: SNVT_dev_fault / SNVT_dev_maint / SNVT_dev_status

```

TYPE E_LON_device_select_t :
(
    eLON_DV_NUL      := -1,
    eLON_DV_PUMP_CTRL := 0,
    eLON_DV_VALVE_POS := 1
)
END_TYPE

```

eLON_DV_NUL: Invalid value

eLON_DV_PUMP_CTRL: Use union for SFPTpumpController values

eLON_DV_VALVE_POS: Use union for SFPTvalvePositioner values

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.23 E_LON_discrete_levels_t

Used by: SNVT_clothes_w_c / SNVT_lev_disc

```

TYPE E_LON_discrete_levels_t :
(
    eLON_ST_NUL   := -1,
    eLON_ST_OFF   := 0,
    eLON_ST_LOW   := 1,
    eLON_ST_MED   := 2,
    eLON_ST_HIGH  := 3,
    eLON_ST_ON    := 4
)
END_TYPE

```

eLON_ST_NUL:

eLON_ST_OFF:

eLON_ST_LOW:

eLON_ST_MED:

eLON_ST_HIGH:

eLON_ST_ON:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.24 E_LON_emerg_t

Used by: SNVT_hvac_emerg

```

TYPE E_LON_emerg_t :
(
    eLON_EMERG_NUL      := -1,
    eLON_EMERG_NORMAL   := 0,

```

```

eLON_EMERG_PRESSURIZE := 1,
eLON_EMERG_DEPRESSURIZE := 2,
eLON_EMERG_PURGE := 3,
eLON_EMERG_SHUTDOWN := 4,
eLON_EMERG_FIRE := 5
)
END_TYPE

```

eLON_EMERG_NUL: Invalid Value

eLON_EMERG_NORMAL: No emergency mode

eLON_EMERG_PRESSURIZE: Emergency pressurize mode

eLON_EMERG_DEPRESSURIZE: Emergency depressurize mode

eLON_EMERG_PURGE: Emergency purge mode

eLON_EMERG_SHUTDOWN: Emergency shutdown mode

eLON_EMERG_FIRE: Emergency fire mode

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.25 E_LON_ent_cmd_t

Used by: SNVT_ent_state

```

TYPE E_LON_ent_cmd_t :
(
  eLON_ES_NUL := -1,
  eLON_ES_UNDEFINED := 0,
  eLON_ES_OPEN_PULS := 1,
  eLON_ES_OPEN := 2,
  eLON_ES_CLOSE := 3,
  eLON_ES_STOP := 4,
  eLON_ES_STOP_RESUME := 5,
  eLON_ES_ENTRY_REQ := 6,
  eLON_ES_EXIT_REQ := 7,
  eLON_ES_KEY_REQ := 8,
  eLON_ES_SAFETY_EXT_REQ := 9,
  eLON_ES_EMERGENCY_REQ := 10,
  eLON_ES_UPDATE_STATE := 11,
  eLON_ES_SAF_EXT_RESUME := 12,
  eLON_ES_EMERG_RESUME := 13
)
END_TYPE

```

eLON_ES_NUL: Invalid Value

eLON_ES_UNDEFINED: State is not yet defined

eLON_ES_OPEN_PULS: Open the device and close it when back in normal position

eLON_ES_OPEN: Open the device if not locked

eLON_ES_CLOSE: Close the device

eLON_ES_STOP: Stop the device

eLON_ES_STOP_RESUME: Continue after stop command

eLON_ES_ENTRY_REQ: Entry request, access in to the area

eLON_ES_EXIT_REQ: Exit request, access out from the area

eLON_ES_KEY_REQ: Exit request, access out from the area

eLON_ES_SAFETY_EXT_REQ: Safety request, the device will go to a pre-defined safety position/mode

eLON_ES_EMERGENCY_REQ: Emergency request, the device will go to an pre-defined emergency position/mode

eLON_ES_UPDATE_STATE: Update the current state and mode

eLON_ES_SAF_EXT_RESUME: Resume after Safety function

eLON_ES_EMERG_RESUME: Resume after Emergency function

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.26 E_LON_ent_opmode_cmd_t

Used by: SNVT_ent_opmode / SNVT_ent_status

```

TYPE E_LON_ent_opmode_cmd_t :
(
  eLON_EM_NUL           := -1,
  eLON_EM_UNDEFINED     := 0,
  eLON_EM_AUTO          := 1,
  eLON_EM_AUTO_RED      := 2,
  eLON_EM_CLOSE_LOCK    := 3,
  eLON_EM_CLOSE_UNLOCK  := 4,
  eLON_EM_EXIT_ONLY     := 5,
  eLON_EM_OPEN          := 6,
  eLON_EM_OPEN_ONCE     := 7,
  eLON_EM_MANUAL        := 8,
  eLON_EM_FIRE          := 9,
  eLON_EM_EVAC          := 10,
  eLON_EM_WEATHER       := 11,
  eLON_EM_DAY_LOCKING   := 12,
  eLON_EM_NIGHT_LOCKING := 13,
  eLON_EM_BLOCKED       := 14,
  eLON_EM_SERVICE       := 15,
  eLON_EM_ENTRY_ONLY    := 16
)
END_TYPE

```

eLON_EM_NUL: Invalid Value

eLON_EM_UNDEFINED: Operation mode is not defined

eLON_EM_AUTO: Operation mode is AUTOMATIC

eLON_EM_AUTO_RED: Operation mode is AUTOMATIC with reduced width

eLON_EM_CLOSE_LOCK: Operation mode is CLOSE AND LOCK

eLON_EM_CLOSE_UNLOCK: Operation mode is CLOSE AND UNLOCK

eLON_EM_EXIT_ONLY: Operation mode is EXIT ONLY

eLON_EM_OPEN: Operation mode is OPEN

eLON_EM_OPEN_ONCE: Operation mode is OPEN AND CLOSE ONCE

eLON_EM_MANUAL: Operation mode is MANUAL

eLON_EM_FIRE: Operation mode is FIRE

eLON_EM_EVAC: Operation mode is EVACUATION

eLON_EM_WEATHER: Operation mode is WEATHER MODE

eLON_EM_DAY_LOCKING: Operation mode is DAY_LOCKING, locking with reduced level of security

eLON_EM_NIGHT_LOCKING: Operation mode is NIGHT_LOCKING, locking with maximum level of security

eLON_EM_BLOCKED: Operation mode is BLOCKED, no operations is allowed

eLON_EM_SERVICE: Operation mode is SERVICE

eLON_EM_ENTRY_ONLY: Operation mode is ENTRY_ONLY

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.27 E_LON_evap_t

Used by: SNVT_evap_state

```

TYPE E_LON_evap_t :
(
  eLON_EVAP_NUL           := -1,
  eLON_EVAP_NO_COOLING    := 0,
  eLON_EVAP_COOLING       := 1,
  eLON_EVAP_EMERG_COOLING := 2
)
END_TYPE

```

eLON_EVAP_NUL: Invalid Value

eLON_EVAP_NO_COOLING: Object not performing cooling (off cycle or disabled)

eLON_EVAP_COOLING: Object currently cooling

eLON_EVAP_EMERG_COOLING: Object performing emergency cooling

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.28 E_LON_ex_control_t

Used by: SNVT_ex_control

```

TYPE E_LON_ex_control_t :
(
  eLON_EX_CONTROL_NUL       := -1,
  eLON_EX_CONTROL_NONE      := 0,
  eLON_EX_CONTROL_OTHER     := 1,
  eLON_EX_CONTROL_THIS_ADDR := 2
)
END_TYPE

```

eLON_EX_CONTROL_NUL: The control status of the item is unknown

eLON_EX_CONTROL_NONE: Nothing has control of the item.

eLON_EX_CONTROL_OTHER: Some unidentified entity has control of the item.

eLON_EX_CONTROL_THIS_ADDR: A device has control of the item. The network address of this device is specified in the control_device_addr

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.29 E_LON_file_request_t

Used by: SNVT_file_req


```

TYPE E_LON_file_request_t :
(
  eLON_FR_NUL           := -1,
  eLON_FR_OPEN_TO_SEND  := 0,
  eLON_FR_OPEN_TO_RECEIVE := 1,
  eLON_FR_CLOSE_FILE    := 2,
  eLON_FR_CLOSE_DELETE_FILE := 3,
  eLON_FR_DIRECTORY_LOOKUP := 4,
  eLON_FR_OPEN_TO_SEND_RA := 5,
  eLON_FR_OPEN_TO_RECEIVE_RA := 6
)
END_TYPE

```

eLON_FR_NUL: Invalid Value

eLON_FR_OPEN_TO_SEND: Sequential access read

eLON_FR_OPEN_TO_RECEIVE: Sequential access write

eLON_FR_CLOSE_FILE: Close and save file

eLON_FR_CLOSE_DELETE_FILE: Close and delete file

eLON_FR_DIRECTORY_LOOKUP: Retrieve directory entry

eLON_FR_OPEN_TO_SEND_RA: Random access read

eLON_FR_OPEN_TO_RECEIVE_RA: Random access write

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.30 E_LON_file_status_t

Used by: SNVT_file_status

```

TYPE E_LON_file_status_t :
(
  eLON_FS_NUL           := -1,
  eLON_FS_XFER_OK       := 0,
  eLON_FS_LOOKUP_OK     := 1,
  eLON_FS_OPEN_FAIL     := 2,
  eLON_FS_LOOKUP_ERR    := 3,
  eLON_FS_XFER_UNDERWAY := 4,
  eLON_FS_IO_ERR        := 5,
  eLON_FS_TIMEOUT_ERR   := 6,
  eLON_FS_WINDOW_ERR    := 7,
  eLON_FS_AUTH_ERR      := 8,
  eLON_FS_ACCESS_UNAVAIL := 9,
  eLON_FS_SEEK_INVALID  := 10,
  eLON_FS_SEEK_WAIT     := 11
)
END_TYPE

```

eLON_FS_NUL: Invalid Value

eLON_FS_XFER_OK: File transfer successful

eLON_FS_LOOKUP_OK: Directory lookup successful

eLON_FS_OPEN_FAIL: Error on opening file

eLON_FS_LOOKUP_ERR: Error on directory lookup

eLON_FS_XFER_UNDERWAY: File transfer in progress

eLON_FS_IO_ERR: Error on reading/writing file

eLON_FS_TIMEOUT_ERR: File transfer timed out

eLON_FS_WINDOW_ERR: Window sequence error

eLON_FS_AUTH_ERR: Authentication failure

eLON_FS_ACCESS_UNAVAIL: Access mode not supported

eLON_FS_SEEK_INVALID: Random access beyond EOF

eLON_FS_SEEK_WAIT:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.31 E_LON_fire_indicator_t

Used by: SNVT_fire_indcte

```

TYPE E_LON_fire_indicator_t :
(
  eLON_FN_NUL           := -1,
  eLON_FN_UNDEFINED     := 0,
  eLON_FN_STROBE_U      := 1,
  eLON_FN_STROBE_S      := 2,
  eLON_FN_HORN          := 3,
  eLON_FN_CHIME         := 4,
  eLON_FN_BELL          := 5,
  eLON_FN_SOUNDER       := 6,
  eLON_FN_SPEAKER       := 7,
  eLON_FN_UNIVERSAL     := 8
)
END_TYPE

```

eLON_FN_NUL: Invalid Value

eLON_FN_UNDEFINED: Undefined indicator

eLON_FN_STROBE_U: The indicator is un-synchronized

eLON_FN_STROBE_S: The indicator is synchronized

eLON_FN_HORN: The indicator is a DC input, pre coded Horn

eLON_FN_CHIME: The indicator is a DC input, pre coded Chime

eLON_FN_BELL: The indicator is a DC input

eLON_FN_SOUNDER: The indicator is powered from the device

eLON_FN_SPEAKER: The indicator is an AC input for the speaker

eLON_FN_UNIVERSAL: General purpose indicator

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.32 E_LON_fire_initiator_t

Used by: SNVT_fire_init

```

TYPE E_LON_fire_initiator_t :
(
  eLON_FI_NUL           := -1,
  eLON_FI_UNDEFINED     := 0,
  eLON_FI_THERMAL_FIXED := 1,
  eLON_FI_SMOKE_ION     := 2,
  eLON_FI_MULTI_ION_THERMAL := 3,
  eLON_FI_SMOKE_PHOTO   := 4,
  eLON_FI_MULTI_PHOTO_THERMAL := 5,
)

```

```

eLON_FI_MULTI_PHOTO_ION      := 6,
eLON_FI_MULTI_PHOTO_ION_THERMAL := 7,
eLON_FI_THERMAL_ROR          := 8,
eLON_FI_MULTI_THERMAL_ROR    := 9,
eLON_FI_MANUAL_PULL          := 10,
eLON_FI_WATER_FLOW           := 11,
eLON_FI_WATER_FLOW_TAMPER    := 12,
eLON_FI_STATUS_ONLY          := 13,
eLON_FI_MANUAL_CALL          := 14,
eLON_FI_FIREMAN_CALL         := 15,
eLON_FI_UNIVERSAL            := 16
)
END_TYPE

```

eLON_FI_NUL: Invalid Value

eLON_FI_UNDEFINED: Initiator is undefined

eLON_FI_THERMAL_FIXED: Initiator is thermal fixed (heat)

eLON_FI_SMOKE_ION: Initiator is smoke and ion

eLON_FI_MULTI_ION_THERMAL: Initiator is multi-ion and thermal

eLON_FI_SMOKE_PHOTO: Initiator is smoke and photo

eLON_FI_MULTI_PHOTO_THERMAL: Initiator is multi-photo and thermal

eLON_FI_MULTI_PHOTO_ION: Initiator is multi-photo and ion

eLON_FI_MULTI_PHOTO_ION_THERMAL: Initiator is multi-photo, ion and thermal

eLON_FI_THERMAL_ROR: Initiator is thermal fixed and Rate of Rise

eLON_FI_MULTI_THERMAL_ROR: Initiator is multi-thermal and Rate of Rise

eLON_FI_MANUAL_PULL: Initiator is manual pull

eLON_FI_WATER_FLOW: Initiator is water flow

eLON_FI_WATER_FLOW_TAMPER: Initiator is water flow and tamper

eLON_FI_STATUS_ONLY: Initiator is status only

eLON_FI_MANUAL_CALL: Initiator is a manual call point

eLON_FI_FIREMAN_CALL: Initiator is a fireman call point

eLON_FI_UNIVERSAL: General purpose initiator definition

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.33 E_LON_fire_test_t

Used by: SNVT_fire_test

```

TYPE E_LON_fire_test_t :
(
  eLON_FT_NUL      := -1,
  eLON_FT_NORMAL   := 0,
  eLON_FT_RESET    := 1,
  eLON_FT_TEST     := 2,
  eLON_FT_NOTEST   := 3
)
END_TYPE

```

eLON_FT_NUL: Invalid Value

eLON_FT_NORMAL: Return object to normal status

eLON_FT_RESET: Perform a RESET function (for smoke detectors)

eLON_FT_TEST: Go into TEST mode

eLON_FT_NOTEST: Exit TEST mode

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.34 E_LON_flow_direction_t

Used by: SNVT_flow_dir

```

TYPE E_LON_flow_direction_t :
(
  eLON_FD_NUL    := -1,
  eLON_FD_NONE   := 0,
  eLON_FD_OUT    := 1,
  eLON_FD_IN     := 2,
  eLON_FD_ANY    := 3
)
END_TYPE

```

eLON_FD_NUL: Invalid Value

eLON_FD_NONE: No flow/movement allowed

eLON_FD_OUT: Exit/out/away direction only

eLON_FD_IN: Entry/in/toward direction only

eLON_FD_ANY: No restriction on flow/movement

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.35 E_LON_gfci_status_t

Used by: SNVT_gfci_status

```

TYPE E_LON_gfci_status_t :
(
  eLON_GFCI_NUL           := -1,
  eLON_GFCI_UNKNOWN       := 0,
  eLON_GFCI_NORMAL        := 1,
  eLON_GFCI_TRIPPED       := 2,
  eLON_GFCI_TEST_FAILED   := 3,
  eLON_GFCI_TEST_PASSED   := 4,
  eLON_GFCI_TEST_NOW      := 5
)
END_TYPE

```

eLON_GFCI_NUL: Invalid Value

eLON_GFCI_UNKNOWN: Unknown response

eLON_GFCI_NORMAL: Normal GFCI operating condition

eLON_GFCI_TRIPPED: A ground-fault has caused the GFCI to interrupt the circuit

eLON_GFCI_TEST_FAILED: The GFCI failed testing

eLON_GFCI_TEST_PASSED: The GFCI passed testing

eLON_GFCI_TEST_NOW: The GFCI needs to be tested

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.36 E_LON_hvac_hvt_t

Used by: SNVT_hvac_type

```

TYPE E_LON_hvac_hvt_t :
(
  eLON_HVT_NUL           := -1,
  eLON_HVT_GENERIC       := 0,
  eLON_HVT_FAN_COIL      := 1,
  eLON_HVT_VAV           := 2,
  eLON_HVT_HEAT_PUMP     := 3,
  eLON_HVT_ROOFTOP       := 4,
  eLON_HVT_UNIT_VENT     := 5,
  eLON_HVT_CHILL_CEIL    := 6,
  eLON_HVT_RADIATOR      := 7,
  eLON_HVT_AHU           := 8,
  eLON_HVT_SELF_CONT     := 9
)
END_TYPE

```

eLON_HVT_NUL: Invalid Value**eLON_HVT_GENERIC:** Generic**eLON_HVT_FAN_COIL:** Fan Coil**eLON_HVT_VAV:** Variable Air Volume Terminal**eLON_HVT_HEAT_PUMP:** Heat Pump**eLON_HVT_ROOFTOP:** Rooftop Unit**eLON_HVT_UNIT_VENT:** Unit Ventilator**eLON_HVT_CHILL_CEIL:** Chilled Ceiling**eLON_HVT_RADIATOR:** Radiator**eLON_HVT_AHU:** Air Handling Unit**eLON_HVT_SELF_CONT:** Self-Contained Unit

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.37 E_LON_hvac_overid_t

Used by: SNVT_hvac_overid

```

TYPE E_LON_hvac_overid_t :
(
  eLON_HVO_NUL           := -1,
  eLON_HVO_OFF           := 0,
  eLON_HVO_POSITION      := 1,
  eLON_HVO_FLOW_VALUE    := 2,
  eLON_HVO_FLOW_PERCENT  := 3,
  eLON_HVO_OPEN          := 4,
  eLON_HVO_CLOSE         := 5,
  eLON_HVO_MINIMUM       := 6,
  eLON_HVO_MAXIMUM       := 7,
  eLON_HVO_UNUSED8       := 8,
  eLON_HVO_UNUSED9       := 9,
  eLON_HVO_UNUSED10      := 10,
  eLON_HVO_UNUSED11      := 11,

```

```

eLON_HVO_UNUSED12      := 12,
eLON_HVO_UNUSED13      := 13,
eLON_HVO_UNUSED14      := 14,
eLON_HVO_UNUSED15      := 15,
eLON_HVO_UNUSED16      := 16,
eLON_HVO_POSITION_1    := 17,
eLON_HVO_FLOW_VALUE_1  := 18,
eLON_HVO_FLOW_PERCENT_1 := 19,
eLON_HVO_OPEN_1        := 20,
eLON_HVO_CLOSE_1       := 21,
eLON_HVO_MINIMUM_1     := 22,
eLON_HVO_MAXIMUM_1     := 23,
eLON_HVO_UNUSED24      := 24,
eLON_HVO_UNUSED25      := 25,
eLON_HVO_UNUSED26      := 26,
eLON_HVO_UNUSED27      := 27,
eLON_HVO_UNUSED28      := 28,
eLON_HVO_UNUSED29      := 29,
eLON_HVO_UNUSED30      := 30,
eLON_HVO_UNUSED31      := 31,
eLON_HVO_UNUSED32      := 32,
eLON_HVO_POSITION_2    := 33,
eLON_HVO_FLOW_VALUE_2  := 34,
eLON_HVO_FLOW_PERCENT_2 := 35,
eLON_HVO_OPEN_2        := 36,
eLON_HVO_CLOSE_2       := 37,
eLON_HVO_MINIMUM_2     := 38,
eLON_HVO_MAXIMUM_2     := 39,
eLON_HVO_UNUSED40      := 40,
eLON_HVO_UNUSED41      := 41,
eLON_HVO_UNUSED42      := 42,
eLON_HVO_UNUSED43      := 43,
eLON_HVO_UNUSED44      := 44,
eLON_HVO_UNUSED45      := 45,
eLON_HVO_UNUSED46      := 46,
eLON_HVO_UNUSED47      := 47,
eLON_HVO_UNUSED48      := 48
)
END_TYPE

```

eLON_HVO_NUL: Invalid Value

eLON_HVO_OFF: Not overridden

eLON_HVO_POSITION:

eLON_HVO_FLOW_VALUE: Override flow in liters/sec - use flow field

eLON_HVO_FLOW_PERCENT: Override flow percentage - use percent field

eLON_HVO_OPEN: Override to position = 100%

eLON_HVO_CLOSE: Override to position = 0%

eLON_HVO_MINIMUM: Override to configured minimum

eLON_HVO_MAXIMUM: Override to configured maximum

eLON_HVO_UNUSED8:

eLON_HVO_UNUSED9:

eLON_HVO_UNUSED10:

eLON_HVO_UNUSED11:

eLON_HVO_UNUSED12:

eLON_HVO_UNUSED13:

eLON_HVO_UNUSED14:

eLON_HVO_UNUSED15:

eLON_HVO_UNUSED16:

eLON_HVO_POSITION_1:

eLON_HVO_FLOW_VALUE_1: Override flow in liters/sec - use flow field

eLON_HVO_FLOW_PERCENT_1: Override flow percentage - use percent field

eLON_HVO_OPEN_1: Override to position = 100%

eLON_HVO_CLOSE_1: Override to position = 0%

eLON_HVO_MINIMUM_1: Override to configured minimum

eLON_HVO_MAXIMUM_1: Override to configured maximum

eLON_HVO_UNUSED24:

eLON_HVO_UNUSED25:

eLON_HVO_UNUSED26:

eLON_HVO_UNUSED27:

eLON_HVO_UNUSED28:

eLON_HVO_UNUSED29:

eLON_HVO_UNUSED30:

eLON_HVO_UNUSED31:

eLON_HVO_UNUSED32:

eLON_HVO_POSITION_2:

eLON_HVO_FLOW_VALUE_2: Override flow in liters/sec - use flow field

eLON_HVO_FLOW_PERCENT_2: Override flow percentage - use percent field

eLON_HVO_OPEN_2: Override to position = 100%

eLON_HVO_CLOSE_2: Override to position = 0%

eLON_HVO_MINIMUM_2: Override to configured minimum

eLON_HVO_MAXIMUM_2: Override to configured maximum

eLON_HVO_UNUSED40:

eLON_HVO_UNUSED41:

eLON_HVO_UNUSED42:

eLON_HVO_UNUSED43:

eLON_HVO_UNUSED44:

eLON_HVO_UNUSED45:

eLON_HVO_UNUSED46:

eLON_HVO_UNUSED47:

eLON_HVO_UNUSED48:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.38 E_LON_hvac_t

Used by: SNVT_chlr_status / SNVT_hvac_mode / SNVT_hvac_status

```

TYPE E_LON_hvac_t :
(
  eLON_HVAC_NUL           := -1,
  eLON_HVAC_AUTO          := 0,
  eLON_HVAC_HEAT          := 1,
  eLON_HVAC_MRNG_WRMUP   := 2,
  eLON_HVAC_COOL          := 3,
  eLON_HVAC_NIGHT_PURGE  := 4,
  eLON_HVAC_PRE_COOL     := 5,
  eLON_HVAC_OFF           := 6,
  eLON_HVAC_TEST          := 7,
  eLON_HVAC_EMERG_HEAT   := 8,
  eLON_HVAC_FAN_ONLY     := 9,
  eLON_HVAC_FREE_COOL    := 10,
  eLON_HVAC_ICE           := 11,
  eLON_HVAC_MAX_HEAT     := 12,
  eLON_HVAC_ECONOMY      := 13,
  eLON_HVAC_DEHUMID      := 14,
  eLON_HVAC_CALIBRATE    := 15,
  eLON_HVAC_EMERG_COOL   := 16,
  eLON_HVAC_EMERG_STEAM  := 17,
  eLON_HVAC_MAX_COOL     := 18,
  eLON_HVAC_HVC_LOAD     := 19,
  eLON_HVAC_NO_LOAD      := 20
)
END_TYPE

```

eLON_HVAC_NUL: Invalid value

eLON_HVAC_AUTO: Controller automatically changes between application modes

eLON_HVAC_HEAT: Heating only

eLON_HVAC_MRNG_WRMUP: Application-specific morning warm-up

eLON_HVAC_COOL: Cooling only

eLON_HVAC_NIGHT_PURGE: Application-specific night purge

eLON_HVAC_PRE_COOL: Application-specific pre-cool

eLON_HVAC_OFF: Controller not controlling outputs

eLON_HVAC_TEST: Equipment being tested

eLON_HVAC_EMERG_HEAT: Emergency heat mode (heat pump)

eLON_HVAC_FAN_ONLY: Air not conditioned, fan turned on

eLON_HVAC_FREE_COOL: Cooling with compressor not running

eLON_HVAC_ICE: Ice-making mode

eLON_HVAC_MAX_HEAT: Maximum heating mode

eLON_HVAC_ECONOMY: Economic Heat/Cool mode

eLON_HVAC_DEHUMID: Dehumidification mode

eLON_HVAC_CALIBRATE: Calibration mode

eLON_HVAC_EMERG_COOL: Emergency cool mode

eLON_HVAC_EMERG_STEAM: Emergency steam mode

eLON_HVAC_MAX_COOL:

eLON_HVAC_HVC_LOAD:

eLON_HVAC_NO_LOAD:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.39 E_LON_learn_mode_t

Used by: SNVT_preset

```

TYPE E_LON_learn_mode_t :
(
  eLON_LN_NUL           := -1,
  eLON_LN_RECALL        := 0,
  eLON_LN_LEARN_CURRENT := 1,
  eLON_LN_LEARN_VALUE   := 2,
  eLON_LN_REPORT_VALUE  := 3
)
END_TYPE

```

eLON_LN_NUL: Invalid Value

eLON_LN_RECALL: Recall

eLON_LN_LEARN_CURRENT: Learn present value

eLON_LN_LEARN_VALUE: Learn given value

eLON_LN_REPORT_VALUE: Report the value

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.40 E_LON_log_status_t

Used by: SCPTlogRecord / SNVT_log_status

```

TYPE E_LON_log_status_t :
(
  eLON_LS_NUL           := -1,
  eLON_LS_ENABLED       := 0,
  eLON_LS_DISABLED      := 1,
  eLON_LS_FULL          := 2,
  eLON_LS_OVERFLOW_ERR  := 3,
  eLON_LS_INVALID_LOG_ERR := 4,
  eLON_LS_APP_ERR       := 5
)
END_TYPE

```

eLON_LS_NUL: Invalid value

eLON_LS_ENABLED: Log enabled

eLON_LS_DISABLED: Log disabled

eLON_LS_FULL: Log enabled and full

eLON_LS_OVERFLOW_ERR: Log enabled, overflow occurred

eLON_LS_INVALID_LOG_ERR: Invalid log selected

eLON_LS_APP_ERR: Other application error

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.41 E_LON_motor_state_t

Used by: SNVT_motor_state / SNVT_pumpset_mn

```
TYPE E_LON_motor_state_t :
(
  eLON_MOTOR_NUL           := -1,
  eLON_MOTOR_STOPPED       := 0,
  eLON_MOTOR_STARTING      := 1,
  eLON_MOTOR_ACCELERATING  := 2,
  eLON_MOTOR_AT_STANDBY    := 3,
  eLON_MOTOR_AT_NORMAL     := 4,
  eLON_MOTOR_AT_REFERENCE  := 5,
  eLON_MOTOR_DECELERATING  := 6,
  eLON_MOTOR_STOPPING      := 7
)
END_TYPE
```

eLON_MOTOR_NUL: The state of the motor is unknown (invalid value)

eLON_MOTOR_STOPPED: The motor is not running

eLON_MOTOR_STARTING: The motor is performing its start-up sequence

eLON_MOTOR_ACCELERATING: The motor is running. Speed is increasing.

eLON_MOTOR_AT_STANDBY: The motor is running in its standby mode

eLON_MOTOR_AT_NORMAL: The motor is running in its normal operational mode

eLON_MOTOR_AT_REFERENCE: The motor is running at its reference speed.

eLON_MOTOR_DECELERATING: The motor is running. Speed is decreasing.

eLON_MOTOR_STOPPING: The motor is running, beginning its shutdown sequence.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.42 E_LON_nv_type_category_t

Used by: SNVT_nv_type

```
TYPE E_LON_nv_type_category_t :
(
  eLON_NVT_CAT_NUL           := -1,
  eLON_NVT_CAT_INITIAL       := 0,
  eLON_NVT_CAT_SIGNED_CHAR   := 1,
  eLON_NVT_CAT_UNSIGNED_CHAR := 2,
  eLON_NVT_CAT_SIGNED_SHORT  := 3,
  eLON_NVT_CAT_UNSIGNED_SHORT := 4,
  eLON_NVT_CAT_SIGNED_LONG   := 5,
  eLON_NVT_CAT_UNSIGNED_LONG  := 6,
  eLON_NVT_CAT_ENUM          := 7,
  eLON_NVT_CAT_ARRAY         := 8,
  eLON_NVT_CAT_STRUCT        := 9,
  eLON_NVT_CAT_UNION         := 10,
  eLON_NVT_CAT_BITFIELD      := 11,
  eLON_NVT_CAT_FLOAT         := 12,
  eLON_NVT_CAT_SIGNED_QUAD   := 13,
  eLON_NVT_CAT_REFERENCE     := 14
)
END_TYPE
```

eLON_NVT_CAT_NUL: Invalid Value

eLON_NVT_CAT_INITIAL:

eLON_NVT_CAT_SIGNED_CHAR: 8-bit signed character

eLON_NVT_CAT_UNSIGNED_CHAR: 8-bit unsigned character

eLON_NVT_CAT_SIGNED_SHORT: 8-bit signed integer

eLON_NVT_CAT_UNSIGNED_SHORT: 8-bit unsigned integer

eLON_NVT_CAT_SIGNED_LONG: 16-bit signed integer

eLON_NVT_CAT_UNSIGNED_LONG: 16-bit unsigned integer

eLON_NVT_CAT_ENUM: 8-bit enumeration

eLON_NVT_CAT_ARRAY: Array

eLON_NVT_CAT_STRUCT: Structure

eLON_NVT_CAT_UNION: Union

eLON_NVT_CAT_BITFIELD: Bitfield

eLON_NVT_CAT_FLOAT: 32-bit IEC 60559 (IEEE 754) floating-point value

eLON_NVT_CAT_SIGNED_QUAD: 32-bit signed integer

eLON_NVT_CAT_REFERENCE: Reference type

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.43 E_LON_object_request_t

Used by: SNVT_obj_request

```

TYPE E_LON_object_request_t :
(
  eLON_RQ_NUL                := -1,
  eLON_RQ_NORMAL              := 0,
  eLON_RQ_DISABLED            := 1,
  eLON_RQ_UPDATE_STATUS      := 2,
  eLON_RQ_SELF_TEST           := 3,
  eLON_RQ_UPDATE_ALARM        := 4,
  eLON_RQ_REPORT_MASK         := 5,
  eLON_RQ_OVERRIDE            := 6,
  eLON_RQ_ENABLE              := 7,
  eLON_RQ_RMV_OVERRIDE        := 8,
  eLON_RQ_CLEAR_STATUS        := 9,
  eLON_RQ_CLEAR_ALARM         := 10,
  eLON_RQ_ALARM_NOTIFY_ENABLED := 11,
  eLON_RQ_ALARM_NOTIFY_DISABLED := 12,
  eLON_RQ_MANUAL_CTRL         := 13,
  eLON_RQ_REMOTE_CTRL         := 14,
  eLON_RQ_PROGRAM             := 15,
  eLON_RQ_CLEAR_RESET         := 16,
  eLON_RQ_RESET               := 17,
  eLON_RQ_CLEAR_LOG           := 18
)
END_TYPE

```

eLON_RQ_NUL: Invalid Value

eLON_RQ_NORMAL: Enable object and remove override

eLON_RQ_DISABLED: Disable object

eLON_RQ_UPDATE_STATUS: Report object status

eLON_RQ_SELF_TEST: Perform object self-test

eLON_RQ_UPDATE_ALARM: Update alarm status

eLON_RQ_REPORT_MASK: Report status bit mask

eLON_RQ_OVERRIDE: Override object

eLON_RQ_ENABLE: Enable object

eLON_RQ_RMV_OVERRIDE: Remove object override

eLON_RQ_CLEAR_STATUS: Clear object status

eLON_RQ_CLEAR_ALARM: Clear object alarm

eLON_RQ_ALARM_NOTIFY_ENABLED: Enable alarm notification

eLON_RQ_ALARM_NOTIFY_DISABLED: Disable alarm notification

eLON_RQ_MANUAL_CTRL: Enable object for manual control

eLON_RQ_REMOTE_CTRL: Enable object for remote control

eLON_RQ_PROGRAM: Enable programming of special configuration properties

eLON_RQ_CLEAR_RESET: Clear reset-complete flag (reset_complete)

eLON_RQ_RESET: Execute reset-sequence of object

eLON_RQ_CLEAR_LOG: Clear data log

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.44 E_LON_occup_t

Used by: SNVT_occupancy / SNVT_tod_event

```

TYPE E_LON_occup_t :
(
  eLON_OC_NUL           := -1,
  eLON_OC_OCCUPIED      := 0,
  eLON_OC_UNOCCUPIED    := 1,
  eLON_OC_BYPASS        := 2,
  eLON_OC_STANDBY       := 3
)
END_TYPE

```

eLON_OC_NUL: Invalid Value

eLON_OC_OCCUPIED: Area is occupied

eLON_OC_UNOCCUPIED: Area is unoccupied

eLON_OC_BYPASS: Area is temporarily occupied for the bypass period

eLON_OC_STANDBY: Area is temporarily unoccupied

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.45 E_LON_override_t

Used by: SNVT_override

```

TYPE E_LON_override_t :
(
  eLON_OV_NUL           := -1,
  eLON_OV_RETAIN        := 0,
  eLON_OV_SPECIFIED     := 1,

```

```

    eLON_OV_DEFAULT    := 2
)
END_TYPE

```

eLON_OV_NUL: Invalid Value

eLON_OV_RETAIN: Retain current level

eLON_OV_SPECIFIED: Go to specified level

eLON_OV_DEFAULT: Go to default level

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.46 E_LON_pan_dir_t

Used by: SNVT_ptz

```

TYPE E_LON_pan_dir_t :
(
    eLON_PAN_NUL      := -1,
    eLON_PAN_STOP     := 0,
    eLON_PAN_RIGHT    := 1,
    eLON_PAN_LEFT     := 2
)
END_TYPE

```

eLON_PAN_NUL: Invalid Value

eLON_PAN_STOP: Stop panning

eLON_PAN_RIGHT: Pan to the right

eLON_PAN_LEFT: Pan to the left

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.47 E_LON_priority_level_t

Used by: SNVT_alarm / SNVT_alarm_2 / SNVT_pumpset_mn

```

TYPE E_LON_priority_level_t :
(
    eLON_PR_NUL       := -1,
    eLON_PR_LEVEL_0   := 0,
    eLON_PR_LEVEL_1   := 1,
    eLON_PR_LEVEL_2   := 2,
    eLON_PR_LEVEL_3   := 3,
    eLON_PR_1         := 4,
    eLON_PR_2         := 5,
    eLON_PR_3         := 6,
    eLON_PR_4         := 7,
    eLON_PR_6         := 8,
    eLON_PR_8         := 9,
    eLON_PR_10        := 10,
    eLON_PR_16        := 11
)
END_TYPE

```

eLON_PR_NUL: Invalid Value

eLON_PR_LEVEL_0: Lowest alarm priority level

eLON_PR_LEVEL_1:

eLON_PR_LEVEL_2:

eLON_PR_LEVEL_3: Highest alarm priority level

eLON_PR_1: Life Safety Fire Alarms (BACnet Priority 2)

eLON_PR_2: Property Safety Fire Alarms (BACnet Priority 3)

eLON_PR_3: Fire Supervisory Alarm (BACnet Priority 4)

eLON_PR_4: Fire Trouble/Fault (Display) (BACnet Priority 5)

eLON_PR_6: Fire Pre-Alarm, HVAC Critical Equipment Alarm (BACnet Priority 6)

eLON_PR_8: HVAC Alarms (BACnet Priority 8)

eLON_PR_10: HVAC Critical Equipment RTN, Fire RTN (Display) (BACnet Priority 10)

eLON_PR_16: HVAC RTN (lowest priority) (BACnet Priority 16)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.48 E_LON_privacyzone_t

Used by: SNVT_privacyzone

```

TYPE E_LON_privacyzone_t :
(
  eLON_PZ_NUL           := -1,
  eLON_PZ_DISABLE       := 0,
  eLON_PZ_ENABLE        := 1,
  eLON_PZ_UPPER_LEFT    := 2,
  eLON_PZ_LOWER_RIGHT   := 3,
  eLON_PZ_ENTER         := 4,
  eLON_PZ_EXIT          := 5
)
END_TYPE

```

eLON_PZ_NUL: Invalid value

eLON_PZ_DISABLE: Disable privacy zone warning

eLON_PZ_ENABLE: Enable privacy zone warning

eLON_PZ_UPPER_LEFT: Set upper left corner

eLON_PZ_LOWER_RIGHT: Set lower right corner

eLON_PZ_ENTER: Privacy zone enter warning

eLON_PZ_EXIT: Privacy zone exit message

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.49 E_LON_rail_audio_sensor_type_t

Used by: SNVT_rac_ctrl / SNVT_rac_req

```

TYPE E_LON_rail_audio_sensor_type_t :
(
  eLON_RAST_NUL           := -1,
  eLON_RAST_CU_TYPE_1     := 0,
  eLON_RAST_CU_TYPE_2     := 1,
  eLON_RAST_CU_TYPE_3     := 2,

```

```

eLON_RAST_CU_TYPE_4      := 3,
eLON_RAST_LS_LINE_1     := 4,
eLON_RAST_LS_LINE_2     := 5,
eLON_RAST_LS_LINE_3     := 6,
eLON_RAST_LS_LINE_4     := 7,
eLON_RAST_LS_LINE_5     := 8,
eLON_RAST_LS_LINE_6     := 9,
eLON_RAST_LS_LINE_7     := 10,
eLON_RAST_LS_LINE_8     := 11,
eLON_RAST_PAU           := 12,
eLON_RAST_CFA_TYPE_1    := 13,
eLON_RAST_CFA_TYPE_2    := 14,
eLON_RAST_CFA_TYPE_3    := 15,
eLON_RAST_CFA_TYPE_4    := 16,
eLON_RAST_DVA           := 17,
eLON_RAST_ET_TYPE_1     := 18,
eLON_RAST_ET_TYPE_2     := 19,
eLON_RAST_USERDEF_TYPE_1 := 20,
eLON_RAST_USERDEF_TYPE_2 := 21,
eLON_RAST_USERDEF_TYPE_3 := 22,
eLON_RAST_USERDEF_TYPE_4 := 23
)
END_TYPE

```

eLON_RAST_NUL: Invalid Value

eLON_RAST_CU_TYPE_1: CU Type 1

eLON_RAST_CU_TYPE_2: CU Type 2

eLON_RAST_CU_TYPE_3:

eLON_RAST_CU_TYPE_4: CU Type 4

eLON_RAST_LS_LINE_1: LS Line 1

eLON_RAST_LS_LINE_2: LS Line 2

eLON_RAST_LS_LINE_3: LS Line 3

eLON_RAST_LS_LINE_4: LS Line 4

eLON_RAST_LS_LINE_5: LS Line 5

eLON_RAST_LS_LINE_6: LS Line 6

eLON_RAST_LS_LINE_7: LS Line 7

eLON_RAST_LS_LINE_8: LS Line 8

eLON_RAST_PAU: Public-Address Unit

eLON_RAST_CFA_TYPE_1: CFA Type 1

eLON_RAST_CFA_TYPE_2: CFA Type 2

eLON_RAST_CFA_TYPE_3: CFA Type 3

eLON_RAST_CFA_TYPE_4: CFA Type 4

eLON_RAST_DVA: DVA

eLON_RAST_ET_TYPE_1: ET Type 1

eLON_RAST_ET_TYPE_2: ET Type 2

eLON_RAST_USERDEF_TYPE_1: User-defined Type 1

eLON_RAST_USERDEF_TYPE_2: User-defined Type 2

eLON_RAST_USERDEF_TYPE_3: User-defined Type 3

eLON_RAST_USERDEF_TYPE_4: User-defined Type 4

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.50 E_LON_rail_audio_type_t

Used by: SNVT_rac_ctrl / SNVT_rac_req

```

TYPE E_LON_rail_audio_type_t :
(
  eLON_RAT_NUL           := -1,
  eLON_RAT_IC_REQ        := 0,
  eLON_RAT_IC_JOIN       := 1,
  eLON_RAT_IC_QUIT       := 2,
  eLON_RAT_IC_END        := 3,
  eLON_RAT_HW_RADIO_REQ  := 4,
  eLON_RAT_HW_RADIO_END  := 5,
  eLON_RAT_HW_PA_REQ     := 6,
  eLON_RAT_HW_PA_END     := 7,
  eLON_RAT_SW_PA_REQ     := 8,
  eLON_RAT_SW_PA_END     := 9,
  eLON_RAT_SW_PA_OR_REQ  := 10,
  eLON_RAT_SW_PA_OR_END  := 11,
  eLON_RAT_PAU_REQ       := 12,
  eLON_RAT_PAU_ACCEPT    := 13,
  eLON_RAT_PAU_CALL      := 14,
  eLON_RAT_PAU_END       := 15,
  eLON_RAT_ENTERT_REQ    := 16,
  eLON_RAT_ENTERT_END    := 17
)
END_TYPE

```

eLON_RAT_NUL:

eLON_RAT_IC_REQ:

eLON_RAT_IC_JOIN:

eLON_RAT_IC_QUIT:

eLON_RAT_IC_END:

eLON_RAT_HW_RADIO_REQ:

eLON_RAT_HW_RADIO_END:

eLON_RAT_HW_PA_REQ:

eLON_RAT_HW_PA_END:

eLON_RAT_SW_PA_REQ:

eLON_RAT_SW_PA_END:

eLON_RAT_SW_PA_OR_REQ:

eLON_RAT_SW_PA_OR_END:

eLON_RAT_PAU_REQ:

eLON_RAT_PAU_ACCEPT:

eLON_RAT_PAU_CALL:

eLON_RAT_PAU_END:

eLON_RAT_ENTERT_REQ:

eLON_RAT_ENTERT_END:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.51 E_LON_reg_val_unit_t

Used by: SNVT_reg_val / SNVT_reg_val_ts

```
TYPE E_LON_reg_val_unit_t :
```

```
(
  eLON_RVU_NUL    := -1,
  eLON_RVU_NONE   := 0,
  eLON_RVU_W      := 1,
  eLON_RVU_KW     := 2,
  eLON_RVU_MW     := 3,
  eLON_RVU_GW     := 4,
  eLON_RVU_VAR    := 5,
  eLON_RVU_KVAR   := 6,
  eLON_RVU_MVAR   := 7,
  eLON_RVU_GVAR   := 8,
  eLON_RVU_WH     := 9,
  eLON_RVU_KWH    := 10,
  eLON_RVU_MWH    := 11,
  eLON_RVU_GWH    := 12,
  eLON_RVU_VARH   := 13,
  eLON_RVU_KVARH  := 14,
  eLON_RVU_MVARH  := 15,
  eLON_RVU_GVARH  := 16,
  eLON_RVU_V      := 17,
  eLON_RVU_A      := 18,
  eLON_RVU_COSF   := 19,
  eLON_RVU_M3     := 20,
  eLON_RVU_L      := 21,
  eLON_RVU_ML     := 22,
  eLON_RVU_USGAL  := 23,
  eLON_RVU_GJ     := 24,
  eLON_RVU_MJ     := 25,
  eLON_RVU_MCAL   := 26,
  eLON_RVU_KCAL   := 27,
  eLON_RVU_MBTU   := 28,
  eLON_RVU_KBTU   := 29,
  eLON_RVU_MJH    := 30,
  eLON_RVU_MLS    := 31,
  eLON_RVU_LS     := 32,
  eLON_RVU_M3S    := 33,
  eLON_RVU_C      := 34,
  eLON_RVU_LH     := 35,
  eLON_RVU_VA     := 36,
  eLON_RVU_KVA    := 37,
  eLON_RVU_MVA    := 38,
  eLON_RVU_GVA    := 39,
  eLON_RVU_VAH    := 40,
  eLON_RVU_KVAH   := 41,
  eLON_RVU_MVAH   := 42,
  eLON_RVU_GVAH   := 43
)
```

```
END_TYPE
```

eLON_RVU_NUL: invalid unit of measure (INVALID)

eLON_RVU_NONE: no units specified ()

eLON_RVU_W: Watts (W)

eLON_RVU_KW: kiloWatts (kW)

eLON_RVU_MW: megaWatts (MW)

eLON_RVU_GW: gigaWatts (GW)

eLON_RVU_VAR: Volt-Amperes reactive (var)

eLON_RVU_KVAR: kilo-Volt-Amperes reactive (kvar)

eLON_RVU_MVAR: mega-Volt-Amperes reactive (Mvar)
eLON_RVU_GVAR: giga-Volt-Amperes reactive (Gvar)
eLON_RVU_WH: Watt-hour (Wh)
eLON_RVU_KWH: kiloWatt-hour (kWh)
eLON_RVU_MWH: megaWatt-hour (MWh)
eLON_RVU_GWH: gigaWatt-hour (GWh)
eLON_RVU_VARH: Volt-Amperes reactive -hour (varh)
eLON_RVU_KVARH: kilo-Volt-Amperes reactive -hour (kvarh)
eLON_RVU_MVARH: mega-Volt-Amperes reactive -hour (Mvarh)
eLON_RVU_GVARH: giga-Volt-Amperes reactive -hour (Gvarh)
eLON_RVU_V: Volts (V)
eLON_RVU_A: Amps (A)
eLON_RVU_COSF: (cosf)
eLON_RVU_M3: cubic meters (m³)(cu.m)
eLON_RVU_L: liters (l)
eLON_RVU_ML: milliliters (ml)
eLON_RVU_USGAL: U.S. Gallons (USG)
eLON_RVU_GJ: giga-Joules (GJ)
eLON_RVU_MJ: mega-Joules (MJ)
eLON_RVU_MCAL: megacalories (Mcal)
eLON_RVU_KCAL: kilocalories (kcal) / Calories (Cal)
eLON_RVU_MBTU: mega-British thermal units (mBtu)
eLON_RVU_KBTU: kilo-British thermal units (kBtu)
eLON_RVU_MJH: mega-Joules per hour (MJ/h)
eLON_RVU_MLS: milliliters per second (ml/s)
eLON_RVU_LS: liters per second (l/s)
eLON_RVU_M3S: cubic-meters per second (m³/s) (cu.m/s)
eLON_RVU_C: (C)
eLON_RVU_LH: liters per hour (l/h)
eLON_RVU_VA: Volt-Amperes (VA)
eLON_RVU_KVA: kiloVolt-Amperes (kVA)
eLON_RVU_MVA: megaVolt-Amperes (MVA)
eLON_RVU_GVA: gigaVolt-Amperes (GVA)
eLON_RVU_VAH: Volt-Ampere hours (VAh)
eLON_RVU_KVAH: kiloVolt-Ampere hours (kVAh)
eLON_RVU_MVAH: megaVolt-Ampere hours (MVAh)

eLON_RVU_GVAH: giga-Volt-Ampere hours (GVAh)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.52 E_LON_sbld cmd_source_t

Used by: SNVT_sbld_state

```

TYPE E_LON_sbld cmd_source_t :
(
  eLON_SBCS_NUL           := -1,
  eLON_SBCS_LOCAL         := 0,
  eLON_SBCS_GROUP         := 1,
  eLON_SBCS_WIND_SPEED    := 2,
  eLON_SBCS_SUN_LUX       := 3,
  eLON_SBCS_RAIN          := 4,
  eLON_SBCS_FROST         := 5,
  eLON_SBCS_DAWN          := 6,
  eLON_SBCS_DUSK          := 7,
  eLON_SBCS_OUTSIDE_TEMP  := 8,
  eLON_SBCS_INDOOR_TEMP   := 9,
  eLON_SBCS_OUTDOOR_RH    := 10,
  eLON_SBCS_INDOOR_RH     := 11,
  eLON_SBCS_ILLUM_LEVEL   := 12,
  eLON_SBCS_SCENE         := 13,
  eLON_SBCS_GLOBAL        := 14,
  eLON_SBCS_WINDOW_CONTACT := 15,
  eLON_SBCS_AUTOMODE_CHANGED := 16,
  eLON_SBCS_OVERRIDE      := 17,
  eLON_SBCS_EMERGENCY      := 18,
  eLON_SBCS_MAINTENANCE    := 19,
  eLON_SBCS_INTRUSION      := 20,
  eLON_SBCS_TERMINAL_LOAD  := 21,
  eLON_SBCS_ALARM          := 22,
  eLON_SBCS_OCC_SENSOR     := 23,
  eLON_SBCS_OCC_MAN_CMD    := 24,
  eLON_SBCS_GLARE          := 25,
  eLON_SBCS_ALARM_2        := 26,
  eLON_SBCS_NOTIFY         := 27,
  eLON_SBCS_ELEVATION      := 28,
  eLON_SBCS_AZIMUTH        := 29,
  eLON_SBCS_SET_OVERRIDE   := 30,
  eLON_SBCS_SET_MAINTENANCE := 31,
  eLON_SBCS_TIMER          := 32,
  eLON_SBCS_UNKNOWN        := 127
)
END_TYPE

```

eLON_SBCS_NUL: Invalid value

eLON_SBCS_LOCAL: Local

eLON_SBCS_GROUP: Group

eLON_SBCS_WIND_SPEED: Wind speed

eLON_SBCS_SUN_LUX: Sun lux level

eLON_SBCS_RAIN: Rain

eLON_SBCS_FROST: Frost

eLON_SBCS_DAWN: Dawn

eLON_SBCS_DUSK: Dusk

eLON_SBCS_OUTSIDE_TEMP: Outside temperature

eLON_SBCS_INDOOR_TEMP: Indoor temperature

eLON_SBCS_OUTDOOR_RH: Outdoor relative humidity

eLON_SBCS_INDOOR_RH: Indoor relative humidity
eLON_SBCS_ILLUM_LEVEL: Illumination level
eLON_SBCS_SCENE: Scene
eLON_SBCS_GLOBAL: Global
eLON_SBCS_WINDOW_CONTACT: Window contact
eLON_SBCS_AUTOMODE_CHANGED: Auto-mode changed
eLON_SBCS_OVERRIDE: Override
eLON_SBCS_EMERGENCY: Emergency
eLON_SBCS_MAINTENANCE: Maintenance
eLON_SBCS_INTRUSION: Intrusion
eLON_SBCS_TERMINAL_LOAD: Terminal load
eLON_SBCS_ALARM: Alarm
eLON_SBCS_OCC_SENSOR: Occupancy sensor
eLON_SBCS_OCC_MAN_CMD: Occupancy manual command
eLON_SBCS_GLARE: Glare
eLON_SBCS_ALARM_2: Alarm 2
eLON_SBCS_NOTIFY: Notify
eLON_SBCS_ELEVATION: Elevation
eLON_SBCS_AZIMUTH: Azimuth
eLON_SBCS_SET_OVERRIDE: Set override
eLON_SBCS_SET_MAINTENANCE: Set maintenance
eLON_SBCS_TIMER: Timer
eLON_SBCS_UNKNOWN: Unknown command source

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.53 E_LON_sbInd_error_t

Used by: SNVT_sbInd_state

```

TYPE E_LON_sbInd_error_t :
(
  eLON_SBE_NUL           := -1,
  eLON_SBE_NO_ERROR      := 0,
  eLON_SBE_IN_PROGRESS   := 1,
  eLON_SBE_LIMITS        := 2,
  eLON_SBE_OBSTACLE_UP    := 3,
  eLON_SBE_OBSTACLE_DOWN := 4,
  eLON_SBE_OVERHEAT       := 5,
  eLON_SBE_POWER          := 6,
  eLON_SBE_SENSOR        := 7,
  eLON_SBE_MOTOR_CIRCUIT := 8,
  eLON_SBE_FUSE           := 9,
  eLON_SBE_REFERENCE_LOST := 10,
  eLON_SBE_HOST_COMM      := 11,
  eLON_SBE_VOLTAGE_1      := 12,
  eLON_SBE_VOLTAGE_2      := 13,

```

```

    eLON_SBE_CONTROLLER      := 14
)
END_TYPE

```

eLON_SBE_NUL: Invalid Value

eLON_SBE_NO_ERROR: No error

eLON_SBE_IN_PROGRESS: In progress

eLON_SBE_LIMITS: Limits

eLON_SBE_OBSTACLE_UP: Obstacle up

eLON_SBE_OBSTACLE_DOWN: Obstacle down

eLON_SBE_OVERHEAT: Overheat

eLON_SBE_POWER: Power

eLON_SBE_SENSOR: Sensor

eLON_SBE_MOTOR_CIRCUIT: Motor circuit

eLON_SBE_FUSE: Fuse

eLON_SBE_REFERENCE_LOST: Reference lost

eLON_SBE_HOST_COMM: Host communication

eLON_SBE_VOLTAGE_1: Voltage 1

eLON_SBE_VOLTAGE_2: Voltage 2

eLON_SBE_CONTROLLER: Controller

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.54 E_LON_scene_config_t

Used by: SNVT_scene_cfg

```

TYPE E_LON_scene_config_t :
(
    eLON_SCF_NUL      := -1,
    eLON_SCF_SAVE     := 0,
    eLON_SCF_CLEAR    := 1,
    eLON_SCF_REPORT   := 2,
    eLON_SCF_SIZE     := 3,
    eLON_SCF_FREE     := 4
)
END_TYPE

```

eLON_SCF_NUL: Invalid Value

eLON_SCF_SAVE: Overwrite this scene with new data

eLON_SCF_CLEAR: Delete this scene from the list

eLON_SCF_REPORT: Display this scene's data

eLON_SCF_SIZE: Report the number of programmed scenes

eLON_SCF_FREE: Report the number of free scene storage spaces

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.55 E_LON_scene_t

Used by: SNVT_scene

```

TYPE E_LON_scene_t :
(
  eLON_SC_NUL           := -1,
  eLON_SC_RECALL        := 0,
  eLON_SC_LEARN         := 1,
  eLON_SC_DISPLAY       := 2,
  eLON_SC_GROUP_OFF     := 3,
  eLON_SC_GROUP_ON      := 4,
  eLON_SC_STATUS_OFF    := 5,
  eLON_SC_STATUS_ON     := 6,
  eLON_SC_STATUS_MIXED  := 7,
  eLON_SC_GROUP_STATUS  := 8,
  eLON_SC_FLICK         := 9,
  eLON_SC_TIMEOUT       := 10,
  eLON_SC_TIMEOUT_FLICK := 11,
  eLON_SC_DELAYOFF      := 12,
  eLON_SC_DELAYOFF_FLICK := 13,
  eLON_SC_DELAYON       := 14,
  eLON_SC_ENABLE_GROUP  := 15,
  eLON_SC_DISABLE_GROUP := 16,
  eLON_SC_CLEANON       := 17,
  eLON_SC_CLEANOFF      := 18,
  eLON_SC_WINK          := 19,
  eLON_SC_RESET         := 20,
  eLON_SC_MODE1         := 21,
  eLON_SC_MODE2         := 22,
  eLON_SC_MODE3         := 23
)
END_TYPE

```

eLON_SC_NUL: Invalid value

eLON_SC_RECALL: Recall a specified scene.

eLON_SC_LEARN: Store the current setting in the specified scene.

eLON_SC_DISPLAY: Display the current scene.

eLON_SC_GROUP_OFF: Report current group is off.

eLON_SC_GROUP_ON: Report current group is on.

eLON_SC_STATUS_OFF: Report current status is off.

eLON_SC_STATUS_ON: Report current status is on.

eLON_SC_STATUS_MIXED: Report current status is mixed.

eLON_SC_GROUP_STATUS: Get group status.

eLON_SC_FLICK: Toggle state off and then on.

eLON_SC_TIMEOUT: Report a timeout occurred.

eLON_SC_TIMEOUT_FLICK: Report a timeout occurred for a flick warning.

eLON_SC_DELAYOFF: Set the state to off after a delay.

eLON_SC_DELAYOFF_FLICK: Flick and then set the state to off after a delay.

eLON_SC_DELAYON: Set the state to on after a delay.

eLON_SC_ENABLE_GROUP: Enable the current group.

eLON_SC_DISABLE_GROUP: Disable the current group.

eLON_SC_CLEANON: Recall the cleaning scene.

eLON_SC_CLEANOFF: Restore the previous scene.

eLON_SC_WINK: Toggle to the opposite state and then restore the state.

eLON_SC_RESET: Restore the factory default scene table.

eLON_SC_MODE1: Manufacturer-specific mode 1.

eLON_SC_MODE2: Manufacturer-specific mode 2.

eLON_SC_MODE3: Manufacturer-specific mode 3.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.56 E_LON_sec_state_t

Used by: SNVT_sec_state

```

TYPE E_LON_sec_state_t :
(
  eLON_SSE_NUL                := -1,
  eLON_SSE_OFF                := 0,
  eLON_SSE_ON                 := 1,
  eLON_SSE_INHIBIT_RESET     := 2,
  eLON_SSE_INHIBIT           := 3,
  eLON_SSE_WALK_TEST_OFF     := 4,
  eLON_SSE_WALK_TEST_ON      := 5,
  eLON_SSE_TEST_MODE_OFF     := 6,
  eLON_SSE_TEST_MODE_ON      := 7,
  eLON_SSE_POLL_STATUS       := 8,
  eLON_SSE_POLL_STATE        := 9,
  eLON_SSE_CONFIRM_ALARM_RESET := 10,
  eLON_SSE_CONFIRM_ALARM     := 11,
  eLON_SSE_CONFIRM_TAMPER_RESET := 12,
  eLON_SSE_CONFIRM_TAMPER     := 13,
  eLON_SSE_CONFIRM_MAINTENANCE := 14,
  eLON_SSE_CONFIRM_TROUBLE    := 15,
  eLON_SSE_CONFIRM_FAULT      := 16,
  eLON_SSE_CONFIRM_RECOVERED_SENSOR := 17,
  eLON_SSE_LOST_SENSOR        := 18,
  eLON_SSE_CONFIRM_UNSUPPORTED := 19
)
END_TYPE

```

eLON_SSE_NUL:

eLON_SSE_OFF:

eLON_SSE_ON:

eLON_SSE_INHIBIT_RESET:

eLON_SSE_INHIBIT:

eLON_SSE_WALK_TEST_OFF:

eLON_SSE_WALK_TEST_ON:

eLON_SSE_TEST_MODE_OFF:

eLON_SSE_TEST_MODE_ON:

eLON_SSE_POLL_STATUS:

eLON_SSE_POLL_STATE:

eLON_SSE_CONFIRM_ALARM_RESET:**eLON_SSE_CONFIRM_ALARM:****eLON_SSE_CONFIRM_TAMPER_RESET:****eLON_SSE_CONFIRM_TAMPER:****eLON_SSE_CONFIRM_MAINTENANCE:****eLON_SSE_CONFIRM_TROUBLE:****eLON_SSE_CONFIRM_FAULT:****eLON_SSE_CONFIRM_RECOVERED_SENSOR:****eLON_SSE_LOST_SENSOR:****eLON_SSE_CONFIRM_UNSUPPORTED:****Requirements**

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.57 E_LON_sec_status_t

Used by: SNVT_sec_status

```

TYPE E_LON_sec_status_t :
(
  eLON_SSS_NUL                := -1,
  eLON_SSS_POWER_UP          := 0,
  eLON_SSS_ALARM_RESET       := 1,
  eLON_SSS_ALARM              := 2,
  eLON_SSS_TAMPER_RESET      := 3,
  eLON_SSS_TAMPER             := 4,
  eLON_SSS_MAINTENANCE        := 5,
  eLON_SSS_TROUBLE            := 6,
  eLON_SSS_FAULT              := 7,
  eLON_SSS_RECOVERED_SENSOR   := 8,
  eLON_SSS_LOST_SENSOR        := 9,
  eLON_SSS_POLL_ACTIVE        := 10,
  eLON_SSS_POLL_INACTIVE      := 11,
  eLON_SSS_POLL_TAMPER        := 12,
  eLON_SSS_POLL_ON            := 13,
  eLON_SSS_POLL_OFF           := 14,
  eLON_SSS_POLL_INHIBIT       := 15,
  eLON_SSS_POLL_TEST          := 16,
  eLON_SSS_CONFIRM_OFF        := 17,
  eLON_SSS_CONFIRM_ON         := 18,
  eLON_SSS_CONFIRM_INHIBIT_RESET := 19,
  eLON_SSS_CONFIRM_INHIBIT     := 20,
  eLON_SSS_CONFIRM_WALK_TEST_OFF := 21,
  eLON_SSS_CONFIRM_WALK_TEST_ON := 22,
  eLON_SSS_CONFIRM_TEST_MODE_OFF := 23,
  eLON_SSS_CONFIRM_TEST_MODE_ON := 24,
  eLON_SSS_CONFIRM_UNSUPPORTED := 25
)
END_TYPE

```

eLON_SSS_NUL:**eLON_SSS_POWER_UP:****eLON_SSS_ALARM_RESET:****eLON_SSS_ALARM:****eLON_SSS_TAMPER_RESET:****eLON_SSS_TAMPER:**

eLON_SSS_MAINTENANCE:
eLON_SSS_TROUBLE:
eLON_SSS_FAULT:
eLON_SSS_RECOVERED_SENSOR:
eLON_SSS_LOST_SENSOR:
eLON_SSS_POLL_ACTIVE:
eLON_SSS_POLL_INACTIVE:
eLON_SSS_POLL_TAMPER:
eLON_SSS_POLL_ON:
eLON_SSS_POLL_OFF:
eLON_SSS_POLL_INHIBIT:
eLON_SSS_POLL_TEST:
eLON_SSS_CONFIRM_OFF:
eLON_SSS_CONFIRM_ON:
eLON_SSS_CONFIRM_INHIBIT_RESET:
eLON_SSS_CONFIRM_INHIBIT:
eLON_SSS_CONFIRM_WALK_TEST_OFF:
eLON_SSS_CONFIRM_WALK_TEST_ON:
eLON_SSS_CONFIRM_TEST_MODE_OFF:
eLON_SSS_CONFIRM_TEST_MODE_ON:
eLON_SSS_CONFIRM_UNSUPPORTED:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.58 E_LON_setting_t

Used by: SNVT_setting

```

TYPE E_LON_setting_t :
(
  eLON_SET_NUL    := -1,
  eLON_SET_OFF    := 0,
  eLON_SET_ON     := 1,
  eLON_SET_DOWN   := 2,
  eLON_SET_UP     := 3,
  eLON_SET_STOP   := 4,
  eLON_SET_STATE  := 5
)
END_TYPE

```

eLON_SET_NUL: Invalid value

eLON_SET_OFF: Change state to off

eLON_SET_ON: Change state to on, restoring the last on setting

eLON_SET_DOWN: Decrease the setting by the offset supplied in the setting field

eLON_SET_UP: Increase the setting by the offset supplied in the setting field

eLON_SET_STOP: Stop any motion, for example for blinds

eLON_SET_STATE: Change the setting to the value specified

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.59 E_LON_switch_state_t

Used by: SNVT_switch_2

```

TYPE E_LON_switch_state_t :
(
  eLON_SW_NUL                      := -1,
  eLON_SW_SET_OFF                  := 0,
  eLON_SW_SET_ON                   := 1,
  eLON_SW_REPORT_OFF              := 2,
  eLON_SW_REPORT_ON               := 3,
  eLON_SW_TOGGLE_STATE            := 4,
  eLON_SW_SET_LEVEL               := 5,
  eLON_SW_INCREASE_LEVEL          := 6,
  eLON_SW_DECREASE_LEVEL          := 7,
  eLON_SW_RECALL_SCENE            := 8,
  eLON_SW_STORE_SCENE             := 9,
  eLON_SW_LEARN_SCENE             := 10,
  eLON_SW_SET_OCCUPIED            := 11,
  eLON_SW_SET_UNOCCUPIED          := 12,
  eLON_SW_SET_MULTIPLIER          := 13,
  eLON_SW_ENABLE_GROUP            := 14,
  eLON_SW_DISABLE_GROUP          := 15,
  eLON_SW_WINK                    := 16,
  eLON_SW_RESET                   := 17,
  eLON_SW_RESET_ENERGY_USAGE      := 18,
  eLON_SW_RESET_RUNTIME           := 19,
  eLON_SW_INCREASE_HUE            := 20,
  eLON_SW_DECREASE_HUE           := 21,
  eLON_SW_SET_BUTTON              := 22,
  eLON_SW_SET_FAN_UP              := 32,
  eLON_SW_SET_FAN_DOWN           := 33,
  eLON_SW_TOGGLE_FAN_DIRECTION    := 34,
  eLON_SW_INCREASE_FAN_LEVEL      := 35,
  eLON_SW_DECREASE_FAN_LEVEL      := 36,
  eLON_SW_SET_FAN_ON              := 37,
  eLON_SW_SET_FAN_OFF             := 38,
  eLON_SW_TOGGLE_FAN_STATE        := 39,
  eLON_SW_MOVE_OPEN               := 48,
  eLON_SW_MOVE_CLOSED             := 49,
  eLON_SW_SET_ANGLE               := 50,
  eLON_SW_ROTATE_OPEN             := 51,
  eLON_SW_ROTATE_CLOSED           := 52,
  eLON_SW_STOP                    := 53,
  eLON_SW_SET_STANDBY             := 54,
  eLON_SW_TOGGLE_STANDBY          := 55,
  eLON_SW_SET_POSITION            := 56,
  eLON_SW_REPORT_POSITION         := 57,
  eLON_SW_REPORT_FAN_LEVEL        := 58
)
END_TYPE

```

eLON_SW_NUL: Invalid value

eLON_SW_SET_OFF: Set the state to off; ignored for blinds, drapes, shades, and fans

eLON_SW_SET_ON: Set the state to on; ignored for blinds, drapes, shades, and fans

eLON_SW_REPORT_OFF: Report that the state is off; output only; ignored for input

eLON_SW_REPORT_ON: Report that the state is on; output only; ignored for input

eLON_SW_TOGGLE_STATE: Toggle on-off state; same action as SW_SET_OFF if the on/off state was on, and SW_SET_ON if the on/off state was off; ignored for blinds, drapes, shades, and fans

eLON_SW_SET_LEVEL: Set the level to the specified value; ignored for blinds, drapes, shades, and fans

eLON_SW_INCREASE_LEVEL: Increase the level by the specified value; ignored for blinds, drapes, shades, and fans

eLON_SW_DECREASE_LEVEL: Decrease the level by the specified amount; ignored for blinds, drapes, shades, and fans

eLON_SW_RECALL_SCENE: Recall the state and level from the specified scene

eLON_SW_STORE_SCENE: Store setting for the specified scene

eLON_SW_LEARN_SCENE: Learn setting for the specified scene

eLON_SW_SET_OCCUPIED: Set the occupancy state

eLON_SW_SET_UNOCCUPIED: Clear the occupancy state

eLON_SW_SET_MULTIPLIER: Set a multiplier for the level for 60 minutes; ignored for blinds, drapes, shades, and fans

eLON_SW_ENABLE_GROUP: Enable a group; all groups are enabled by default

eLON_SW_DISABLE_GROUP: Disable a group

eLON_SW_WINK: Blink state (toggle on-off state; pause; toggle on-off state again)

eLON_SW_RESET: Reset scene definitions, multiplier, occupancy state, group enable flags, and settings to factory defaults

eLON_SW_RESET_ENERGY_USAGE: Reset energy usage value to zero

eLON_SW_RESET_RUNTIME: Reset runtime value to zero

eLON_SW_INCREASE_HUE: Increase color hue

eLON_SW_DECREASE_HUE: Decrease color hue

eLON_SW_SET_BUTTON: Trigger the actions for pressing and releasing the button specified in the value field

eLON_SW_SET_FAN_UP: Set ceiling fan direction to up, with specified level

eLON_SW_SET_FAN_DOWN: Set ceiling fan direction to down, with specified level

eLON_SW_TOGGLE_FAN_DIRECTION: Toggle fan up-down direction

eLON_SW_INCREASE_FAN_LEVEL: Increase fan speed by the setting

eLON_SW_DECREASE_FAN_LEVEL: Decrease fan speed by the setting

eLON_SW_SET_FAN_ON: Set the fan state to on

eLON_SW_SET_FAN_OFF: Set the fan state to off

eLON_SW_TOGGLE_FAN_STATE: Toggle the fan on-off state

eLON_SW_MOVE_OPEN: Move blinds, drapes, or shades open by the setting

eLON_SW_MOVE_CLOSED: Move blinds, drapes, or shades closed by the setting

eLON_SW_SET_ANGLE: Set the rotation angle of blinds to the setting

eLON_SW_ROTATE_OPEN: Rotate blinds open by the setting

eLON_SW_ROTATE_CLOSED: Rotate blinds closed by the setting

eLON_SW_STOP: Stop any motion of blinds, drapes, or shades

eLON_SW_SET_STANDBY: Set Standby mode

eLON_SW_TOGGLE_STANDBY: Toggle the standby state

eLON_SW_SET_POSITION: Set blinds, drapes, or shades to the specified position; 100% is fully open, 0% is fully closed

eLON_SW_REPORT_POSITION: Report the position of blinds, drapes, or shades output only; ignored for input

eLON_SW_REPORT_FAN_LEVEL: Report the fan speed in percent of full level output only; ignored for input

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.60 E_LON_telcom_states_t

Used by: SNVT_telcom

```

TYPE E_LON_telcom_states_t :
(
  eLON_TEL_NUL      := -1,
  eLON_TEL_NOTINUSE := 0,
  eLON_TEL_OFFHOOK  := 1,
  eLON_TEL_DIALING  := 2,
  eLON_TEL_DIALCOMP := 3,
  eLON_TEL_RINGBACK := 4,
  eLON_TEL_INCOMING := 5,
  eLON_TEL_RINGING  := 6,
  eLON_TEL_ANSWERED := 7,
  eLON_TEL_CONNECTED := 8,
  eLON_TEL_TALKING  := 9,
  eLON_TEL_HANGINGUP := 10,
  eLON_TEL_HUNGUPX  := 11,
  eLON_TEL_HOLD     := 12,
  eLON_TEL_UNHOLD   := 13,
  eLON_TEL_RELEASE  := 14,
  eLON_TEL_FULLDUP  := 15,
  eLON_TEL_BLOCKED  := 16,
  eLON_TEL_CWAIT    := 17,
  eLON_TEL_DESTBUSY := 18,
  eLON_TEL_NETBUSY  := 19,
  eLON_TEL_ERROR    := 20
)
END_TYPE

```

eLON_TEL_NUL: Invalid Value

eLON_TEL_NOTINUSE: "Null State (U0)" not in use

eLON_TEL_OFFHOOK: "Call Initiated (U1)"

eLON_TEL_DIALING: "Overlap Sending (U2)"

eLON_TEL_DIALCOMP: "Outgoing Call Proceeding (U3)"

eLON_TEL_RINGBACK: "Call Delivered (U4)" hearing ringback

eLON_TEL_INCOMING: "Call Present (U6)" incoming call has not yet started ringing (only on ISDN line)

eLON_TEL_RINGING: "Call Received (U7)" incoming call when the user has indicated alerting but has not yet answered

eLON_TEL_ANSWERED: "Connect Request (U8)" user has answered the call and is waiting to be awarded the call

eLON_TEL_CONNECTED:

eLON_TEL_TALKING: "Active (U10)" two parties are exchanging data

eLON_TEL_HANGINGUP: "Disconnect Request (U11)" user has hung up

eLON_TEL_HUNGUPX: "Disconnect Indication (U12)" the other side hung up

eLON_TEL_HOLD: "Suspend Request (U15)" user has requested the network suspend the call

eLON_TEL_UNHOLD: "Resume Request (U17)" resume a held call (usually go back to TEL_TALKING)

eLON_TEL_RELEASE: "Release Request (U19)" user has requested the network to release

eLON_TEL_FULLDUP: "Overlap Receiving (U25)" user has acknowledged the call and is prepared to receive additional

eLON_TEL_BLOCKED: connection with blocking, (call-waiting disabled)

eLON_TEL_CWAIT: call-waiting coming in

eLON_TEL_DESTBUSY: destination busy

eLON_TEL_NETBUSY: problem, network

eLON_TEL_ERROR: problem, non-network

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.61 E_LON_therm_mode_t

Used by: SNVT_therm_mode

```

TYPE E_LON_therm_mode_t :
(
  eLON_THERM_NUL      := -1,
  eLON_THERM_NO_CONTROL := 0,
  eLON_THERM_IN_OUT   := 1,
  eLON_THERM_MODULATING := 2
)
END_TYPE

```

eLON_THERM_NUL: Invalid Value

eLON_THERM_NO_CONTROL: Thermostat disabled

eLON_THERM_IN_OUT: Cut in/out control

eLON_THERM_MODULATING: Modulating control

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.62 E_LON_tilt_dir_t

Used by: SNVT_ptz

```

TYPE E_LON_tilt_dir_t :
(
  eLON_TILT_NUL      := -1,
  eLON_TILT_STOP     := 0,
  eLON_TILT_UP       := 1,
  eLON_TILT_DOWN     := 2
)
END_TYPE

```

eLON_TILT_NUL: Invalid Value

eLON_TILT_STOP: Stop tilting

eLON_TILT_UP: Tilt up

eLON_TILT_DOWN: Tilt down

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.63 E_LON_unit_temp_t

Used by: SNVT_pump_sensor

```

TYPE E_LON_unit_temp_t :
(
  eLON_TEMP_NUL           := -1,
  eLON_TEMP_INACTIVE      := 0,
  eLON_TEMP_AT_DESIRE    := 1,
  eLON_TEMP_TOO_HOT      := 2,
  eLON_TEMP_TOO_COLD     := 3
)
END_TYPE

```

eLON_TEMP_NUL: The status of the apparatus or unit is unknown, or not applicable (Invalid Value).

eLON_TEMP_INACTIVE: The temperature-sensing apparatus is present, but not currently operating.

eLON_TEMP_AT_DESIRE: The unit temperature is within the desired range.

eLON_TEMP_TOO_HOT: The unit temperature is above the upper limit of the desired range.

eLON_TEMP_TOO_COLD: The unit temperature is below the lower limit of the desired range.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.64 E_LON_valve_mode_t

Used by: SNVT_valve_mode

```

TYPE E_LON_valve_mode_t :
(
  eLON_VALVE_NUL           := -1,
  eLON_VALVE_NORMAL        := 0,
  eLON_VALVE_COOLING       := 1,
  eLON_VALVE_HEATING       := 2,
  eLON_VALVE_EMERGENCY     := 3,
  eLON_VALVE_STROKE_ADP    := 4,
  eLON_VALVE_STROKE_SYN    := 5,
  eLON_VALVE_ERROR         := 6,
  eLON_VALVE_OVERRIDDEN    := 7
)
END_TYPE

```

eLON_VALVE_NUL: Invalid value

eLON_VALVE_NORMAL: Valve works as normal valve

eLON_VALVE_COOLING: Valve works as cooling valve only

eLON_VALVE_HEATING: Valve works as heating valve only

eLON_VALVE_EMERGENCY: Valve works in emergency operation

eLON_VALVE_STROKE_ADP: Valve adapt its stroke and its end positions

eLON_VALVE_STROKE_SYN: Valve resynchronizes its position

eLON_VALVE_ERROR: Valve is in error mode

eLON_VALVE_OVERRIDDEN: Value is overridden

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.1.65 E_LON_zoom_t

Used by: SNVT_ptz

```
TYPE E_LON_zoom_t :
(
  eLON_ZOOM_NUL    := -1,
  eLON_ZOOM_STOP   := 0,
  eLON_ZOOM_TELE   := 1,
  eLON_ZOOM_WIDE   := 2
)
END_TYPE
```

eLON_ZOOM_NUL: Invalid Value

eLON_ZOOM_STOP: Stop zooming

eLON_ZOOM_TELE: Telephoto zoom / zoom in

eLON_ZOOM_WIDE: Wide zoom / zoom out

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2 Structures

AuxiliaryStructure/SNVT_chlr_status

Data types	Description
ST_LON_chlr_state [▶ 637]	Used by: SNVT_chlr_status

AuxiliaryStructure/SNVT_clothes_w_c

Data types	Description
ST_LON_action [▶ 637]	Used by: SNVT_clothes_w_c
ST_LON_dry [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_duration [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_function [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_rinse [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_spin [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_wash [▶ 639]	Used by: SNVT_clothes_w_c

AuxiliaryStructure/SNVT_clothes_w_s

Data types	Description
ST_LON_alarm [▶ 640]	Used by: SNVT_clothes_w_s

AuxiliaryStructure/SNVT_color_2

Data types	Description
ST_LON_CIE1931_lumen [► 641]	Used by: SNVT_color_2
ST_LON_CIE1931_percent [► 642]	Used by: SNVT_color_2
ST_LON_color_value [► 642]	Used by: SNVT_color_2
ST_LON_RGB [► 643]	Used by: SNVT_color_2

AuxiliaryStructure/SNVT_ctrl_resp

Data types	Description
ST_LON_range [► 643]	Used by: SNVT_ctrl_resp
ST_LON_sender [► 643]	Used by: SNVT_ctrl_resp

AuxiliaryStructure/SNVT_dev_fault

Data types	Description
ST_LON_Dev_type1 [► 644]	Used by: SNVT_dev_fault
ST_LON_pump_ctrl1 [► 644]	Used by: SNVT_dev_fault
ST_LON_valve_pos1 [► 645]	Used by: SNVT_dev_fault

AuxiliaryStructure/SNVT_dev_maint

Data types	Description
ST_LON_Dev_type2 [► 646]	Used by: SNVT_dev_maint
ST_LON_pump_ctrl2 [► 647]	Used by: SNVT_dev_maint
ST_LON_valve_pos2 [► 647]	Used by: SNVT_dev_maint

AuxiliaryStructure/SNVT_dev_status

Data types	Description
ST_LON_Dev_type3 [► 648]	Used by: SNVT_dev_status
ST_LON_pump_ctrl3 [► 648]	Used by: SNVT_dev_status
ST_LON_valve_pos3 [► 649]	Used by: SNVT_dev_status

AuxiliaryStructure/SNVT_ex_control

Data types	Description
ST_LON_Control_device_addr [► 650]	Used by: SNVT_ex_control

AuxiliaryStructure/SNVT_file_req

Data types	Description
ST_LON_addrt [► 651]	Used by: SNVT_file_req
ST_LON_dest_address [► 651]	Used by: SNVT_file_req
ST_LON_gp [► 651]	Used by: SNVT_file_req
ST_LON_sn [► 652]	Used by: SNVT_file_req

AuxiliaryStructure/SNVT_file_status

Data types	Description
ST_LON_address [► 652]	Used by: FB_Write_Address_Table / FB_Read_Address_Table
ST_LON_adr [► 653]	Used by: SNVT_file_status
ST_LON_descriptor [► 653]	Used by: SNVT_file_status

AuxiliaryStructure/SNVT_lamp_status

Data types	Description
ST_LON_Alarm_actual [► 654]	Used by: SNVT_lamp_status
ST_LON_alarm_previous [► 655]	Used by: SNVT_lamp_status

AuxiliaryStructure/SNVT_pos_ctrl

Data types	Description
ST_LON_abspos [► 657]	Used by: SNVT_pos_ctrl
ST_LON_Value [► 658]	Used by: SNVT_pos_ctrl

AuxiliaryStructure/SNVT_rac_ctrl

Data types	Description
ST_LON_addr_dest [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_init [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_talk [► 659]	Used by: SNVT_rac_ctrl
ST_LON_p2m [► 659]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_p2p [► 660]	Used by: SNVT_rac_req / SNVT_rac_ctrl

AuxiliaryStructure/SNVT_rac_req

Data types	Description
ST_LON_rac_req_addr_dest [► 660]	
ST_LON_rac_req_addr_init [► 661]	

AuxiliaryStructure/SNVT_switch_2

Data types	Description
ST_LON_setting [► 661]	Used by: SNVT_switch_2

AuxiliaryStructure/SNVT_time_zone

Data types	Description
ST_LON_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_start_DST [► 663]	Used by: SNVT_time_zone
ST_LON_start_DST [► 663]	Used by: SNVT_time_zone

Data types	Description
ST_KL6401 [► 667]	Structure for configuration
ST_LON_AddressTable [► 667]	Used by: FB_Write_Address_Table / FB_Read_Address_Table

Data types	Description
ST_LON_ConfigTable [► 668]	Used by: FB_Write_Config_Table / FB_Read_Config_Table
ST_LON_DomainTable [► 669]	Used by: FB_Write_Domain_Table / FB_Read_Domain_Table
ST_LON_SNVT_alarm [► 669]	Used by: SNVT_alarm
ST_LON_SNVT_alarm_2 [► 670]	Used by: SNVT_alarm_2
ST_LON_SNVT_chlr_status [► 670]	Used by: SNVT_chlr_status
ST_LON_SNVT_clothes_w_a [► 671]	Used by: SNVT_clothes_w_a
ST_LON_SNVT_clothes_w_c [► 672]	Used by: SNVT_clothes_w_c
ST_LON_SNVT_clothes_w_m [► 673]	Used by: SNVT_clothes_w_m
ST_LON_SNVT_clothes_w_s [► 673]	Used by: SNVT_clothes_w_s
ST_LON_SNVT_color [► 674]	Used by: SNVT_color
ST_LON_SNVT_color_2 [► 674]	Used by: SNVT_color_2
ST_LON_SNVT_ctrl_req [► 674]	Used by: SNVT_ctrl_req
ST_LON_SNVT_ctrl_resp [► 675]	Used by: SNVT_ctrl_resp
ST_LON_SNVT_currency [► 675]	Used by: SNVT_currency
ST_LON_SNVT_date_event [► 675]	Used by: SNVT_date_event
ST_LON_SNVT_dev_fault [► 676]	Used by: SNVT_dev_fault
ST_LON_SNVT_dev_maint [► 676]	Used by: SNVT_dev_maint
ST_LON_SNVT_dev_status [► 676]	Used by: SNVT_dev_status
ST_LON_SNVT_earth_pos [► 677]	Used by: SNVT_earth_pos
ST_LON_SNVT_elapsed_tm [► 677]	Used by: SNVT_elapsed_tm
ST_LON_SNVT_ent_status [► 678]	Used by: SNVT_ent_status
ST_LON_SNVT_environment [► 679]	Used by: SNVT_environment
ST_LON_SNVT_ex_control [► 680]	Used by: SNVT_ex_control
ST_LON_SNVT_file_pos [► 680]	Used by: SNVT_file_pos
ST_LON_SNVT_file_req [► 680]	Used by: SNVT_file_req
ST_LON_SNVT_file_status [► 681]	Used by: SNVT_file_status
ST_LON_SNVT_geo_loc [► 681]	Used by: SNVT_geo_loc
ST_LON_SNVT_hvac_overid [► 681]	Used by: SNVT_hvac_overid
ST_LON_SNVT_hvac_satsts [► 682]	Used by: SNVT_hvac_satsts
ST_LON_SNVT_hvac_status [► 683]	Used by: SNVT_hvac_status
ST_LON_SNVT_lamp_status [► 683]	Used by: SNVT_lamp_status
ST_LON_SNVT_log_fx_request [► 683]	Used by: SNVT_log_fx_request
ST_LON_SNVT_log_fx_status [► 684]	Used by: SNVT_log_fx_status
ST_LON_SNVT_log_status [► 684]	Used by: SNVT_log_status
ST_LON_SNVT_muldiv [► 685]	Used by: SNVT_muldiv
ST_LON_SNVT_nv_type [► 685]	Used by: SNVT_nv_type
ST_LON_SNVT_obj_request [► 686]	Used by: SNVT_obj_request
ST_LON_SNVT_obj_status [► 686]	Used by: SNVT_obj_status
ST_LON_SNVT_pos_ctrl [► 688]	Used by: SNVT_pos_ctrl
ST_LON_SNVT_preset [► 688]	Used by: SNVT_preset
ST_LON_SNVT_privacyzone [► 689]	Used by: SNVT_privacyzone
ST_LON_SNVT_ptz [► 689]	Used by: SNVT_ptz

Data types	Description
ST_LON_SNVT_pump_sensor [► 689]	Used by: SNVT_pump_sensor
ST_LON_SNVT_pumpset_mn [► 690]	Used by: SNVT_pumpset_mn
ST_LON_SNVT_pumpset_sn [► 691]	Used by: SNVT_pumpset_sn
ST_LON_SNVT_rac_ctrl [► 692]	Used by: SNVT_rac_ctrl
ST_LON_SNVT_rac_req [► 692]	Used by: SNVT_rac_req
ST_LON_SNVT_reg_val [► 693]	Used by: SNVT_rac_val
ST_LON_SNVT_reg_val_ts [► 693]	Used by: SNVT_rac_val_ts
ST_LON_SNVT_sblnd_state [► 694]	Used by: SNVT_sblnd_state
ST_LON_SNVT_scene [► 694]	Used by: SNVT_scene
ST_LON_SNVT_scene_cfg [► 694]	Used by: SNVT_scene_cfg
ST_LON_SNVT_setting [► 695]	Used by: SNVT_setting
ST_LON_SNVT_str_int [► 695]	Used by: SNVT_str_int
ST_LON_SNVT_switch [► 695]	Used by: SNVT_switch
ST_LON_SNVT_switch_2 [► 696]	Used by: SNVT_switch_2
ST_LON_SNVT_temp_setpt [► 696]	Used by: SNVT_temp_setpt
ST_LON_SNVT_time_zone [► 697]	Used by: SNVT_time_zone
ST_LON_SNVT_tod_event [► 697]	Used by: SNVT_tod_event
ST_LON_SNVT_trans_table [► 698]	Used by: SNVT_trans_table
ST_LON_SNVT_zerospans [► 698]	Used by: SNVT_zerospans
str_AddressTable [► 698]	address table

4.2.2.1 AuxiliaryStructure

SNVT_chlr_status

Data types	Description
ST_LON_chlr_state [► 637]	Used by: SNVT_chlr_status

SNVT_clothes_w_c

Data types	Description
ST_LON_action [► 637]	Used by: SNVT_clothes_w_c
ST_LON_dry [► 638]	Used by: SNVT_clothes_w_c
ST_LON_duration [► 638]	Used by: SNVT_clothes_w_c
ST_LON_function [► 638]	Used by: SNVT_clothes_w_c
ST_LON_rinse [► 639]	Used by: SNVT_clothes_w_c
ST_LON_spin [► 639]	Used by: SNVT_clothes_w_c
ST_LON_wash [► 639]	Used by: SNVT_clothes_w_c

SNVT_clothes_w_s

Data types	Description
ST_LON_alarm [► 640]	Used by: SNVT_clothes_w_s

SNVT_color_2

Data types	Description
ST_LON_CIE1931_lumen [▶ 641]	Used by: SNVT_color_2
ST_LON_CIE1931_percent [▶ 642]	Used by: SNVT_color_2
ST_LON_color_value [▶ 642]	Used by: SNVT_color_2
ST_LON_RGB [▶ 643]	Used by: SNVT_color_2

SNVT_ctrl_resp

Data types	Description
ST_LON_range [▶ 643]	Used by: SNVT_ctrl_resp
ST_LON_sender [▶ 643]	Used by: SNVT_ctrl_resp

SNVT_dev_fault

Data types	Description
ST_LON_Dev_type1 [▶ 644]	Used by: SNVT_dev_fault
ST_LON_pump_ctrl1 [▶ 644]	Used by: SNVT_dev_fault
ST_LON_valve_pos1 [▶ 645]	Used by: SNVT_dev_fault

SNVT_dev_maint

Data types	Description
ST_LON_Dev_type2 [▶ 646]	Used by: SNVT_dev_maint
ST_LON_pump_ctrl2 [▶ 647]	Used by: SNVT_dev_maint
ST_LON_valve_pos2 [▶ 647]	Used by: SNVT_dev_maint

SNVT_dev_status

Data types	Description
ST_LON_Dev_type3 [▶ 648]	Used by: SNVT_dev_status
ST_LON_pump_ctrl3 [▶ 648]	Used by: SNVT_dev_status
ST_LON_valve_pos3 [▶ 649]	Used by: SNVT_dev_status

SNVT_ex_control

Data types	Description
ST_LON_Control_device_addr [▶ 650]	Used by: SNVT_ex_control

SNVT_file_req

Data types	Description
ST_LON_addrt [▶ 651]	Used by: SNVT_file_req
ST_LON_dest_address [▶ 651]	Used by: SNVT_file_req
ST_LON_gp [▶ 651]	Used by: SNVT_file_req
ST_LON_sn [▶ 652]	Used by: SNVT_file_req

SNVT_file_status

Data types	Description
ST_LON_address [► 652]	Used by: FB_Write_Address_Table / FB_Read_Address_Table
ST_LON_adr [► 653]	Used by: SNVT_file_status
ST_LON_descriptor [► 653]	Used by: SNVT_file_status

SNVT_lamp_status

Data types	Description
ST_LON_Alarm_actual [► 654]	Used by: SNVT_lamp_status
ST_LON_alarm_previous [► 655]	Used by: SNVT_lamp_status

SNVT_pos_ctrl

Data types	Description
ST_LON_abspos [► 657]	Used by: SNVT_pos_ctrl
ST_LON_Value [► 658]	Used by: SNVT_pos_ctrl

SNVT_rac_ctrl

Data types	Description
ST_LON_addr_dest [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_init [► 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_talk [► 659]	Used by: SNVT_rac_ctrl
ST_LON_p2m [► 659]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_p2p [► 660]	Used by: SNVT_rac_req / SNVT_rac_ctrl

SNVT_rac_req

Data types	Description
ST_LON_rac_req_addr_dest [► 660]	
ST_LON_rac_req_addr_init [► 661]	

SNVT_switch_2

Data types	Description
ST_LON_setting [► 661]	Used by: SNVT_switch_2

SNVT_time_zone

Data types	Description
ST_LON_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_start_DST [► 663]	Used by: SNVT_time_zone
ST_LON_start_DST [► 663]	Used by: SNVT_time_zone

4.2.2.1.1 SNVT_chlr_status

Data types	Description
ST_LON_chlr_state [► 637]	Used by: SNVT_chlr_status

4.2.2.1.1.1 ST_LON_chlr_state

Used by: SNVT_chlr_status

```
TYPE ST_LON_chlr_state :
STRUCT
    bIn_alarm      : BOOL;
    bRun_enabled   : BOOL;
    bLocal         : BOOL;
    bLimited       : BOOL;
    bChw_flow      : BOOL;
    bCondw_flow    : BOOL;
END_STRUCT
END_TYPE
```

bIn_alarm: Alarm flag (boolean).

bRun_enabled: Run-enabled flag (boolean).

bLocal: Locally-controlled flag (boolean).

bLimited: Limited-condition flag (boolean). Conditions may exist that prevent reaching the setpoint

bChw_flow: Chiller-water-flow flag (boolean).

bCondw_flow: Condenser-water-flow flag (boolean).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2 SNVT_clothes_w_c

Data types	Description
ST_LON_action [▶ 637]	Used by: SNVT_clothes_w_c
ST_LON_dry [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_duration [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_function [▶ 638]	Used by: SNVT_clothes_w_c
ST_LON_rinse [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_spin [▶ 639]	Used by: SNVT_clothes_w_c
ST_LON_wash [▶ 639]	Used by: SNVT_clothes_w_c

4.2.2.1.2.1 ST_LON_action

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_action :
STRUCT
    bPower_on      : BOOL;
    bRun_mode      : BOOL;
    byRsrvd2_7     : BYTE;
END_STRUCT
END_TYPE
```

bPower_on:

bRun_mode:

byRsrvd2_7:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.2 ST_LON_dry

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_dry :
STRUCT
    byTemp      : BYTE;
    stDuration  : ST_LON_Duration;
END_STRUCT
END_TYPE
```

byTemp: Min: 0 / Max: 1

stDuration: (see [ST_LON_Duration](#) [► 638])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.3 ST_LON_duration

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_duration :
STRUCT
    byTime      : BYTE;
    eDryness    : E_LON_discrete_levels_t;
END_STRUCT
END_TYPE
```

byTime: Min: 0 / Max: 255

eDryness: (see [E_LON_discrete_levels_t](#) [► 596])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.4 ST_LON_function

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_function :
STRUCT
    eProgram    : E_LON_appl_cwp_t;
    stWash      : ST_LON_wash;
    stRinse     : ST_LON_rinse;
    stSpin      : ST_LON_spin;
    stDry       : ST_LON_dry;
END_STRUCT
END_TYPE
```

eProgram: (see [E_LON_appl_cwp_t](#) [► 585])

stWash: (see [ST_LON_wash](#) [► 639])

stRinse: (see [ST_LON_rinse](#) [► 639])

stSpin: (see [ST_LON_spin](#) [► 639])

stDry: (see [ST_LON_dry](#) [► 638])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.5 ST_LON_rinse

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_rinse :
STRUCT
    byTemp    : BYTE;
    byRepeat  : BYTE;
    eOption   : E_LON_appl_rin_t;
END_STRUCT
END_TYPE
```

byTemp: Min: 0 / Max: 255

byRepeat: Min: 0 / Max: 9

eOption: (see [E_LON_appl_rin_t](#) [► 586])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.6 ST_LON_spin

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_spin :
STRUCT
    uiSpeed : UINT;
    byTime  : BYTE;
    eHold   : E_LON_boolean_t;
END_STRUCT
END_TYPE
```

uiSpeed: Min: 0 / Max: 65535

byTime: Min: 0 / Max: 255

eHold: (see [E_LON_boolean_t](#) [► 587])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.2.7 ST_LON_wash

Used by: SNVT_clothes_w_c

```
TYPE ST_LON_wash :
STRUCT
    eLoad_level : E_LON_discrete_levels_t;
    byTemp      : BYTE;
    byTime      : BYTE;
    ePrewash    : E_LON_boolean_t;
END_STRUCT
END_TYPE
```

eLoad_level: (see [E_LON_discrete_levels_t](#) [► 596])

byTemp: Min: 0 / Max: 255

byTime: Min: 0 / Max: 255

ePrewash: (see [E_LON_boolean_t](#) [► 587])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.3 SNVT_clothes_w_s

Data types	Description
ST_LON_alarm [► 640]	Used by: SNVT_clothes_w_s

4.2.2.1.3.1 ST_LON_alarm

Used by: SNVT_clothes_w_s

```

TYPE ST_LON_alarm :
STRUCT
  bAlarm_reset      : BOOL;
  bWar_water_supply : BOOL;
  bWar_drain_slow   : BOOL;
  bWar_door_open    : BOOL;
  bWar_load_unbalanced : BOOL;
  bWar_filter_cleaning : BOOL;
  bWar_hoses_reversed : BOOL;
  bWar_voltage_low   : BOOL;
  bWar_power_failure : BOOL;
  bWar_drain_open    : BOOL;
  bWar_execute_fail  : BOOL;
  bWar_door_locked   : BOOL;
  bWar_service       : BOOL;
  bWar_rsrvd5         : BOOL;
  bWar_rsrvd6         : BOOL;
  bWar_rsrvd7         : BOOL;
  bErr_motor_stall    : BOOL;
  bErr_water_temp     : BOOL;
  bErr_pressure       : BOOL;
  bErr_overflow       : BOOL;
  bErr_water_heat     : BOOL;
  bErr_water_leak     : BOOL;
  bErr_motor_speed    : BOOL;
  bErr_wash_thermistor : BOOL;
  bErr_dry_thermistor : BOOL;
  bErr_dry_overheat   : BOOL;
  bErr_dry_heating    : BOOL;
  bErr_dry_fan        : BOOL;
  bErr_rsrvd4         : BOOL;
  bErr_rsrvd5         : BOOL;
  bErr_rsrvd6         : BOOL;
  bErr_rsrvd7         : BOOL;
  byErr_rsrvd0_7      : BYTE;
  byErr_manuf_code    : BYTE;
END_STRUCT
END_TYPE

```

bAlarm_reset:**bWar_water_supply:****bWar_drain_slow:****bWar_door_open:****bWar_load_unbalanced:****bWar_filter_cleaning:****bWar_hoses_reversed:****bWar_voltage_low:****bWar_power_failure:****bWar_drain_open:**

bWar_execute_fail:
bWar_door_locked:
bWar_service:
bWar_rsrvd5:
bWar_rsrvd6:
bWar_rsrvd7:
bErr_motor_stall:
bErr_water_temp:
bErr_pressure:
bErr_overflow:
bErr_water_heat:
bErr_water_leak:
bErr_motor_speed:
bErr_wash_thermistor:
bErr_dry_thermistor:
bErr_dry_overheat:
bErr_dry_heating:
bErr_dry_fan:
bErr_rsrvd4:
bErr_rsrvd5:
bErr_rsrvd6:
bErr_rsrvd7:
byErr_rsrvd0_7:
byErr_manuf_code: Min: 0 / Max: 255

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.4 SNVT_color_2

Data types	Description
ST_LON_CIE1931_lumen [▶ 641]	Used by: SNVT_color_2
ST_LON_CIE1931_percent [▶ 642]	Used by: SNVT_color_2
ST_LON_color_value [▶ 642]	Used by: SNVT_color_2
ST_LON_RGB [▶ 643]	Used by: SNVT_color_2

4.2.2.1.4.1 ST_LON_CIE1931_lumen

Used by: SNVT_color_2

```

TYPE ST_LON_CIE1931_lumen :
STRUCT
  rX          : REAL;
  rY          : REAL;
  udiAbsolute_Y : UDINT;
END_STRUCT
END_TYPE

```

rX: Min: 0.0 / Max: 0.740 / Invalid: 1.275 / CIE 1931 x value (CIE 1931 color space coordinate). CIE 1931 x-axis color value

rY: Min: 0.0 / Max: 0.840 / Invalid: 1.275 / CIE 1931 y value (CIE 1931 color space coordinate). CIE 1931 y-axis color value

udiAbsolute_Y: Min: 0 / Max: 6553400 / Invalid: 6553500 / Absolute luminance (lumen). Absolute luminance

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.4.2 ST_LON_CIE1931_percent

Used by: SNVT_color_2

```

TYPE ST_LON_CIE1931_percent :
STRUCT
  rX          : REAL;
  rY          : REAL;
  rPercent_Y  : REAL;
END_STRUCT
END_TYPE

```

rX: Min: 0.0 / Max: 0.740 / Invalid: 1.275 / CIE 1931 x value (CIE 1931 color space coordinate). CIE 1931 x-axis color value

rY: Min: 0.0 / Max: 0.840 / Invalid: 1.275 / CIE 1931 y value (CIE 1931 color space coordinate). CIE 1931 y-axis color value

rPercent_Y: Min: 0.0 / Max: 100.0 / Invalid: 655.35 / Luminance (% of full level). Y output in percent of maximum lumen output of the lamp

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.4.3 ST_LON_color_value

Used by: SNVT_color_2

```

TYPE ST_LON_color_value :
STRUCT
  stCIE1931_lumen      : ST_LON_CIE1931_lumen;
  stCIE1931_percent    : ST_LON_CIE1931_percent;
  stRGB                : ST_LON_RGB;
  uiColor_temperature : UINT;
END_STRUCT
END_TYPE

```

stCIE1931_lumen: CIE 1931 color space with lumen. CIE 1931 color space with Y output in lumen (see [ST_LON_CIE1931_lumen](#) [► 641]).

stCIE1931_percent: CIE 1931 color space with percent. CIE 1931 color space with Y output in percent of maximum lumen output of the lamp (see [ST_LON_CIE1931_percent](#) [► 642]).

stRGB: RGB color value (see [ST_LON_RGB](#) [► 643]).

uiColor_temperature: Min: 2800 / Max: 7500 / Invalid: 12750 / Color temperature (degrees Kelvin).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.4.4 ST_LON_RGB

Used by: SNVT_color_2

```
TYPE ST_LON_RGB :
STRUCT
  byRed    : BYTE;
  byGreen  : BYTE;
  byBlue   : BYTE;
END_STRUCT
END_TYPE
```

byRed: Min: 0 / Max: 250 / Red component. Red component for RGB color

byGreen: Min: 0 / Max: 250 / Green component. Green component for RGB color

byBlue: Min: 0 / Max: 250 / Blue component. Blue component for RGB color

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.5 SNVT_ctrl_resp

Data types	Description
ST_LON_range [► 643]	Used by: SNVT_ctrl_resp
ST_LON_sender [► 643]	Used by: SNVT_ctrl_resp

4.2.2.1.5.1 ST_LON_range

Used by: SNVT_ctrl_resp

```
TYPE ST_LON_range :
STRUCT
  uiLower : UINT;
  uiUpper : UINT;
END_STRUCT
END_TYPE
```

uiLower: Min: 1 / Max: 65535 / Invalid: 65535 / Sender range lower ID (ID number).

uiUpper: Min: 1 / Max: 65535 / Invalid: 65535 / Sender range upper ID (ID number).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.5.2 ST_LON_sender

Used by: SNVT_ctrl_resp

```
TYPE ST_LON_sender :
STRUCT
  uiID : UINT;
```

```

    stRange : ST_LON_range;
END_STRUCT
END_TYPE

```

uiID: Min: 1 / Max: 65535 / Invalid: 65535 / Sender ID (ID number).

stRange: Sender ID range (lower, upper) (see [ST_LON_range](#) [► 643]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.6 SNVT_dev_fault

Data types	Description
ST_LON_Dev_type1 [► 644]	Used by: SNVT_dev_fault
ST_LON_pump_ctrl1 [► 644]	Used by: SNVT_dev_fault
ST_LON_valve_pos1 [► 645]	Used by: SNVT_dev_fault

4.2.2.1.6.1 ST_LON_Dev_type1

Used by: SNVT_dev_fault

```

TYPE ST_LON_Dev_type1 :
STRUCT
    stPump_ctrl : ST_LON_pump_ctrl1;
    stValvePos  : ST_LON_valve_pos1;
END_STRUCT
END_TYPE

```

stPump_ctrl: Pump controller device fault information (see [ST_LON_pump_ctrl1](#) [► 644]).

stValvePos: Valve positioner device fault information (see [ST_LON_valve_pos1](#) [► 645]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.6.2 ST_LON_pump_ctrl1

Used by: SNVT_dev_fault

```

TYPE ST_LON_pump_ctrl1 :
STRUCT
    bSf_voltage_low      : BOOL;
    bSf_voltage_high     : BOOL;
    bSf_phase            : BOOL;
    bSf_no_fluid         : BOOL;
    bSf_press_low        : BOOL;
    bSf_press_high       : BOOL;
    bSf_general_fault    : BOOL;
    bSf_reserved1_7      : BOOL;
    bDf_motor_temp       : BOOL;
    bDf_motor_failure    : BOOL;
    bDf_pump_blocked     : BOOL;
    bDf_elect_temp       : BOOL;
    bDf_elect_failure_nf : BOOL;
    bDf_elect_failure    : BOOL;
    bDf_sensor_failure   : BOOL;
    bDf_general_fault    : BOOL;
    byReserved3_0_7      : BYTE;
END_STRUCT
END_TYPE

```

bSf_voltage_low: Supply fault - low voltage (boolean). Supply voltage is too low.

bSf_voltage_high: Supply fault - high voltage (boolean). Supply voltage is too high.

bSf_phase: Supply fault - power phase (boolean). Supply power is missing phase.

bSf_no_fluid: Supply fault - no fluid (boolean). There is no fluid in the pump.

bSf_press_low: Supply fault - low pressure (boolean). System pressure is too low

bSf_press_high: Supply fault - high pressure (boolean). System pressure is too high

bSf_general_fault: General supply fault.

bSf_reserved1_7:

bDf_motor_temp: Device fault - motor temperature (boolean). Motor temperature is too high

bDf_motor_failure: Device fault - motor fatal failure (boolean). Motor has encountered a fatal failure

bDf_pump_blocked: Device fault - pump blocked (boolean). Pump is presently blocked

bDf_elect_temp: Device fault - electronics temperature (boolean). Temperature of the electronic circuitry is too high

bDf_elect_failure_nf: Device fault - electronics failure (boolean). Electronic circuitry has encountered a non-fatal failure

bDf_elect_failure: Device fault - electronics fatal failure (boolean). Electronic circuitry has encountered a fatal failure

bDf_sensor_failure: Device fault - sensor failure (boolean). Sensor has failed on the device

bDf_general_fault: General device fault.

byReserved3_0_7:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.6.3 ST_LON_valve_pos1

Used by: SNVT_dev_fault

```

TYPE ST_LON_valve_pos1 :
STRUCT
  bDf_valve_blocked          : BOOL;
  bDf_blocked_direction_open : BOOL;
  bDf_blocked_direction_close : BOOL;
  bDf_position_error         : BOOL;
  bDf_stroke_Out_of_range    : BOOL;
  bDf_initialization         : BOOL;
  bDf_vibration_cavitation    : BOOL;
  bDf_ed_too_high            : BOOL;
  byReserved1_0_2           : BYTE;
  bEe_oscillating            : BOOL;
  bEe_valve_too_large         : BOOL;
  bEe_valve_too_small        : BOOL;
  byReserved2_6_7           : BYTE;
  bReserved3_0_7            : BOOL;
  bSf_voltage_Out_of_range    : BOOL;
  bSf_electronic_high_temp    : BOOL;
  bSf_frictional_resistance   : BOOL;
  byReserved4_4_6           : BYTE;
  bGeneral_fault             : BOOL;
END_STRUCT
END_TYPE

```

bDf_valve_blocked: Device fault - valve blocked. The valve is presently blocked.

bDf_blocked_direction_open: Device fault - blocked direction open. The device is blocked while attempting to open.

bDf_blocked_direction_close: Device fault - blocked direction close. The device is blocked while attempting to close

bDf_position_error: Device fault - position error. The valve position is not correct

bDf_stroke_Out_of_range: Device fault - stroke out of range. The valve stroke is out of operating range

bDf_initialization: Device fault - initialization error. There was an error during initialization of the device

bDf_vibration_cavitation: Device fault - vibration / cavitation. There are excessive vibrations or cavitations detected

bDf_ed_too_high: Device fault - ED too high. The ED is too high

byReserved1_0_2: This field is reserved.. This field is reserved.

bEe_oscillating: Engineering error - oscillating. There is an oscillating error

bEe_valve_too_large: Engineering error - valve too big. The valve size is too large

bEe_valve_too_small: Engineering error - valve too small. The valve size is too small

byReserved2_6_7: This field is reserved.. This field is reserved.

bReserved3_0_7: This field is reserved.. This field is reserved.

bSf_voltage_Out_of_range: Supply fault - voltage out of range. The voltage is out of the specified acceptable range

bSf_electronic_high_temp: Supply fault - electronics temperature. The temperature of the electronics is too high

bSf_frictional_resistance: Supply fault - frictional resistance. Resistance due to friction is detected

byReserved4_4_6: This field is reserved.. This field is reserved.

bGeneral_fault: General Fault. A General Fault has occurred. Please consult the documentation or contact the valve-controller manufacturer.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.7 SNVT_dev_maint

Data types	Description
ST_LON_Dev_type2 [▶ 646]	Used by: SNVT_dev_maint
ST_LON_pump_ctrl2 [▶ 647]	Used by: SNVT_dev_maint
ST_LON_valve_pos2 [▶ 647]	Used by: SNVT_dev_maint

4.2.2.1.7.1 ST_LON_Dev_type2

Used by: SNVT_dev_maint

```

TYPE ST_LON_Dev_type2 :
STRUCT
    stPump_ctrl : ST_LON_pump_ctrl2;
    stValvePos : ST_LON_valve_pos2;
END_STRUCT
END_TYPE

```

stPump_ctrl: Pump controller device maintenance state (see [ST_LON_pump_ctrl2](#) [[▶ 647](#)]).

stValvePos: Valve positioner device maintenance information (see [ST_LON_valve_pos2](#) [[▶ 647](#)]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.7.2 ST_LON_pump_ctrl2

Used by: SNVT_dev_maint

```

TYPE ST_LON_pump_ctrl2 :
STRUCT
  bService_required    : BOOL;
  bBearings_change     : BOOL;
  bBearings_lubricate  : BOOL;
  bShaftseal_change    : BOOL;
  byReserved1_4_7      : BYTE;
  byReserved2_0_7      : BYTE;
  byReserved3_0_7      : BYTE;
END_STRUCT
END_TYPE

```

bService_required: Service required (boolean) . Service/maintenance is required

bBearings_change: Change bearings (boolean) . Bearings need to be replaced

bBearings_lubricate: Lubricate bearings (boolean) . Bearings need to be greased

bShaftseal_change: Change shaft seal (boolean) . Seal on the shaft needs to be replaced

byReserved1_4_7: Reserve

byReserved2_0_7: Reserve

byReserved3_0_7: Reserve

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.7.3 ST_LON_valve_pos2

Used by: SNVT_dev_maint

```

TYPE ST_LON_valve_pos2 :
STRUCT
  bMotor_maint         : BOOL;
  bPacking_change      : BOOL;
  bElectronics_check   : BOOL;
  bPositioning_check   : BOOL;
  bLubrication_check   : BOOL;
  bReturn_check        : BOOL;
  battery_check        : BOOL;
  bReserved1_7         : BOOL;
  byReserved2_0_7      : BYTE;
  byReserved3_0_6      : BYTE;
  bGeneral_maint       : BOOL;
END_STRUCT
END_TYPE

```

bMotor_maint: Motor Maintenance. The motor requires servicing

bPacking_change: Packing Change. The packing needs to be controlled or changed

bElectronics_check: Check Electronics. The electronics need to be checked (temperature too high)

bPositioning_check: Check Position. The positioning needs to be checked (mechanical or electronic)

bLubrication_check: Check Lubrication. The lubrication need to be checked

bReturn_check: Check Spring-Return Function. The spring-return function needs to be checked

battery_check: Check battery. The battery needs to be checked

bReserved1_7: This field is reserved.. This field is reserved.

byReserved2_0_7: This field is reserved.. This field is reserved.

byReserved3_0_6: This field is reserved.. This field is reserved.

bGeneral_maint: General Maintenance. General Maintenance needs to be performed. Please consult the documentation or your Maintenance Department.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.8 SNVT_dev_status

Data types	Description
ST_LON_Dev_type3 [► 648]	Used by: SNVT_dev_status
ST_LON_pump_ctrl3 [► 648]	Used by: SNVT_dev_status
ST_LON_valve_pos3 [► 649]	Used by: SNVT_dev_status

4.2.2.1.8.1 ST_LON_Dev_type3

Used by: SNVT_dev_status

```
TYPE ST_LON_Dev_type3 :
STRUCT
    stPump_ctrl  : ST_LON_pump_ctrl3;
    stValvePos   : ST_LON_valve_pos3;
END_STRUCT
END_TYPE
```

stPump_ctrl: Pump controller device status (see [ST_LON_pump_ctrl3 \[► 648\]](#)).

stValvePos: Valve positioner device status (see [ST_LON_valve_pos3 \[► 649\]](#)).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.8.2 ST_LON_pump_ctrl3

Used by: SNVT_dev_status

```
TYPE ST_LON_pump_ctrl3 :
STRUCT
    bDevice_fault      : BOOL;
    bSupply_fault      : BOOL;
    bReserved1_2       : BOOL;
    bSpeed_low         : BOOL;
    bSpeed_high        : BOOL;
    bReserved1_5       : BOOL;
    bSetpt_Out_of_range : BOOL;
    bReserved1_7       : BOOL;
    bLocal_control     : BOOL;
    bReserved2_1       : BOOL;
    bRunning           : BOOL;
    bReserved2_3       : BOOL;
    bRemote_press      : BOOL;
    bRemote_flow       : BOOL;
    bRemote_temp       : BOOL;
    bReserved2_7       : BOOL;
```

```

    byReserved3_0_7      : BYTE;
END_STRUCT
END_TYPE

```

bDevice_fault: Pump controller fault (boolean). See SNVT_pump_fault network variable declaration on device

bSupply_fault: Supply fault (boolean). No electrical power, no fluid in pump, etc. See SNVT_pump_fault network variable declaration on device.

bReserved1_2:

bSpeed_low: Low-speed limit of pump (boolean). Pump is running at the lowest possible speed, therefore the requested performance is not possible.

bSpeed_high: High-speed limit of pump (boolean). Pump is running at the highest possible speed, therefore the requested performance is not possible.

bReserved1_5:

bSetpt_Out_of_range: Setpoint out of range (boolean). Chosen override setpoint value is lower than the manufacturer-defined low-setpoint limit or higher than the manufacturer-defined high-setpoint limit.

bReserved1_7:

bLocal_control: Locally controlled pump (boolean). Pump is locally operated (hardware override)

bReserved2_1:

bRunning: Running pump (boolean). Pump is presently running

bReserved2_3:

bRemote_press: Remote pressure sensor (boolean). Pump controller is using a remote pressure sensor

bRemote_flow: Remote flow sensor (boolean). Pump controller is using a remote flow sensor

bRemote_temp: Remote temperature sensor (boolean). Pump controller is using a remote temperature sensor

bReserved2_7:

byReserved3_0_7:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.8.3 ST_LON_valve_pos3

Used by: SNVT_dev_status

```

TYPE ST_LON_valve_pos3 :
STRUCT
    bRunning          : BOOL;
    bAdapting         : BOOL;
    bInitializing     : BOOL;
    bLocal_control    : BOOL;
    bSetpt_Out_of_range : BOOL;
    bRemote_ctrl_signal : BOOL;
    byReserved1_6_7   : BYTE;
    bHw_emergency     : BOOL;
    bSw_emergency     : BOOL;
    byReserved2_2_7   : BYTE;
    byReserved3_0_7   : BYTE;
END_STRUCT
END_TYPE

```

bRunning: Valve Running. Valve is presently being positioned.

bAdapting: Adapting. Valve is presently adapting.

bInitializing: Initializing. Valve is presently initializing.

bLocal_control: Local Control. The valve operation is being locally controlled.

bSetpt_Out_of_range: Setpoint out of range. Chosen override setpoint value is lower than the manufacturer-defined low-setpoint limit or higher than the manufacturer-defined high-setpoint limit.

bRemote_ctrl_signal: Remote Control Signal. The remote-control signal is active.

byReserved1_6_7: This field is reserved.. This field is reserved.

bHw_emergency: Hardware Emergency. The hardware-emergency state is active

bSw_emergency: Software Emergency. The software-emergency state is active

byReserved2_2_7: This field is reserved.. This field is reserved.

byReserved3_0_7: This field is reserved.. This field is reserved.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.9 SNVT_ex_control

Data types	Description
ST_LON_Control_device_addr [► 650]	Used by: SNVT_ex_control

4.2.2.1.9.1 ST_LON_Control_device_addr

Used by: SNVT_ex_control

```

TYPE ST_LON_Control_device_addr :
STRUCT
  arrDomain_id      : ARRAY [0..5] OF BYTE;
  byDomain_length   : BYTE;
  bySubnet          : BYTE;
  byNode            : BYTE;
END_STRUCT
END_TYPE

```

arrDomain_id: Domain ID (array of 6 bytes). ANSI/CEA-709.1 domain ID

byDomain_length: Domain length (ANSI/CEA-709.1 domain length). Valid domain lengths are 0, 1, 3, and 6.

bySubnet: Min: 1 / Max: 255 / Subnet (subnet number). There can be 255 subnets (1-255) in a domain.

byNode: Min: 1 / Max: 127 / Node (node number). There can be 127 nodes (1-127) in a subnet.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.10 SNVT_file_req

Data types	Description
ST_LON_addrt [► 651]	Used by: SNVT_file_req
ST_LON_dest_address [► 651]	Used by: SNVT_file_req
ST_LON_gp [► 651]	Used by: SNVT_file_req

Data types	Description
ST_LON_sn [► 652]	Used by: SNVT_file_req

4.2.2.1.10.1 ST_LON_addrt

Used by: SNVT_file_req

```

TYPE ST_LON_addrt :
STRUCT
    byType : BYTE;
    uiIndex : UINT;
END_STRUCT
END_TYPE

```

byType: Min: 0 / Max: 33 / Address type (8-bit unsigned value). The address-table address type is 33 (0x21).

uiIndex: Min: 0 / Max: 65535 / Address table index (16-bit unsigned value).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.10.2 ST_LON_dest_address

Used by: SNVT_file_req

```

TYPE ST_LON_dest_address :
STRUCT
    stAddrt : ST_LON_addrt;
    stSn : ST_LON_sn;
    stGp : ST_LON_gp;
END_STRUCT
END_TYPE

```

stAddrt: Address table entry (Address table entry). ANSI/CEA-709.1 address in device's internal address table entry (see [ST_LON_addrt \[► 651\]](#)).

stSn: Subnet-node address (LonWorks subnet-node address) (see [ST_LON_sn \[► 652\]](#)).

stGp: Group address (LonWorks group address) (see [ST_LON_gp \[► 651\]](#)).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.10.3 ST_LON_gp

Used by: SNVT_file_req

```

TYPE ST_LON_gp :
STRUCT
    byType : BYTE;
    bySize : BYTE;
    bDomain : BOOL;
    byUnused : BYTE;
    byRetry : BYTE;
    byTx_timer : BYTE;
    byGroup : BYTE;
END_STRUCT
END_TYPE

```

byType: Min: 0 / Max: 1 / Address type (boolean). The group address type is 1.

bySize: Min: 0 / Max: 65 / Size (LonWorks group size). An acknowledged group can have from 0-64 addressees, plus the sender.

bDomain: Min: 0 / Max: 1 / Domain (LonWorks domain index).

byUnused: Unused field. This field is reserved.

byRetry: Min: 0 / Max: 15 / Retry count (number of retries).

byTx_timer: Min: 0 / Max: 15 / Transaction timer (timer code value).

byGroup: Min: 0 / Max: 255 / Group. There can be 256 groups (0-255) in a domain.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.10.4 ST_LON_sn

Used by: SNVT_file_req

```

TYPE ST_LON_sn :
STRUCT
  byType      : BYTE;
  bDomain     : BOOL;
  byNode      : BYTE;
  byRetry     : BYTE;
  byTx_timer  : BYTE;
  bySubnet    : BYTE;
END_STRUCT
END_TYPE

```

byType: Min: 1 / Max: 1 / Address type (8-bit unsigned value). The subnet-node address type is 1.

bDomain: Domain (LonWorks domain index).

byNode: Min: 0 / Max: 127 / Node (node number). There can be 127 nodes (1-127) in a subnet.

byRetry: Min: 0 / Max: 15 / Retry count (number of retries).

byTx_timer: Min: 0 / Max: 15 / Transaction timer (timer code value).

bySubnet: Min: 0 / Max: 255 / Subnet (subnet number). There can be 255 subnets (1-255) in a domain.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.11 SNVT_file_status

Data types	Description
ST_LON_address [► 652]	Used by: FB_Write_Address_Table / FB_Read_Address_Table
ST_LON_adr [► 653]	Used by: SNVT_file_status
ST_LON_descriptor [► 653]	Used by: SNVT_file_status

4.2.2.1.11.1 ST_LON_address

Used by: FB_Write_Address_Table / FB_Read_Address_Table

```

TYPE ST_LON_address :
STRUCT
  arrDomain_id : ARRAY [0..5] OF BYTE;
  byDomain_length : BYTE;

```

```

    bySubnet      : BYTE;
    byNode       : BYTE;
END_STRUCT
END_TYPE

```

arrDomain_id: Domain ID (array of 6 bytes). ANSI/CEA-709.1 domain ID

byDomain_length: Min: 0 / Max: 6 / Domain length (ANSI/CEA-709.1 domain length). Valid domain lengths are 0, 1, 3, and 6.

bySubnet: Min: 0 / Max: 255 / Subnet (subnet number). There can be 255 subnets (1-255) in a domain.

byNode: Min: 0 / Max: 127 / Node (node number). There can be 127 nodes (1-127) in a subnet.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.11.2 ST_LON_adr

Used by: SNVT_file_status

```

TYPE ST_LON_adr :
STRUCT
    stDescriptor : ST_LON_descriptor;
    stAddress    : ST_LON_address;
END_STRUCT
END_TYPE

```

stDescriptor: Descriptor (see [ST LON descriptor \[► 653\]](#)).

stAddress: Address (see [ST LON address \[► 652\]](#)).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.11.3 ST_LON_descriptor

Used by: SNVT_file_status

```

TYPE ST_LON_descriptor :
STRUCT
    sFile_info : STRING(16);
    udiSize    : UDINT;
    uiType     : UINT;
END_STRUCT
END_TYPE

```

sFile_info: File info (array of 16 characters)

udiSize: Min: 0 / Max: 2147483647 / Size (bytes)

uiType: Min: 0 / Max: 65535 / Type

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.12 SNVT_lamp_status

Data types	Description
ST_LON Alarm actual [► 654]	Used by: SNVT_lamp_status

Data types	Description
ST_LON_alarm_previous [► 655]	Used by: SNVT_lamp_status

4.2.2.1.12.1 ST_LON_Alarm_actual

Used by: SNVT_lamp_status

```

TYPE ST_LON_Alarm_actual :
STRUCT
    bLamp_current_high      : BOOL;
    bLamp_current_low       : BOOL;
    bMain_current_high      : BOOL;
    bMain_current_low       : BOOL;
    bLamp_voltage_high      : BOOL;
    bLamp_voltage_low       : BOOL;
    bMain_voltage_high      : BOOL;
    bMain_voltage_low       : BOOL;
    bPowerfactor_low        : BOOL;
    bOLC_temp_high          : BOOL;
    bPower_high             : BOOL;
    bPower_low              : BOOL;
    bRelay_failure          : BOOL;
    bCap_failure            : BOOL;
    bLamp_failure           : BOOL;
    bBallast_failure        : BOOL;
    bInter_com_failure      : BOOL;
    bExter_com_failure      : BOOL;
    bMain_volt_below_spec   : BOOL;
    bLamp_restart_count     : BOOL;
    bFading_ready           : BOOL;
    bBallast_temp_high      : BOOL;
    bDigi_in_A              : BOOL;
    bDigi_in_B              : BOOL;
    bBit_25_res              : BOOL;
    bBit_26_res              : BOOL;
    bBit_27_res              : BOOL;
    bBit_28_res              : BOOL;
    bBit_29_res              : BOOL;
    bBit_30_res              : BOOL;
    bBit_31_res              : BOOL;
    bBit_32_res              : BOOL;
    bBit_33_res              : BOOL;
    bBit_34_res              : BOOL;
    bBit_35_res              : BOOL;
    bBit_36_res              : BOOL;
    bBit_37_res              : BOOL;
    bBit_38_res              : BOOL;
    bBit_39_res              : BOOL;
    bBit_40_res              : BOOL;
END_STRUCT
END_TYPE

```

bLamp_current_high: Lamp current too high.

bLamp_current_low: Lamp current too low.

bMain_current_high: Main current too high.

bMain_current_low: Main current too low.

bLamp_voltage_high: Lamp voltage too high.

bLamp_voltage_low: Lamp voltage too low.

bMain_voltage_high: Main voltage too high.

bMain_voltage_low: Main voltage too low.

bPowerfactor_low: Powerfactor too low.

bOLC_temp_high: Temperature too high.

bPower_high: Power too high.

bPower_low: Power too low.

bRelay_failure: Relay failure.

bCap_failure: Capacitor failure.

bLamp_failure: Lamp failure.

bBallast_failure: Ballast failure.

bInter_com_failure: Internal communication failure.

bExter_com_failure: External communication failure.

bMain_volt_below_spec: Main voltage below performance specification.

bLamp_restart_count: Lamp restart retry counter / cycling failure.

bFading_ready: Fading ready.

bBallast_temp_high: Ballast temperature too high.

bDigi_in_A: digital input A active.

bDigi_in_B: digital input B active.

bBit_25_res:

bBit_26_res:

bBit_27_res:

bBit_28_res:

bBit_29_res:

bBit_30_res:

bBit_31_res:

bBit_32_res:

bBit_33_res:

bBit_34_res:

bBit_35_res:

bBit_36_res:

bBit_37_res:

bBit_38_res:

bBit_39_res:

bBit_40_res:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.12.2 ST_LON_alarm_previous

Used by: SNVT_lamp_status

```

TYPE ST_LON_alarm_previous :
STRUCT
  bLamp_current_high      : BOOL;
  bLamp_current_low       : BOOL;
  bMain_current_high      : BOOL;
  bMain_current_low       : BOOL;

```



```

bLamp_voltage_high      : BOOL;
bLamp_voltage_low       : BOOL;
bMain_voltage_high      : BOOL;
bMain_voltage_low       : BOOL;
bPowerfactor_low        : BOOL;
bOLC_temp_high          : BOOL;
bPower_high             : BOOL;
bPower_low              : BOOL;
bRelay_failure          : BOOL;
bCap_failure            : BOOL;
bLamp_failure           : BOOL;
bBallast_failure        : BOOL;
bInter_com_failure      : BOOL;
bExter_com_failure      : BOOL;
bMain_volt_below_spec   : BOOL;
bLamp_restart_count     : BOOL;
bFading_ready           : BOOL;
bBallast_temp_high      : BOOL;
bDigi_in_A              : BOOL;
bDigi_in_B              : BOOL;
bBit_25_res             : BOOL;
bBit_26_res             : BOOL;
bBit_27_res             : BOOL;
bBit_28_res             : BOOL;
bBit_29_res             : BOOL;
bBit_30_res             : BOOL;
bBit_31_res             : BOOL;
bBit_32_res             : BOOL;
bBit_33_res             : BOOL;
bBit_34_res             : BOOL;
bBit_35_res             : BOOL;
bBit_36_res             : BOOL;
bBit_37_res             : BOOL;
bBit_38_res             : BOOL;
bBit_39_res             : BOOL;
bBit_40_res             : BOOL;
END_STRUCT
END_TYPE

```

bLamp_current_high: Lamp current too high.

bLamp_current_low: Lamp current too low.

bMain_current_high: Main current too high.

bMain_current_low: Main current too low.

bLamp_voltage_high: Lamp voltage too high.

bLamp_voltage_low: Lamp voltage too low.

bMain_voltage_high: Main voltage too high.

bMain_voltage_low: Main voltage too low.

bPowerfactor_low: Powerfactor too low.

bOLC_temp_high: Temperature too high.

bPower_high: Power too high.

bPower_low: Power too low.

bRelay_failure: Relay failure.

bCap_failure: Capacitor failure.

bLamp_failure: Lamp failure.

bBallast_failure: Ballast failure.

bInter_com_failure: Internal communication failure.

bExter_com_failure: External communication failure.

bMain_volt_below_spec: Main voltage below performance specification.

bLamp_restart_count: Lamp restart retry counter / cycling failure.

bFading_ready: Fading ready.

bBallast_temp_high: Ballast temperature too high.

bDigi_in_A: digital input A active.

bDigi_in_B: digital input B active.

bBit_25_res:

bBit_26_res:

bBit_27_res:

bBit_28_res:

bBit_29_res:

bBit_30_res:

bBit_31_res:

bBit_32_res:

bBit_33_res:

bBit_34_res:

bBit_35_res:

bBit_36_res:

bBit_37_res:

bBit_38_res:

bBit_39_res:

bBit_40_res:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.13 SNVT_pos_ctrl

Data types	Description
ST_LON_abspos [► 657]	Used by: SNVT_pos_ctrl
ST_LON_Value [► 658]	Used by: SNVT_pos_ctrl

4.2.2.1.13.1 ST_LON_abspos

Used by: SNVT_pos_ctrl

```

TYPE ST_LON_abspos :
STRUCT
  rPan   : REAL;
  rTilt  : REAL;
  rZoom  : REAL;
END_STRUCT
END_TYPE

```

rPan: Min: -359.98 / Max: 360 / Pan position.

rTilt: Min: -359.98 / Max: 360 / Tilt position.

rZoom: Min: -163.84 / Max: 163.835 / Zoom position.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.13.2 ST_LON_Value

Used by: SNVT_pos_ctrl

```

TYPE ST_LON_Value :
STRUCT
  byNumber : BYTE;
  stAbspos : ST_LON_abspos;
END_STRUCT
END_TYPE

```

byNumber: Min: 0 / Max: 255 / Action number (action number).

stAbspos: Function absolute values (pan, tilt, zoom) (see [ST_LON_abspos](#) [[▶ 657](#)]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.14 SNVT_rac_ctrl

Data types	Description
ST_LON_addr_dest [▶ 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_init [▶ 658]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_addr_talk [▶ 659]	Used by: SNVT_rac_ctrl
ST_LON_p2m [▶ 659]	Used by: SNVT_rac_req / SNVT_rac_ctrl
ST_LON_p2p [▶ 660]	Used by: SNVT_rac_req / SNVT_rac_ctrl

4.2.2.1.14.1 ST_LON_addr_dest

Used by: SNVT_rac_req / SNVT_rac_ctrl

```

TYPE ST_LON_addr_dest :
STRUCT
  stP2p : ST_LON_p2p;
  stP2m : ST_LON_p2m;
END_STRUCT
END_TYPE

```

stP2p: (see [ST_LON_p2p](#) [[▶ 660](#)]).

stP2m: (see [ST_LON_p2m](#) [[▶ 659](#)]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.14.2 ST_LON_addr_init

Used by: SNVT_rac_req / SNVT_rac_ctrl

```

TYPE ST_LON_addr_init :
STRUCT
  byUnit_id      : BYTE;
  byLocation     : BYTE;
  byCar_id       : BYTE;
  byReserved     : BYTE;
  eAudio_sensor_type : E_LON_rail_audio_sensor_type_t;
END_STRUCT
END_TYPE

```

byUnit_id: Min: 0 / Max: 15

byLocation: Min: 0 / Max: 15

byCar_id: Min: 0 / Max: 31

byReserved:

eAudio_sensor_type: (see [E_LON_rail_audio_sensor_type_t](#) [► 613]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.14.3 ST_LON_addr_talk

Used by: SNVT_rac_ctrl

```

TYPE ST_LON_addr_talk :
STRUCT
  byUnit_id      : BYTE;
  byLocation     : BYTE;
  byCar_id       : BYTE;
  byReserved     : BYTE;
  eAudio_sensor_type : E_LON_rail_audio_sensor_type_t;
END_STRUCT
END_TYPE

```

byUnit_id: Min: 0 / Max: 15

byLocation: Min: 0 / Max: 15

byCar_id: Min: 0 / Max: 31

byReserved:

eAudio_sensor_type: (see [E_LON_rail_audio_sensor_type_t](#) [► 613]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.14.4 ST_LON_p2m

Used by: SNVT_rac_req / SNVT_rac_ctrl

```

TYPE ST_LON_p2m :
STRUCT
  byMask_unit      : BYTE;
  arrMask_car      : ARRAY[0..3] OF BYTE;
  arrMask_location : ARRAY[0..1] OF BYTE;
  arrMask_audio    : ARRAY[0..2] OF BYTE;
END_STRUCT
END_TYPE

```

byMask_unit: Min: 0 / Max: 255

arrMask_car: unsigned char [4]

arrMask_location: unsigned char [2]

arrMask_audio: unsigned char [3]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.14.5 ST_LON_p2p

Used by: SNVT_rac_req / SNVT_rac_ctrl

```

TYPE ST_LON_p2p :
STRUCT
  byUnit_id      : BYTE;
  byLocation     : BYTE;
  byCar_id       : BYTE;
  byReserved     : BYTE;
  eAudio_sensor_type : E_LON_rail_audio_sensor_type_t;
END_STRUCT
END_TYPE

```

byUnit_id: Min: 0 / Max: 15

byLocation: Min: 0 / Max: 15

byCar_id: Min: 0 / Max: 31

byReserved:

eAudio_sensor_type: (see [E_LON_rail_audio_sensor_type_t](#) [► 613]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.15 SNVT_rac_req

Data types	Description
ST_LON_rac_req_addr_dest [► 660]	
ST_LON_rac_req_addr_init [► 661]	

4.2.2.1.15.1 ST_LON_rac_req_addr_dest

```

TYPE ST_LON_rac_req_addr_dest :
STRUCT
  stP2p : ST_LON_p2p;
  stP2m : ST_LON_p2m;
END_STRUCT
END_TYPE

```

stP2p: (see [ST_LON_p2p](#) [► 660]).

stP2m: (see [ST_LON_p2m](#) [► 659]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.15.2 ST_LON_rac_req_addr_init

```

TYPE ST_LON_rac_req_addr_init :
STRUCT
  byUnit_id      : BYTE;
  byLocation     : BYTE;
  byCar_id       : BYTE;
  byReserved     : BYTE;
  eAudio_sensor_type : E_LON_rail_audio_sensor_type_t;
END_STRUCT
END_TYPE

```

byUnit_id:

byLocation:

byCar_id:

byReserved:

eAudio_sensor_type: (see [E_LON_rail_audio_sensor_type_t](#) [► 613]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.16 SNVT_switch_2

Data types	Description
ST_LON_setting [► 661]	Used by: SNVT_switch_2

4.2.2.1.16.1 ST_LON_setting

Used by: SNVT_switch_2

```

TYPE ST_LON_setting :
STRUCT
  rValue      : REAL;
  rChange     : REAL;
  byDelay     : BYTE;
  byGroup_number : BYTE;
  rMultiplier : REAL;
  iAngle      : INT;
  siFan_level : SINT;
  byButton_number : BYTE;
END_STRUCT
END_TYPE

```

rValue: Min: 0 / Max: 100 / Value. Percent of full level when state is on. Reports last level for outputs when state is off.

rChange: Min: 0 / Max: 100 / Percent change. Percent change to level.

byDelay: Min: 0 / Max: 255 / On or off delay (seconds) (seconds). Time delay before changing state to on or off.

byGroup_number: Min: 0 / Max: 63 / Group number. Group number that is enabled or disabled by the SW_ENABLE_GROUP and SW_DISABLE_GROUP states in the state field; if 0, all groups are enabled or disabled.

rMultiplier: Min: 0 / Max: 2.54 / Factor (percent). Multiplier for the level

iAngle: Min: -180 / Max: 180 / Rotation angle (degrees). Rotation angle for devices that support a rotation setting such as blinds.

siFan_level: Min: -100 / Max: 100 / Fan level. Percent of full level fan speed when state is on. Reports last fan speed for outputs when state is off. Positive values represent the down direction, and negative values represent the up direction.

byButton_number: Min: 0 / Max: 255 / Button number. The button number to activate when the state field is set to SW_SET_BUTTON, no invalid value

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.17 SNVT_time_zone

Data types	Description
ST_LON_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_end_DST [► 662]	Used by: SNVT_time_zone
ST_LON_M_start_DST [► 663]	Used by: SNVT_time_zone
ST_LON_start_DST [► 663]	Used by: SNVT_time_zone

4.2.2.1.17.1 ST_LON_end_DST

Used by: SNVT_time_zone

```

TYPE ST_LON_end_DST :
STRUCT
    uiG_day_of_end_DST : UINT;
    uiJ_day_of_end_DST : UINT;
    stM_end_DST       : ST_LON_M_end_DST;
END_STRUCT
END_TYPE

```

uiG_day_of_end_DST: Min: 0 / Max: 365 / Gregorian calendar day of end DST (days).

uiJ_day_of_end_DST: Min: 1 / Max: 365 / Julian calendar day of end DST (days).

stM_end_DST: Meu calendar day of end DST (month, week, dateday) (see [ST_LON_M_end_DST](#) [[► 662](#)]).

stM_end_DST.byMonth_of_end_DST: Min: 1 / Max: 12 / Month of end DST (months).

stM_end_DST.byWeek_of_end_DST: Min: 1 / Max: 5 / Week of end DST (weeks).

stM_end_DST.eDateday_of_end_DST: [E_LON_days_of_week_t](#) [[► 593](#)] / Day of week (day names).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.17.2 ST_LON_M_end_DST

Used by: SNVT_time_zone

```

TYPE ST_LON_M_end_DST :
STRUCT
    byMonth_of_end_DST : BYTE;
    byWeek_of_end_DST  : BYTE;
    eDateday_of_end_DST : E_LON_days_of_week_t;
END_STRUCT
END_TYPE

```

[E_LON_days_of_week_t](#) [[► 593](#)]

byMonth_of_end_DST: Min: 1 / Max: 12 / Month of end DST (months).

byWeek_of_end_DST: Min: 1 / Max: 5 / Week of end DST (weeks).

eDateday_of_end_DST: Day of week (day names).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.17.3 ST_LON_M_start_DST

Used by: SNVT_time_zone

```

TYPE ST_LON_M_start_DST :
STRUCT
  byMonth_of_start_DST : BYTE;
  byWeek_of_start_DST  : BYTE;
  eDateday_of_start_DST : E_LON_days_of_week_t;
END_STRUCT
END_TYPE

```

byMonth_of_start_DST: Min: 1 / Max: 12 / Month of start DST (months).

byWeek_of_start_DST: Min: 1 / Max: 5 / Week of start DST (weeks).

eDateday_of_start_DST: Day of week (day names) (see [E_LON_days_of_week_t](#) [► 593]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.1.17.4 ST_LON_start_DST

Used by: SNVT_time_zone

```

TYPE ST_LON_start_DST :
STRUCT
  uiG_day_of_start_DST : UINT;
  uiJ_day_of_start_DST : UINT;
  stM_start_DST        : ST_LON_M_start_DST;
END_STRUCT
END_TYPE

```

uiG_day_of_start_DST: Min: 0 / Max: 365 / Gregorian calendar day of start DST (days).

uiJ_day_of_start_DST: Min: 1 / Max: 365 / Julian calendar day of start DST (days).

stM_start_DST: Meu calendar day of start DST (month, week, dateday) (see [ST_LON_M_start_DST](#) [► 663]).

stM_start_DST. byMonth_of_start_DST: Min: 1 / Max: 12 / Month of start DST (months).

stM_start_DST. byWeek_of_start_DST: Min: 1 / Max: 5 / Week of start DST (weeks).

stM_start_DST. eDateday_of_start_DST: [E_LON_days_of_week_t](#) [► 593] / Day of week (day names).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.2 ST_LON_Parameter_IN_36B

Process image of the inputs

This variable must be linked with the KL6401.

```

TYPE ST_LON_Parameter_IN_36B :
STRUCT
  wParameterStatus : WORD;
  wDummy           : WORD;
  stParameterReadValue : ST_LON_ParameterInterface;

```



```

    byParameterType      : BYTE;
    byLONStatus          : BYTE;
END_STRUCT
END_TYPE

```

wParameterStatus: Status word.

wDummy: Dummy for CX9000.

stParameterReadValue: Data structure.

stParameterReadValue. arrParameterInterface: 8 word data (see [ST_LON_ParameterInterface](#) [► 666]).

byParameterType: Parameter type

byLONStatus: LON status.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.3 ST_LON_Parameter_OUT_36B

Process image of the outputs

This variable must be linked with the KL6401.

```

TYPE ST_LON_Parameter_OUT_36B :
STRUCT
    wParameterControl : WORD;
    wDummy            : WORD;
    stParametervalue  : ST_LON_ParameterInterface;
    byCMD             : BYTE;
    byIdx             : BYTE;
END_STRUCT
END_TYPE

```

wParameterControl: Control word.

wDummy: Dummy for CX9000.

stParametervalue: Data structure.

stParametervalue. arrParameterInterface: 8 word data (see [ST_LON_ParameterInterface](#) [► 666]).

byCMD: LON command

byIdx: LON index

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.4 ST_ExplicitMessage

Explicit Message

```

TYPE ST_ExplicitMessage :
STRUCT
    byEcpM_1      : BYTE;
    byEcpM_2      : BYTE;
    byLen         : BYTE;
    byAddressingTyp : BYTE;
    byRetry       : BYTE;
    byRptTimer    : BYTE;
    byTxTimer     : BYTE;
    byRcvTimer    : BYTE;
    bySubNet      : BYTE;

```

```

byDestSubNet      : BYTE;
byNode            : BYTE;
arrNeuronId       : ARRAY [0..7] OF BYTE;
byTyp             : BYTE;
arrData           : ARRAY [0..47] OF BYTE;
END_STRUCT
END_TYPE

```

byEcpM_1: Ecp M1

byEcpM_2: Ecp M2

byLen: Length

byAddressingTyp: Address type

byRetry: Retry

byRptTimer: Rpt Timer

byTxTimer: Tx Timer

byRcvTimer: Rcv Timer

bySubNet: Sub Net

byDestSubNet: Target Sub Net

byNode: Node

arrNeuronId: Neuron address

byTyp: Type

arrData: 48 data bytes

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.5 ST_LON_Communication

Connection between "FB_LON_KL6401" and the send/receive function blocks

```

TYPE ST_LON_Communication :
STRUCT
  arrWriteLONdata      : ARRAY[0..iLONBufferSize] OF ST_LON_WriteData;
  bWrite               : BOOL;
  bWriteBusy           : BOOL;
  bReadBusy            : BOOL;
  arrParameterReadValue : ARRAY[1..32] OF BYTE;
  wNV_Index            : WORD;
  eParameterDataType   : E_LON_Parameter_Datatypes;
  bWriteLONdataToTable : BOOL;
  bTerminalOk          : BOOL;
  byActBuffer          : BYTE;
  rActBuffer           : REAL;
  rMaxBuffer           : REAL;
END_STRUCT
END_TYPE

```

arrWriteLONdata: Send buffer.

bWrite: Data is being sent.

bWriteBusy: Write-OnChange active.

bReadBusy: Read-OnChange active.

arrParameterReadValue: 32 data bytes.

wNV_Index: NV index.

eParameterDataType: Data type of the LON variable (SNVT) (see [E_LON parameter data types \[► 575\]](#)).

bWriteLONdataToTable: Writing of the data in the table is active.

bTerminalOk: Initialization of the KL6401 was completed successfully.

byActBuffer: Number of instructions in the send buffer.

rActBuffer: Current utilization of the send buffer in percent.

rMaxBuffer: Maximum utilization of the send buffer in percent. The value can be cancelled with the input variable "bResetMaxBuffer".

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.6 ST_LON_ParameterInterface

LON parameter interface

```
TYPE ST_LON_ParameterInterface :
STRUCT
    arrParameterInterface : ARRAY[1..8] OF DWORD;
END_STRUCT
END_TYPE
```

arrParameterInterface: 8 word data.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.7 ST_LON_WriteData

Structure of the send buffer

```
TYPE ST_LON_WriteData :
STRUCT
    wNVIndex          : WORD;
    udiSrcAddrWriteValue : PVOID;
    uiLenWriteValue    : UINT;
    udiAdrBusy         : PVOID;
    udiAdrErrorKL       : PVOID;
END_STRUCT
END_TYPE
```

wNVIndex: NV index.

udiSrcAddrWriteValue: Address of the value to be sent.

uiLenWriteValue: Length of the value to be sent.

udiAdrBusy: Address of output "bBusy".

udiAdrErrorKL: Address of output "dwErrorKL".

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.8 ST_Prm

Structure for configuration

```
TYPE ST_Prm :
STRUCT
  byCMD          : BYTE;
  byIDX          : BYTE;
  wControl       : WORD;
  wStatus        : WORD;
  wParameterControl : WORD;
  wError         : WORD;
  arrParameterInterface : ARRAY[1..8] OF DWORD;
END_STRUCT
END_TYPE
```

byCMD: LON Command.

byIDX: LON Index.

wControl: Control Word.

wStatus: Status Word.

wParameterControl: Control Word.

wError: Error information.

arrParameterInterface: 8 Data Word.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.9 ST_KL6401

Structure for the configuration

```
TYPE ST_KL6401 :
STRUCT
  wStatus        : WORD;
  wControl       : WORD;
  dwPointer_IN   : PVOID;
  dwPointer_OUT  : PVOID;
  arrParameterInterface : ARRAY[1..8] OF DWORD;
END_STRUCT
END_TYPE
```

wStatus: Status Word.

wControl: Control Word.

dwPointer_IN: Pointer In.

dwPointer_OUT: Pointer Out.

arrParameterInterface: 8 Word data.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.10 ST_LON_AddressTable

Used by: FB_Write_Address_Table / FB_Read_Address_Table

```

TYPE ST_LON_AddressTable :
STRUCT
  bType      : BOOL;
  usiNode    : USINT;
  bDomain    : BOOL;
  usiMember  : USINT;
  usiRPT_Timer : USINT;
  usiRetry   : USINT;
  usiRCV_Timer : USINT;
  usiTx_Timer : USINT;
  byGroup    : BYTE;
END_STRUCT
END_TYPE

```

bType: Type.

usiNode: Node.

bDomain: Domain.

usiMember: Member.

usiRPT_Timer: RPT Timer.

usiRetry: Retry.

usiRCV_Timer: Rcv timer.

usiTx_Timer: Tx timer.

byGroup: group.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.11 ST_LON_ConfigTable

Used by: FB_Write_Config_Table / FB_Read_Config_Table

```

TYPE ST_LON_ConfigTable :
STRUCT
  bPriority    : BOOL;
  bDirection  : BOOL;
  wSelector    : WORD;
  bTurnaround : BOOL;
  usiService   : USINT;
  bAuth       : BOOL;
  usiAddrIndex : USINT;
END_STRUCT
END_TYPE

```

bPriority: priority.

bDirection: direction.

wSelector: selector.

bTurnaround: turn around.

usiService: service.

bAuth: auth.

usiAddrIndex: Address index.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.12 ST_LON_DomainTable

Used by: FB_Write_Domain_Table / FB_Read_Domain_Table

```
TYPE ST_LON_DomainTable :
STRUCT
  arrDomainID      : ARRAY[0..5] OF BYTE;
  bySubNet         : BYTE;
  bCloneDomainBit  : BOOL;
  byNode           : BYTE;
  byLen            : BYTE;
  arrKey           : ARRAY[0..5] OF BYTE := 16#FF;
END_STRUCT
END_TYPE
```

arrDomainID: domain id.

bySubNet: sub net.

bCloneDomainBit: Clone domain bit.

byNode: node.

byLen: Len.

arrKey: key.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.13 ST_LON_SNVt_alarm

Used by: SNVT_alarm

```
TYPE ST_LON_SNVt_alarm :
STRUCT
  arrLocation      : ARRAY[0..5] OF BYTE;
  uiObject_Id      : UINT;
  eAlarm_type      : E_LON_alarm_type_t;
  ePriority_level   : E_LON_priority_level_t;
  uiIndex_To_SNVt : WORD;
  arrValue         : ARRAY[0..3] OF BYTE;
  uiYear           : UINT;
  uiMonth          : UINT;
  uiDay            : UINT;
  uiHour           : UINT;
  uiMinute         : UINT;
  uiSecond         : UINT;
  uiMilliseconds   : UINT;
  arrAlarm_limit   : ARRAY[0..3] OF BYTE;
END_STRUCT
END_TYPE
```

arrLocation: Location (array of 6 bytes). Location code for the node

uiObject_Id: Object ID (object index). ID of object within node

eAlarm_type: Alarm type (alarm type names) (see [E_LON_alarm_type_t](#) [► 583]).

ePriority_level: Priority level (priority level names) (see [E_LON_priority_level_t](#) [► 612]).

uiIndex_To_SNVt: Index of NV (index of NV causing alarm).

arrValue: Value (array of 4 bytes). The type of this field is dependent on the NV causing the alarm condition.

uiYear: Year (years). Zero (0) means year not specified.

uiMonth: Month (months). Zero (0) means month not specified.

uiDay: Day (days). Zero (0) means day not specified.

uiHour: Hour (hours). This field uses a 24-hour value.

uiMinute: Minute (minutes).

uiSecond: Second (seconds).

uiMilliseconds: Millisecond (milliseconds).

arrAlarm_limit: Alarm limit (array of 4 bytes). The type of this field is dependent on the NV causing the alarm condition.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.14 ST_LON_SNVT_alarm_2

Used by: SNVT_alarm_2

```

TYPE ST_LON_SNVT_alarm_2 :
STRUCT
    eAlarm_type      : E_LON_alarm_type_t;
    ePriority_level   : E_LON_priority_level_t;
    udiAlarm_time    : UDINT;
    iMilliseconds    : INT;
    bySequence_number : BYTE;
    sDescription      : STRING(22);
END_STRUCT
END_TYPE

```

eAlarm_type: Alarm type (alarm type names). Alarm condition reported by this update (see [E_LON_alarm_type_t](#) [► 583]).

ePriority_level: Priority level (priority level names). Priority level of the alarm reported by this update (see [E_LON_priority_level_t](#) [► 612]).

udiAlarm_time: Alarm time (seconds). Alarm time in seconds since 2000-01-01T00:00:00Z (the 0 hour of 1 January 2000, Coordinated Universal Time)

iMilliseconds: Milliseconds (milliseconds). Alarm time in milliseconds since the second specified by the alarm_time field

bySequence_number: Sequence number(count). Sequence number for this update. Incremented by one for each update from an alarm source. Wraps to zero after reaching 255. An alarm receiver can use the sequence number to detect missed alarm messages.

sDescription: Description (array of 22 characters). Alarm description with NUL terminator. The terminator is not required if the description requires 22 characters. May include a reference to a language string, delimited by a 0x80 value.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.15 ST_LON_SNVT_chlr_status

Used by: SNVT_chlr_status

```

TYPE ST_LON_SNVT_chlr_status :
STRUCT
    eChlr_run_mode   : E_LON_chiller_t;
    echlr_op_mode    : E_LON_hvac_t;
    stChlr_state     : ST_LON_chlr_state;
END_STRUCT
END_TYPE

```

eChlr_run_mode: Chiller run mode (chiller run mode names) (see [E_LON_chiller_t](#) [► 588]).

echlr_op_mode: Chiller operating mode (HVAC mode names) (see [E_LON_hvac_t](#) [► 607]).

stChlr_state: Chiller state flags (alarm, enabled, local, limited, chiller water flow, condenser water flow) (see [ST_LON_chlr_state](#) [► 637]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.16 ST_LON_SNVT_clothes_w_a

Used by: SNVT_clothes_w_a

```

TYPE ST_LON_SNVT_clothes_w_a :
STRUCT
  bAlarm_reset      : BOOL;
  bWar_water_supply : BOOL;
  bWar_drain_slow   : BOOL;
  bWar_door_open    : BOOL;
  bWar_load_unbalanced : BOOL;
  bWar_filter_cleaning : BOOL;
  bWar_hoses_reversed : BOOL;
  bWar_voltage_low   : BOOL;
  bWar_power_failure : BOOL;
  bWar_drain_open    : BOOL;
  bWar_execute_fail  : BOOL;
  bWar_door_locked   : BOOL;
  bWar_service       : BOOL;
  bRsrvd5            : BOOL;
  bRsrvd6            : BOOL;
  bRsrvd7            : BOOL;
  bErr_motor_stall   : BOOL;
  bErr_water_temp    : BOOL;
  bErr_pressure      : BOOL;
  bErr_overflow      : BOOL;
  bErr_water_heat    : BOOL;
  bErr_water_leak    : BOOL;
  bErr_motor_speed   : BOOL;
  bErr_wash_thermistor : BOOL;
  bErr_dry_thermistor : BOOL;
  bErr_dry_overheat  : BOOL;
  bErr_dry_heating   : BOOL;
  bErr_dry_fan       : BOOL;
  bErr_rsrvd4        : BOOL;
  bErr_rsrvd5        : BOOL;
  bErr_rsrvd6        : BOOL;
  bErr_rsrvd7        : BOOL;
  byErr_rsrvd0_7     : BYTE;
  byManuf_code       : BYTE;
END_STRUCT
END_TYPE

```

bAlarm_reset:

bWar_water_supply:

bWar_drain_slow:

bWar_door_open:

bWar_load_unbalanced:

bWar_filter_cleaning:

bWar_hoses_reversed:

bWar_voltage_low:

bWar_power_failure:

bWar_drain_open:
bWar_execute_fail:
bWar_door_locked:
bWar_service:
bRsrvd5:
bRsrvd6:
bRsrvd7:
bErr_motor_stall:
bErr_water_temp:
bErr_pressure:
bErr_overflow:
bErr_water_heat:
bErr_water_leak:
bErr_motor_speed:
bErr_wash_thermistor:
bErr_dry_thermistor:
bErr_dry_overheat:
bErr_dry_heating:
bErr_dry_fan:
bErr_rsrvd4:
bErr_rsrvd5:
bErr_rsrvd6:
bErr_rsrvd7:
byErr_rsrvd0_7:
byManuf_code: Min: 0 / Max: 255

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.17 ST_LON_SNVT_clothes_w_c

Used by: SNVT_clothes_w_c

```

TYPE ST_LON_SNVT_clothes_w_c :
STRUCT
  eCycle          : E_LON_appl_cwc_t;
  eSubcycle       : E_LON_appl_cws_t;
  byRervd         : BYTE;
  station         : ST_LON_action;
  stFunction       : ST_LON_function;
  uiTime_remaining : UINT;
END_STRUCT
END_TYPE
  
```

eCycle: (see [E_LON_appl_cwc_t](#) [► 584]).

eSubcycle: (see [E_LON_appl_cws_t](#) [► 586]).

byRervd:

stAction: (see [ST_LON_action](#) [► 637]).

stFunction: (see [ST_LON_function](#) [► 638]).

uiTime_remaining: Min: 0 / Max: 65535.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.18 ST_LON_SNVT_clothes_w_m

Used by: SNVT_clothes_w_m

```
TYPE ST_LON_SNVT_clothes_w_m :
STRUCT
    bDoor_ajar : BOOL;
    bDrain_on  : BOOL;
    byReserved : BYTE;
END_STRUCT
END_TYPE
```

bDoor_ajar: Door/Lid Ajar. The door/lid of the washer is not fully closed.

bDrain_on: Drain On. The drain is on.

byReserved: Reserve.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.19 ST_LON_SNVT_clothes_w_s

Used by: SNVT_clothes_w_s

```
TYPE ST_LON_SNVT_clothes_w_s :
STRUCT
    eCycle      : E_LON_appl_cwc_t;
    eSubcycle   : E_LON_appl_cws_t;
    stWasher_command_data : ST_LON_SNVT_clothes_w_c;
    uiTime_remaining : UINT;
    stAlarm      : ST_LON_alarm;
END_STRUCT
END_TYPE
```

eCycle: (see [E_LON_appl_cwc_t](#) [► 584]).

eSubcycle: (see [E_LON_appl_cws_t](#) [► 586]).

stWasher_command_data: (see [ST_LON_SNVT_clothes_w_c](#) [► 672]).

uiTime_remaining: Min: 0 / Max: 65535

stAlarm: (see [ST_LON_alarm](#) [► 640]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.20 ST_LON_SNVT_color

Used by: SNVT_color

```
TYPE ST_LON_SNVT_color :
STRUCT
    rL_star : REAL;
    rA_star : REAL;
    rB_star : REAL;
END_STRUCT
END_TYPE
```

rL_star: Min: 0 / Max: 100.0 / L*

rA_star: Min: -200.0 / Max: 200.0 / a*

rB_star: Min: -200.0 / Max: 200.0 / b*

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.21 ST_LON_SNVT_color_2

Used by: SNVT_color_2

```
TYPE ST_LON_SNVT_color_2 :
STRUCT
    eEncoding      : E_LON_color_encoding_t;
    stColor_value  : ST_LON_color_value;
END_STRUCT
END_TYPE
```

eEncoding: Color encoding. Color encoding specified by the color_value union; additional encodings may be added (see [E_LON_color_encoding_t](#) [► 589]).

stColor_value: Color value. Color value encoded as specified by the encoding field (see [ST_LON_color_value](#) [► 642]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.22 ST_LON_SNVT_ctrl_req

Used by: SNVT_ctrl_req

```
TYPE ST_LON_SNVT_ctrl_req :
STRUCT
    uiReceiver_id : UINT;
    uiSender_id   : UINT;
    bySender_prio : BYTE;
END_STRUCT
END_TYPE
```

uiReceiver_id: Min: 1 / Max: 65535 / Invalid / 0 / Receiver ID (ID number).

uiSender_id: Min: 1 / Max: 65535 / Invalid / 65535 / Sender ID (ID number).

bySender_prio: Min: 0 / Max: 200 / Sender priority (priority value).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.23 ST_LON_SNVT_ctrl_resp

Used by: SNVT_ctrl_resp

```
TYPE ST_LON_SNVT_ctrl_resp :
STRUCT
    eStatus      : E_LON_control_resp_t;
    stSender     : ST_LON_sender;
    uiController_id : UINT;
END_STRUCT
END_TYPE
```

eStatus: Control response type (control response type names) (see [E_LON_control_resp_t](#) [► 589]).

stSender: Sender ID (see [ST_LON_sender](#) [► 643]).

uiController_id: Min: 1 / Max: 65535 / Invalid: 65535 / Controller ID (ID number).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.24 ST_LON_SNVT_currency

Used by: SNVT_currency

```
TYPE ST_LON_SNVT_currency :
STRUCT
    eCurrency     : E_LON_currency_t;
    siPower_of_10 : SINT;
    diValue       : DINT;
END_STRUCT
END_TYPE
```

eCurrency: Currency (currency names) (see [E_LON_currency_t](#) [► 590]).

siPower_of_10: Min: -128 / Max: 127 / Magnitude (power of 10).

diValue: Min: -2147483648 / Max: 2147483647 / Value (currency value). Credit is positive, debit is negative.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.25 ST_LON_SNVT_date_event

Used by: SNVT_date_event

```
TYPE ST_LON_SNVT_date_event :
STRUCT
    iDays_to_active   : INT;
    iDays_to_inactive : INT;
    sName             : STRING(22);
END_STRUCT
END_TYPE
```

iDays_to_active: Min: -32768 / Max: 32767 / Invalid: 32767 / Days to active (days). Number of days until this schedule will be active. Positive if a schedule is inactive; zero or negative if a schedule is active.

iDays_to_inactive: Min: -32768 / Max: 32767 / Invalid: -32768 / Days to inactive (days). Number of days until this schedule will be inactive. Positive if a schedule is active; zero or negative if a schedule is inactive.

sName: 22 characters / Schedule name (array of 22 characters). Nul-terminated schedule name. The nul terminator is not required if the name is 22 characters.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.26 ST_LON_SNVT_dev_fault

Used by: SNVT_dev_fault

```

TYPE ST_LON_SNVT_dev_fault :
STRUCT
  eDevice_select : E_LON_device_select_t;
  stDev_type     : ST_LON_Dev_type1;
END_STRUCT
END_TYPE

```

eDevice_select: Device selection (device selection names) (see [E_LON_device_select_t](#) [► 596]). Determines the interpretation of the network-variable content.

stDev_type: Union of device fault structures for various devices (see [ST_LON_Dev_type1](#) [► 644]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.27 ST_LON_SNVT_dev_maint

Used by: SNVT_dev_maint

```

TYPE ST_LON_SNVT_dev_maint :
STRUCT
  eDevice_select : E_LON_device_select_t;
  stDev_type     : ST_LON_Dev_type2;
END_STRUCT
END_TYPE

```

eDevice_select: Device selection (device selection names) (see [E_LON_device_select_t](#) [► 596]). Determines the interpretation of the network-variable content.

stDev_type: Union of device maintenance state structures for various devices (see [ST_LON_Dev_type2](#) [► 646]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.28 ST_LON_SNVT_dev_status

Used by: SNVT_dev_status

```

TYPE ST_LON_SNVT_dev_status :
STRUCT
  eDevice_select : E_LON_device_select_t;
  stDev_type     : ST_LON_Dev_type3;
END_STRUCT
END_TYPE

```

eDevice_select: Device selection (device selection names) (see [E_LON_device_select_t](#) [► 596]). Determines the interpretation of the network-variable content

stDev_type: Union of device status for various devices (see [ST_LON_Dev_type3](#) [► 648]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.29 ST_LON_SNVT_earth_pos

Used by: SNVT_earth_pos

```

TYPE ST_LON_SNVT_earth_pos :
STRUCT
  bLatitude_direction : BOOL;
  bLongitude_direction : BOOL;
  byLatitude_deg : BYTE;
  rLatitude_min : REAL;
  bylongitude_deg : BYTE;
  rLongitude_min : REAL;
  rHeight_above_sea : REAL;
END_STRUCT
END_TYPE

```

bLatitude_direction: FALSE = South latitude, TRUE = North latitude.

bLongitude_direction: FALSE = East longitude, TRUE = West longitude.

byLatitude_deg: Min: 0 / Max: 90 / Invalid: 255 / Latitude degrees (degrees).

rLatitude_min: Min: 0.0 / Max: 59.999 / Invalid: 65.535/ Latitude minutes (minutes).

bylongitude_deg: Min: 0 / Max: 180 / Invalid: 255 / Longitude degrees (degrees).

rLongitude_min: Min: 0.0 / Max: 59.999 / Invalid: 65.535/ Longitude minutes (minutes).

rHeight_above_sea: Min: -3.40E+38 / Max: 3.40E+38 / Height above sea level (meters).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.30 ST_LON_SNVT_elapsed_tm

Used by: SNVT_elapsed_tm

```

TYPE ST_LON_SNVT_elapsed_tm :
STRUCT
  uiDay : UINT;
  uiHour : UINT;
  uiMinute : UINT;
  uiSecond : UINT;
  uiMillisecond : UINT;
END_STRUCT
END_TYPE

```

uiDay: Min: 0 / Max: 65535 / Days (days). The value 65535 represents NULL or unknown elapsed time.

uiHour: Min: 0 / Max: 23 / Hours (hours). This field uses a 24-hour value.

uiMinute: Min: 0 / Max: 59 / Minutes (minutes).

uiSecond: Min: 0 / Max: 59 / Seconds (seconds).

uiMillisecond: Min: 0 / Max: 999 / Milliseconds (milliseconds).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.31 ST_LON_SNVT_ent_status

Used by: SNVT_ent_status

```

TYPE ST_LON_SNVT_ent_status :
STRUCT
  bUnlocked      : BOOL;
  bLocked        : BOOL;
  bSecurity_locked : BOOL;
  bClosed        : BOOL;
  bOpen          : BOOL;
  bIn_alarm      : BOOL;
  bIn_error_cond : BOOL;
  bOpen_pre_alarm : BOOL;
  bOpen_alarm     : BOOL;
  bService_alarm  : BOOL;
  bTamper        : BOOL;
  bEntry_req     : BOOL;
  bExit_req      : BOOL;
  bKey_req       : BOOL;
  bSafety_ext_req : BOOL;
  bEmergency_req  : BOOL;
  bUnable_lock   : BOOL;
  bUnable_unlock : BOOL;
  bStuck         : BOOL;
  bForced_open   : BOOL;
  bForced_close  : BOOL;
  bOpening       : BOOL;
  bClosing       : BOOL;
  bMoving        : BOOL;
  bStopped       : BOOL;
  bSafety_alarm   : BOOL;
  bUnknown_state : BOOL;
  eCmd_fb        : E_LON_ent_opmode_cmd_t;
END_STRUCT
END_TYPE

```

bUnlocked: Unlocked device (boolean). Device is in unlocked position.

bLocked: Locked device (boolean). Device is in locked position.

bSecurity_locked: Security locked (boolean). Device is in a security-driven locked position.

bClosed: Closed device (boolean). Device is in a closed position.

bOpen: Open device (boolean). Device is in an open position.

bIn_alarm: In alarm state (boolean). The device is in the alarm state.

bIn_error_cond: In error condition (boolean). Device has an error condition.

bOpen_pre_alarm: Open device, pre-alarm (boolean). Device is open, and in warning state.

bOpen_alarm: Open Device, alarm state (boolean). Device is open, and in not-closed alarm state.

bService_alarm: Service alarm (boolean). Device needs service.

bTamper: Tamper mode (boolean). Device has detected tamper.

bEntry_req: Entry request pending (boolean). Device has a pending entry request.

bExit_req: Exit request pending (boolean). Device has a pending exit request.

bKey_req: Key request pending (boolean). Device has a pending key request.

bSafety_ext_req: Safety-exit request pending (boolean). Device has a pending safety-exit request.

bEmergency_req: Emergency-exit request pending (boolean). Device has a pending emergency-exit request.

bUnable_lock: Unable to lock (boolean). Device is unable to close and/or lock.

bUnable_unlock: Unable to unlock (boolean). Device is unable to open and/or unlock.

bStuck: Device is stuck (boolean). Device is unable to move.

bForced_open: Forced-open Device (boolean). Device is/was forced to go to an open position.

bForced_close: Forced-closed Device (boolean). Device is/was forced to go to a closed position.

bOpening: Device is opening (boolean). Device is currently opening from a closed position.

bClosing: Device is closing (boolean). Device is currently closing from an open position.

bMoving: Device is in motion (boolean). Device is currently changing position.

bStopped: Device Stopped (boolean). The device is stopped and can be moved manually.

bSafety_alarm: Safety-alarm (boolean). Device is in a safety-alarm state.

bUnknown_state: Unknown state (boolean). The state of the device is currently unknown.

eCmd_fb: Command feedback (entry command names) (see [E_LON_ent_opmode_cmd_t](#) [► 598]). Feedback of requested-operation-mode of device.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.32 ST_LON_SNVt_environment

Used by: SNVT_environment

```

TYPE ST_LON_SNVt_environment :
STRUCT
    uiLampCurrent      : UINT;
    uiLampVoltage      : UINT;
    uiSupplyVoltage    : UINT;
    uiSupplyCurrent    : UINT;
    rBallastTemp       : REAL;
    rPower             : REAL;
    rPowerFactor       : REAL;
    udiRunHours        : UDINT;
    lrEnergy           : LREAL;
END_STRUCT
END_TYPE

```

uiLampCurrent: Min: 0 / Max: 65534 / Invalid: 65535 / Lamp current (milliAmperes). This is the current the lamp consumes.

uiLampVoltage: Min: 0 / Max: 65535 / Lamp Voltage (Volts). This is the lamp voltage.

uiSupplyVoltage: Min: 0 / Max: 65535 / Supply Voltage (Volts). This is the luminaire supply voltage.

uiSupplyCurrent: Min: 0 / Max: 65534 / Invalid: 65535 / Supply Current (milliAmperes). This is the luminaire supply current.

rBallastTemp: Min: -273.17 / Max: 327.67 / Ballast temperature (degrees Celsius). This is the temperature at the ballast.

rPower: Min: 0 / Max: 6553.5 / Power (Watts). The value shows the at this moment consumed power of the ballast and the luminaire.

rPowerFactor: Min: -1 / Max: 1 / Power factor. This is the luminaire power-factor.

udiRunHours: Min: 0 / Max: 4294967294 / Run Hours (hours). This are the run hours since the last maintenance.

lrEnergy: Min: -214748364.8 / Max: 214748364.7 / Energy (kiloWatt-hours). This is the energy the luminair has consumed since the last maintenance.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.33 ST_LON_SNVT_ex_control

Used by: SNVT_ex_control

```

TYPE ST_LON_SNVT_ex_control :
STRUCT
    eControl_status      : E_LON_ex_control_t;
    stControl_device_addr : ST_LON_Control_device_addr;
END_STRUCT
END_TYPE

```

eControl_status: Control type (control type names) (see [E_LON_ex_control_t](#) [► 599]).

stControl_device_addr: Control device address (LonWorks subnet-node address) (see [ST_LON_Control_device_addr](#) [► 650]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.34 ST_LON_SNVT_file_pos

Used by: SNVT_file_pos

```

TYPE ST_LON_SNVT_file_pos :
STRUCT
    diRw_ptr      : DINT;
    uiRw_length   : UINT;
END_STRUCT
END_TYPE

```

diRw_ptr: Min: 0 / Max: 2147483647 / Read/Write pointer (file byte address).

uiRw_length: Min: 0 / Max: 65535 / Read/Write length (number of bytes).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.35 ST_LON_SNVT_file_req

Used by: SNVT_file_req

```

TYPE ST_LON_SNVT_file_req :
STRUCT
    eRequest      : E_LON_file_request_t;
    uiIndex       : UINT;
    uiReceive_timeout : UINT;
    stDest_address : ST_LON_dest_address;
    byAuth_on     : BYTE;
    byPrio_on     : BYTE;
END_STRUCT
END_TYPE

```

eRequest: Request (file request names) (see [E_LON_file_request_t](#) [► 599]).

uiIndex: Min: 0 / Max: 65535 / Index (file index).

uiReceive_timeout: Min: 0 / Max: 65535 / Receive timeout (milliseconds).

stDest_address: Destination address (LonWorks address) (see [ST_LON_dest_address](#) [► 651]).

byAuth_on: Min: 0 / Max: 1 / Authentication on (boolean). This field specifies whether the message requires authentication.

byPrio_on: Min: 0 / Max: 1 / Priority on (boolean). This field specifies whether the message is to be sent with priority.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.36 ST_LON_SNVT_file_status

Used by: SNVT_file_status

```
TYPE ST_LON_SNVT_file_status :
STRUCT
    eStatus      : E_LON_file_status_t;
    uiNumber_of_files : UINT;
    uiSelected_file  : UINT;
END_STRUCT
END_TYPE
```

eStatus: Status (file status names) (see [E_LON_file_status_t](#) [► 600]).

uiNumber_of_files: Min: 0 / Max: 65535 / Number of files (count).

uiSelected_file: Min: 0 / Max: 65535 / Selected file (file index).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.37 ST_LON_SNVT_geo_loc

Used by: SNVT_geo_loc

```
TYPE ST_LON_SNVT_geo_loc :
STRUCT
    lrLongitude : LREAL;
    lrLatitude  : LREAL;
    rElevation  : REAL;
    sName       : STRING(19);
END_STRUCT
END_TYPE
```

lrLongitude: Min: -180.0 / Max: 180.0 / Longitude. Longitude is given as an angular measurement ranging from 0° at the prime meridian to +180° eastward and -180° westward.

lrLatitude: Min: -90.0 / Max: 90.0 / Latitude. Latitude is given as an angular measurement ranging from 0° at the equator to +90° northward and -90° southward.

rElevation: Min: -3.40E+51 / Max: 3..40+51 / Elevation (meters).

sName:

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.38 ST_LON_SNVT_hvac_overid

Used by: SNVT_hvac_overid

```

TYPE ST_LON_SNVT_hvac_overid :
STRUCT
  eState      : E_LON_hvac_overid_t;
  rPercent    : REAL;
  uiFlow      : UINT;
END_STRUCT
END_TYPE

```

eState: HVAC override state (override state names) (see [E_LON_hvac_overid_t](#) [► 604]).

rPercent: Min: -163,84 / Max: 163,835 / Percent (% of full scale). Position or flow override value.

uiFlow: Min: 0 / Max: 65535 / Flow (liters/second).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.39 ST_LON_SNVT_hvac_satsts

Used by: SNVT_hvac_satsts

```

TYPE ST_LON_SNVT_hvac_satsts :
STRUCT
  bPri_heat      : BOOL;
  bSec_heat      : BOOL;
  bPri_cool      : BOOL;
  bSec_cool      : BOOL;
  bPri_duct_starved : BOOL;
  bSec_duct_starved : BOOL;
  bReserved1     : BOOL;
  bReserved2     : BOOL;
  byReserved1    : BYTE;
  byManufacturer_defined : BYTE;
END_STRUCT
END_TYPE

```

bPri_heat: Primary heating saturation status (boolean). A value of 0 indicates primary heating is not saturated. A value of 1 indicates primary heating is saturated.

bSec_heat: Secondary heating saturation status (boolean). A value of 0 indicates secondary heating is not saturated. A value of 1 indicates secondary heating is saturated.

bPri_cool: Primary cooling saturation status (boolean). A value of 0 indicates primary cooling is not saturated. A value of 1 indicates primary cooling is saturated.

bSec_cool: Secondary cooling saturation status (boolean). A value of 0 indicates secondary cooling is not saturated. A value of 1 indicates secondary cooling is saturated.

bPri_duct_starved: Primary duct saturation status (boolean). A value of 0 indicates primary duct is not saturated (starved). A value of 1 indicates primary duct is saturated (starved).

bSec_duct_starved: Secondary duct saturation status (boolean). A value of 0 indicates secondary duct is not saturated (starved). A value of 1 indicates secondary duct is saturated (starved).

bReserved1:

bReserved2:

byReserved1: Min: 0 / Max: 15

byManufacturer_defined: Min: 0 / Max: 15 / Manufacturer defined (boolean). Four manufacturer-defined bits -- please see product documentation for proper interpretation of these bits

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.40 ST_LON_SNVt_hvac_status

Used by: SNVT_hvac_status

```

TYPE ST_LON_SNVt_hvac_status :
STRUCT
    eMode          : E_LON_hvac_t;
    rHeat_output_primary : REAL;
    rHeat_output_secondary : REAL;
    rCool_output    : REAL;
    rEcon_output    : REAL;
    rFan_output     : REAL;
    byIn_alarm      : BYTE;
END_STRUCT
END_TYPE

```

eMode: HVAC status mode (HVAC mode names) (see [E_LON_hvac_t](#) [► 607]).

rHeat_output_primary: Min: -163.8400 / Max: 163.8350 / Primary heat output (% of full scale).

rHeat_output_secondary: Min: -163.8400 / Max: 163.8350 / Secondary heat output (% of full scale).

rCool_output: Min: -163.8400 / Max: 163.8350 / Cooling output (% of full scale).

rEcon_output: Min: -163.8400 / Max: 163.8350 / Economizer output (% of full scale).

rFan_output: Min: -163.8400 / Max: 163.8350 / Fan output (% of full scale).

byIn_alarm: Min: 0 / Max: 255 / in_alarm

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.41 ST_LON_SNVt_lamp_status

Used by: SNVT_lamp_status

```

TYPE ST_LON_SNVt_lamp_status :
STRUCT
    stTime_actual    : TIMESTRUCT;
    stAlarm_actual   : ST_LON_Alarm_actual;
    stTime_previous  : TIMESTRUCT;
    stAlarm_previous : ST_LON_alarm_previous;
END_STRUCT
END_TYPE

```

stTime_actual: Actual alarm message. This is the time stamp for the actual alarm message (see TIMESTRUCT).

stAlarm_actual: (see [ST_LON_Alarm_actual](#) [► 654]).

stTime_previous: Time Stamp Old. This is the time stamp for an old alarm message (see TIMESTRUCT).

stAlarm_previous: (see [ST_LON_alarm_previous](#) [► 655]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.42 ST_LON_SNVt_log_fx_request

Used by: SNVT_log_fx_request

```

TYPE ST_LON_SNVt_log_fx_request :
STRUCT
    uiRequested_log : UINT;
    udiRecord_count : UDINT;

```

```

    stStart_time      : TIMESTRUCT;
    stEnd_time        : TIMESTRUCT;
END_STRUCT
END_TYPE

```

uiRequested_log: Min: 1 / Max: 65535 / Requested log number. The log number of the data log to be transferred. Logs are numbered from 1 to number_of_logs.

udiRecord_count: Min: 0 / Max: 4294967295 / Record count. The maximum number of log records to be transferred.

stStart_time: Start time. (seconds) (see TIMESTRUCT). Timestamp of first record to be transferred. If no records exist with this timestamp, the first record with a timestamp after this timestamp is the starting record.

stEnd_time: End time. (seconds) (see TIMESTRUCT). Timestamp of last record to be transferred. If no records exist with this timestamp, the last record with a timestamp before this timestamp is the ending record.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.43 ST_LON_SNVT_log_fx_status

Used by: SNVT_log_fx_status

```

TYPE ST_LON_SNVT_log_fx_status :
STRUCT
    byRequestor_subnet : BYTE;
    byRequestor_node   : BYTE;
    uiLog_number        : UINT;
    rComplete           : REAL;
END_STRUCT
END_TYPE

```

byRequestor_subnet: Min: 1 / Max: 255 / Requestor subnet ID. Subnet ID of the device that requested the current log file transfer. Invalid if a file transfer is not active.

byRequestor_node: Min: 1 / Max: 255 / Requestor node ID. Node ID of the device that requested the current log file transfer. Invalid if a file transfer is not active.

uiLog_number: Min: 1 / Max: 65535 / Data log number. Log number for the log file currently being transferred via FTP. Invalid if none.

rComplete: Min: 0 / Max: 100 / Data log file transfer percent complete. Percent of the current data log file transfer that has been completed. Invalid if none.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.44 ST_LON_SNVT_log_status

Used by: SNVT_log_status

```

TYPE ST_LON_SNVT_log_status :
STRUCT
    eStatus              : E_LON_log_status_t;
    uiLog_number          : UINT;
    rLevel               : REAL;
    diRecord_count        : DINT;
    diByte_count          : DINT;
    diTotal_record_count  : DINT;
    diRecords_since_notification : DINT;
    stCurrent_notify_time : TIMESTRUCT;
END_STRUCT
END_TYPE

```

```

    stPrevious_notify_time      : Timestruct;
END_STRUCT
END_TYPE

```

eStatus: Log state. State of the selected data log (see [E_LON_log_status_t](#) [► 608]).

uiLog_number: Min: 1 / Max: 65535 / Selected log number. The log number of the reported data log. Logs are numbered from 1 to number_of_logs.

rLevel: Min: 0 / Max: 100 / Log level (Percent). The percent of maximum records in the selected data log.

diRecord_count: Min: -2147483648 / Max: 2147483647 / Record count.(records). Number of records in the selected data log. A record is a logged value and any associated data such as a timestamp.

diByte_count: Min: -2147483648 / Max: 2147483647 / Byte count. (bytes). Number of bytes in the selected data log.

diTotal_record_count: Min: -2147483648 / Max: 2147483647 / Total record count. (records). Total records collected in the selected data log since the data log was created. Wraps to 0 on overflow.

diRecords_since_notification: Min: -2147483648 / Max: 2147483647 / Records since notification. (records). The number of log records collected since the last notification.

stCurrent_notify_time: Current notify time (see Timestruct). Timestamp of the most recently collected data point.

stPrevious_notify_time: Previous notify time (seconds) (see Timestruct). Timestamp of the most recently collected data point in the previous update to the log status.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.45 ST_LON_SNVT_muldiv

Used by: SNVT_muldiv

```

TYPE ST_LON_SNVT_muldiv :
STRUCT
    uiMultiplier : UINT;
    uiDivisor    : UINT;
END_STRUCT
END_TYPE

```

uiMultiplier: Min: 0 / Max: 65535 / Multiplier (16-bit unsigned value).

uiDivisor: Min: 0 / Max: 65535 / Divisor (16-bit unsigned value).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.46 ST_LON_SNVT_nv_type

Used by: SNVT_nv_type

```

TYPE ST_LON_SNVT_nv_type :
STRUCT
    arrType_program_ID : ARRAY[0..7] OF BYTE;
    byType_scope       : BYTE;
    uiType_index       : UINT;
    eType_category     : E_LON_nv_type_category_t;
    byType_length      : BYTE;
    iScaling_factor_a  : INT;
    iScaling_factor_b  : INT;

```

```

    iScaling_factor_c : INT;
END_STRUCT
END_TYPE

```

arrType_program_ID: Min: 0 / Max: 255 / Type program ID. Program ID template of the resource file containing the network variable type definition.

byType_scope: Min: 0 / Max: 6 / Type scope (file scope). Scope of the resource file containing the network variable type definition.

uiType_index: Min: 1 / Max: 65535 / Type index (type index). Index within the specified resource file of the network variable type definition.

eType_category: Type category (type category names) (see [E_LON_nv_type_category t](#) [► 609]). Type category of the network variable type.

byType_length: Min: 1 / Max: 31 / Type length (bytes). Length of the network variable type

iScaling_factor_a: Min: -32768 / Max: 32767 / Scaling factor a. Scaling multiplier 'a' where $ScaledValue = a \cdot (10^b) \cdot (RawValue + c)$

iScaling_factor_b: Min: -32768 / Max: 32767 / Scaling factor b. Exponent 'b' where $ScaledValue = a \cdot (10^b) \cdot (RawValue + c)$

iScaling_factor_c: Min: -32768 / Max: 32767 / Scaling Factor c. Offset 'c' where $ScaledValue = a \cdot (10^b) \cdot (RawValue + c)$

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.47 ST_LON_SNVT_obj_request

Used by: SNVT_obj_request

```

TYPE ST_LON_SNVT_obj_request :
STRUCT
    uiObject_id      : UINT;
    eObject_request  : E_LON_object_request_t;
END_STRUCT
END_TYPE

```

uiObject_id: Min: 0 / Max: 65535 / Object ID (object index).

eObject_request: Object request (object request names) (see [E_LON_object_request t](#) [► 610]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.48 ST_LON_SNVT_obj_status

Used by: SNVT_obj_status

```

TYPE ST_LON_SNVT_obj_status :
STRUCT
    uiObject_id      : UINT;
    bInvalid_id      : BOOL;
    bInvalid_request  : BOOL;
    bDisabled         : BOOL;
    bOut_of_limits    : BOOL;
    bOpen_circuit     : BOOL;
    bOut_of_service   : BOOL;
    bMechanical_fault : BOOL;
    bFeedback_failure : BOOL;
    bOver_range       : BOOL;
    bUnder_range      : BOOL;

```

```

bElectrical_fault      : BOOL;
bUnable_to_measure    : BOOL;
bComm_failure         : BOOL;
bFail_self_test       : BOOL;
bSelf_test_in_progress : BOOL;
bLocked_out           : BOOL;
bManual_control       : BOOL;
bIn_alarm             : BOOL;
bIn_override          : BOOL;
bReport_mask          : BOOL;
bProgramming_mode     : BOOL;
bProgramming_fail     : BOOL;
bAlarm_notify_disabled : BOOL;
bReset_complete       : BOOL;
byReserved2           : BYTE;
END_STRUCT
END_TYPE

```

uiObject_id: Min: 0 / Max: 65535 / Object ID (object index).

blInvalid_id: Invalid-ID flag (boolean).

blInvalid_request: Invalid-request flag (boolean).

bDisabled: Disabled flag (boolean).

bOut_of_limits: Out-of-limits flag (boolean).

bOpen_circuit: Open-circuit flag (boolean).

bOut_of_service: Out-of-service flag (boolean).

bMechanical_fault: Mechanical-fault flag (boolean).

bFeedback_failure: Feedback-failure flag (boolean).

bOver_range: Over-range flag (boolean).

bUnder_range: Under-range flag (boolean).

bElectrical_fault: Electrical-fault flag (boolean).

bUnable_to_measure: Unable-to-measure flag (boolean).

bComm_failure: Communications-failure flag (boolean).

bFail_self_test: Failed-self-test flag (boolean).

bSelf_test_in_progress: Self-test-in-progress flag (boolean).

bLocked_out: Locked-out flag (boolean).

bManual_control: Manual-control flag (boolean).

bln_alarm: Input-alarm flag (boolean).

bln_override: Input-override flag (boolean).

bReport_mask: Report-mask flag (boolean).

bProgramming_mode: Programming-mode flag (boolean).

bProgramming_fail: Programming-fail flag (boolean).

bAlarm_notify_disabled: Alarm-notify-disabled flag (boolean).

bReset_complete: Reset (boolean).

byReserved2: This field is reserved.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.49 ST_LON_SNVt_pos_ctrl

Used by: SNVT_pos_ctrl

```

TYPE ST_LON_SNVt_pos_ctrl :
STRUCT
  uiReceiver_id      : UINT;
  uiController_id    : UINT;
  byController_prio  : BYTE;
  eFunction           : E_LON_cam_func_t;
  eAction            : E_LON_cam_act_t;
  stValue            : ST_LON_Value;
END_STRUCT
END_TYPE

```

uiReceiver_id: Min: 0 / Max: 65535 / Receiver ID (ID number).

uiController_id: Min: 0 / Max: 65535 / Controller ID (ID number).

byController_prio: Min: 0 / Max: 100 / Controller priority (priority value).

eFunction: Camera function (camera function names) (see [E_LON_cam_func_t](#) [► 588]).

eAction: Camera action (camera action names) (see [E_LON_cam_act_t](#) [► 587]).

stValue: Function value (see [ST_LON_Value](#) [► 658]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.50 ST_LON_SNVt_preset

Used by: SNVT_preset

```

TYPE ST_LON_SNVt_preset :
STRUCT
  eLearn             : E_LON_learn_mode_t;
  uiSelector         : UINT;
  arrValue           : ARRAY[0..3] OF BYTE;
  uiDay              : UINT;
  uiHour             : UINT;
  uiMinute           : UINT;
  uiSecond           : UINT;
  uiMillisecond      : UINT;
END_STRUCT
END_TYPE

```

eLearn: Learn mode (learn mode names) (see [E_LON_learn_mode_t](#) [► 608]).

uiSelector: Min: 0 / Max: 65535 / Selector (16-bit unsigned value). The selector is used to choose which preset.

arrValue: Value (array of 4 bytes).

uiDay: Min: 0 / Max: 65535 / Days (days). The value 65535 represents NULL or unknown elapsed time.

uiHour: Min: 0 / Max: 23 / Hours (hours). This field uses a 24-hour value.

uiMinute: Min: 0 / Max: 59 / Minutes (minutes).

uiSecond: Min: 0 / Max: 59 / Seconds (seconds).

uiMillisecond: Min: 0 / Max: 999 / Milliseconds (milliseconds).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.51 ST_LON_SNVt_privacyzone

Used by: SNVT_privacyzone

```

TYPE ST_LON_SNVt_privacyzone :
STRUCT
  eAction      : E_LON_privacyzone_t;
  byNumber     : BYTE;
  uiCamera_id  : UINT;
END_STRUCT
END_TYPE

```

eAction: Privacy zone action type (privacy zone action type names) (see [E_LON_privacyzone_t](#) [► 613]).

byNumber: Min: 0 / Max: 255 / Zone number (zone number).

uiCamera_id: Min: 0 / Max: 65535 / Camera ID (ID number).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.52 ST_LON_SNVt_ptz

Used by: SNVT_ptz

```

TYPE ST_LON_SNVt_ptz :
STRUCT
  ePan_dir     : E_LON_pan_dir_t;
  rPan_speed   : REAL;
  eTilt_dir    : E_LON_tilt_dir_t;
  rTilt_speed  : REAL;
  eZoom        : E_LON_zoom_t;
  rZoom_speed  : REAL;
END_STRUCT
END_TYPE

```

ePan_dir: Pan direction (pan direction names) (see [E_LON_pan_dir_t](#) [► 612]).

rPan_speed: Min: 0 / Max: 100 / Pan speed (% of full level).

eTilt_dir: Tilt direction (tilt direction names) (see [E_LON_tilt_dir_t](#) [► 628]).

rTilt_speed: Min: 0 / Max: 100 / Tilt speed (% of full level).

eZoom: Zoom direction (zoom direction names) (see [E_LON_zoom_t](#) [► 630]).

rZoom_speed: Min: 0 / Max: 100 / Zoom speed (% of full level).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.53 ST_LON_SNVt_pump_sensor

Used by: SNVT_pump_sensor

```

TYPE ST_LON_SNVt_pump_sensor :
STRUCT
  rRotational_speed : REAL;
  rBody_temperature : REAL;

```

```

rMotor_external_temperature : REAL;
rMotor_internal_temperature : REAL;
eMotor_overloaded           : E_LON_boolean_t;
eOil_level_low              : E_LON_boolean_t;
ePhase_imbalance_detected   : E_LON_boolean_t;
rCurrent_usage              : REAL;
rPower_usage                : REAL;
eTemperature_control        : E_LON_unit_temp_t;
eElectromagnetic_brake_active : E_LON_boolean_t;
eFriction_brake_active      : E_LON_boolean_t;
eGas_brake_active           : E_LON_boolean_t;
END_STRUCT
END_TYPE

```

rRotational_speed: Min: 0 / Max: 6553.5 / Rotational speed.

rBody_temperature: Min: -274 / Max: 6279.5 / Body temperature.

rMotor_external_temperature: Min: -274 / Max: 6279.5 / Motor external temp.

rMotor_internal_temperature: Min: -274 / Max: 6279.5 / Motor internal temp.

eMotor_overloaded: Motor overloaded (boolean) (see [E_LON_boolean_t](#) [► 587]).

eOil_level_low: Oil level low (boolean) (see [E_LON_boolean_t](#) [► 587]).

ePhase_imbalance_detected: Phase imbalance (boolean) (see [E_LON_boolean_t](#) [► 587]).

rCurrent_usage: Min: -3276.8 / Max: 3276.7 / Current usage.

rPower_usage: Min: 0 / Max: 6553.5 / Power usage.

eTemperature_control: Pump body temp control status (temperature control status names) (see [E_LON_unit_temp_t](#) [► 629]).

eElectromagnetic_brake_active: Electromagnetic brake active (boolean) (see [E_LON_boolean_t](#) [► 587]).

eFriction_brake_active: Friction brake active (boolean) (see [E_LON_boolean_t](#) [► 587]).

eGas_brake_active: Gas brake active (boolean) (see [E_LON_boolean_t](#) [► 587]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.54 ST_LON_SNVTPumpset_mn

Used by: SNVT_pumpset_mn

```

TYPE ST_LON_SNVTPumpset_mn :
STRUCT
  eMain_pump           : E_LON_motor_state_t;
  eBooster_pump        : E_LON_motor_state_t;
  ePriority_level       : E_LON_Priority_level_t;
  eProcess_ready       : E_LON_boolean_t;
  eEmergency_stop_activated : E_LON_boolean_t;
  eMain_pump_drive_enabled : E_LON_boolean_t;
  eBooster_pump_drive_enabled : E_LON_boolean_t;
  eMaintenance_required : E_LON_boolean_t;
END_STRUCT
END_TYPE

```

eMain_pump: Main pump state (motor state names) (see [E_LON_motor_state_t](#) [► 609]).

eBooster_pump: Booster pump state (motor state names) (see [E_LON_motor_state_t](#) [► 609]).

ePriority_level: Priority level (priority level names) (see [E_LON_Priority_level_t](#) [► 612]).

eProcess_ready: Process ready (boolean) (see [E_LON_boolean_t](#) [► 587]).

eEmergency_stop_activated: Emergency stop (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eMain_pump_drive_enabled: Main pump enabled (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eBooster_pump_drive_enabled: Booster pump enabled (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eMaintenance_required: Maintenance required (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.55 ST_LON_SNVT_pumpset_sn

Used by: SNVT_pumpset_sn

```

TYPE ST_LON_SNVT_pumpset_sn :
STRUCT
  uiTotal_dilution_flow      : UINT;
  rExhaust_temperature       : REAL;
  rExhaust_pressure          : REAL;
  rShaft_seal_purge_pressure : REAL;
  rInlet_vacuum              : REAL;
  rSupply_voltage            : REAL;
  uiCoolant_flow             : UINT;
  eCoolant_flow_low          : E_LON_boolean_t;
  eDilution_active          : E_LON_boolean_t;
  eBallast_dilution_active   : E_LON_boolean_t;
  eInlet_purge_dilution_active : E_LON_boolean_t;
  eExhaust_dilution_active   : E_LON_boolean_t;
  eDilution_flow_Out_of_range : E_LON_boolean_t;
  ePower_supply_on           : E_LON_boolean_t;
END_STRUCT
END_TYPE

```

uiTotal_dilution_flow: Min: 0 / Max: 65535 / Dilution gas flow.

rExhaust_temperature: Min: 274 / Max: 6279.5 / Exhaust line external temperature.

rExhaust_pressure: Min: -3276.8 / Max: 3276.7 / Exhaust line pressure.

rShaft_seal_purge_pressure: Min: -3276.8 / Max: 3276.7 / Shaft seal purge pressure.

rInlet_vacuum: Min: -3.40E+38 / Max: 3.40E+38 / Process gas inlet pressure.

rSupply_voltage: Min: -3276.8 / Max: 3276.7 / Pumpset power supply voltage.

uiCoolant_flow: Min: 0 / Max: 65535 / Total coolant flow.

eCoolant_flow_low: Coolant flow too low (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eDilution_active: Coolant flow too low (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eBallast_dilution_active: Dilution gas being used as ballast (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eInlet_purge_dilution_active: Dilution gas being used to purge process gas (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eExhaust_dilution_active: Dilution gas being used to dilute exhaust (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

eDilution_flow_Out_of_range: Dilution gas flow outside normal range (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

ePower_supply_on: Dilution gas flow outside normal range (boolean) (see [E_LON_boolean_t \[► 587\]](#)).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.56 ST_LON_SNVT_rac_ctrl

Used by: SNVT_rac_ctrl

```

TYPE ST_LON_SNVT_rac_ctrl :
STRUCT
  byAudio_line : BYTE;
  bDuplex_full : BOOL;
  bDest_p2p    : BOOL;
  byReserved   : BYTE;
  eAudio_type  : E_LON_rail_audio_type_t;
  stAddr_init  : ST_LON_addr_init;
  stAddr_talk  : ST_LON_addr_talk;
  stAddr_dest  : ST_LON_addr_dest;
END_STRUCT
END_TYPE

```

byAudio_line: Min: 0 / Max: 7

bDuplex_full:

bDest_p2p:

byReserved:

eAudio_type: (see [E_LON_rail_audio_type_t](#) [► 615]).

stAddr_init: (see [ST_LON_addr_init](#) [► 658]).

stAddr_talk: (see [ST_LON_addr_talk](#) [► 659]).

stAddr_dest: (see [ST_LON_addr_dest](#) [► 658]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.57 ST_LON_SNVT_rac_req

Used by: SNVT_rac_req

```

TYPE ST_LON_SNVT_rac_req :
STRUCT
  bDest_def    : BOOL;
  bDest_p2p    : BOOL;
  byReserved   : BYTE;
  eAudio_type  : E_LON_rail_audio_type_t;
  stAddr_init  : ST_LON_addr_init;
  stAddr_dest  : ST_LON_addr_dest;
END_STRUCT
END_TYPE

```

bDest_def:

bDest_p2p:

byReserved:

eAudio_type: (see [E_LON_rail_audio_type_t](#) [► 615]).

stAddr_init: (see [ST_LON_addr_init](#) [► 658]).

stAddr_dest: (see [ST_LON_addr_dest](#) [► 658]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.58 ST_LON_SNVT_reg_val

Used by: SNVT_rac_val

```

TYPE ST_LON_SNVT_reg_val :
STRUCT
  diRaw      : DINT;
  eUnit      : E_LON_reg_val_unit_t;
  byNr_decimals : BYTE;
END_STRUCT
END_TYPE

```

diRaw: Raw value.

eUnit: Unit code (defines unit of measure) (see [E_LON_reg_val_unit_t](#) [► 616]).

byNr_decimals: Number of decimals (digits to right of decimal point).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.59 ST_LON_SNVT_reg_val_ts

Used by: SNVT_rac_val_ts

```

TYPE ST_LON_SNVT_reg_val_ts :
STRUCT
  diRaw      : DINT;
  eUnit      : E_LON_reg_val_unit_t;
  byNr_decimals : BYTE;
  byStatus    : BYTE;
  bReg_state  : BOOL;
  uiYear      : UINT;
  uiMonth     : UINT;
  uiDay       : UINT;
  uiHour      : UINT;
  uiMinute    : UINT;
  uiSecond    : UINT;
END_STRUCT
END_TYPE

```

diRaw: Min: -2147483648 / Max: 2147483647 / Raw value.

eUnit: Unit code (unit names) (see [E_LON_reg_val_unit_t](#) [► 616]).

byNr_decimals: Min: 0 / Max: 7 / Number of decimals (digits to right of decimal point).

byStatus: Min: 0 / Max: 15 / Status (status or error during measuring period).

bReg_state: Activation state (activation state of register).

uiYear: Min: -1 / Max: 3000 / Year (years). Zero (0) means year not specified. Minus one (-1) represents NULL date.

uiMonth: Min: 0 / Max: 12 / Month (months). Zero (0) means month not specified.

uiDay: Min: 0 / Max: 31 / Day (days). Zero (0) means day not specified.

uiHour: Min: 0 / Max: 23 / Hour (hours). This field uses a 24-hour value.

uiMinute: Min: 0 / Max: 59 / Minute (minutes).

uiSecond: Min: 0 / Max: 59 / Second (seconds).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.60 ST_LON_SNVt_sbld_state

Used by: SNVT_sbld_state

```

TYPE ST_LON_SNVt_sbld_state :
STRUCT
  stPos      : ST_LON_SNVt_setting;
  eCmd_source : E_LON_sbld_cmd_source_t;
  eError_code : E_LON_sbld_error_t;
END_STRUCT
END_TYPE

```

stPos: (see [ST_LON_SNVt_setting](#) [► 695]).

eCmd_source: (see [E_LON_sbld_cmd_source_t](#) [► 618]).

eError_code: (see [E_LON_sbld_error_t](#) [► 619]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.61 ST_LON_SNVt_scene

Used by: SNVT_scene

```

TYPE ST_LON_SNVt_scene :
STRUCT
  eFunction      : E_LON_Scene_t;
  byScene_number : BYTE;
END_STRUCT
END_TYPE

```

eFunction: Scene control function (scene control function names) (see [E_LON_Scene_t](#) [► 621]).

byScene_number: Min: 0 / Max: 255 / Scene number.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.62 ST_LON_SNVt_scene_cfg

Used by: SNVT_scene_cfg

```

TYPE ST_LON_SNVt_scene_cfg :
STRUCT
  eFunction      : E_LON_Scene_config_t;
  byScene_number : BYTE;
  rSetting       : REAL;
  rRotation      : REAL;
  rFade_time     : REAL;
  rDelay_time    : REAL;
  scene_priority : BYTE;
END_STRUCT
END_TYPE

```

eFunction: Scene configuration function (scene configuration function names) (see [E_LON_Scene_config_t](#) [► 620]).

byScene_number: Min: 0 / Max: 255 / Scene number.

rSetting: Min: 0 / Max: 100.0 Invalid: 255 / Scene setting level (% of full level).

rRotation: Min: -359,98 / Max: 360,00 / Scene rotation angle (degrees).

rFade_time: Min: 0 / Max: 6553.5 / Scene fade time (seconds).

rDelay_time: Min: 0 / Max: 6553.5 / Scene delay time (seconds).

scene_priority: Min: 0 / Max: 255 / scene_priority

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.63 ST_LON_SNVt_setting

Used by: SNVT_setting

```

TYPE ST_LON_SNVt_setting :
STRUCT
  eFunction : E_LON_setting_t;
  rSetting  : REAL;
  rRotation : REAL;
END_STRUCT
END_TYPE

```

eFunction: Setting control function (setting control function names) (see [E_LON_setting_t](#) [► 624]).

rSetting: Min: 0 / Max: 100 / Scene setting level (% of full level).

rRotation: Min: -359.98 / Max: 360.00 / Rotation angle (degrees).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.64 ST_LON_SNVt_str_int

Used by: SNVT_str_int

```

TYPE ST_LON_SNVt_str_int :
STRUCT
  byChar_set : BYTE;
  arrWide_char : ARRAY[0..14] OF UINT;
END_STRUCT
END_TYPE

```

byChar_set: Min: 0 / Max: 255 / Locale code (code value).

arrWide_char: Min: 0 / Max: 65535 / Wide character string (array of 15 wide characters).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.65 ST_LON_SNVt_switch

Used by: SNVT_switch

```

TYPE ST_LON_SNVt_switch :
STRUCT
  rValue : REAL;

```



```

    siState : SINT;
END_STRUCT
END_TYPE

```

rValue: Min: 0 / Max: 100 / Value (% of full level).

siState: Min: -1 / Max: 1 / State (state code). This field can either be -1 (NULL), 0 (OFF), or 1 (ON).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.66 ST_LON_SNVT_switch_2

Used by: SNVT_switch_2

```

TYPE ST_LON_SNVT_switch_2 :
STRUCT
    eState          : E_LON_switch_state_t;
    stSetting       : ST_LON_setting;
    byScene_number  : BYTE;
END_STRUCT
END_TYPE

```

eState: Switch state (see [E_LON_switch_state_t](#) [► 625]). Switch state; maybe a state of the switch or other switch properties such as scene, occupancy state, and level multiplier

stSetting: Switch setting. Sets or reports the level, change, or angle for a switch (see [ST_LON_setting](#) [► 661]).

byScene_number: Min: 1 / Max: 255 / Scene number. Scene number that is applied based on the function specified in the state field.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.67 ST_LON_SNVT_temp_setpt

Used by: SNVT_temp_setpt

```

TYPE ST_LON_SNVT_temp_setpt :
STRUCT
    rOccupied_cool    : REAL;
    rStandby_cool     : REAL;
    rUnoccupied_cool  : REAL;
    rOccupied_heat    : REAL;
    rStandby_heat     : REAL;
    rUnoccupied_heat  : REAL;
END_STRUCT
END_TYPE

```

rOccupied_cool: Min: -273,17 / Max: 237,67 / Occupied cooling setpoint (degrees Celsius).

rStandby_cool: Min: -273,17 / Max: 237,67 / Standby cooling setpoint (degrees Celsius).

rUnoccupied_cool: Min: -273,17 / Max: 237,67 / Unoccupied cooling setpoint (degrees Celsius).

rOccupied_heat: Min: -273,17 / Max: 237,67 / Occupied heating setpoint (degrees Celsius).

rStandby_heat: Min: -273,17 / Max: 237,67 / Standby heating setpoint (degrees Celsius).

rUnoccupied_heat: Min: -273,17 / Max: 237,67 / Unoccupied heating setpoint (degrees Celsius).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.68 ST_LON_SNVTime_zone

Used by: SNVT_time_zone

```

TYPE ST_LON_SNVTime_zone :
STRUCT
  diSecond_time_offset : DINT;
  eType_of_description : E_LON_calendar_type_t;
  byHour_of_start_DST : BYTE;
  byMinute_of_start_DST : BYTE;
  bySecond_of_start_DST : BYTE;
  stStart_DST : ST_LON_start_DST;
  byHour_of_end_DST : BYTE;
  byMinute_of_end_DST : BYTE;
  bySecond_of_end_DST : BYTE;
  stEnd_DST : ST_LON_end_DST;
END_STRUCT
END_TYPE

```

diSecond_time_offset: Min: -86400 / Max: 86400 / Offset from GMT (seconds). West direction is negative offset .

eType_of_description: Calendar type (calendar type names) (see [E_LON_calendar_type_t](#) [► 587]).

byHour_of_start_DST: Min: 0 / Max: 23 / DST start hour (hours).

byMinute_of_start_DST: Min: 0 / Max: 59 / DST start minute (minutes).

bySecond_of_start_DST: Min: 0 / Max: 59 / DST start second (seconds).

stStart_DST: DST start day (day descriptor). Daylight savings time start day (see [ST_LON_start_DST](#) [► 663]).

byHour_of_end_DST: Min: 0 / Max: 23 / DST end hour (hours).

byMinute_of_end_DST: Min: 0 / Max: 59 / DST end minute (minutes).

bySecond_of_end_DST: Min: 0 / Max: 59 / DST end second (seconds).

stEnd_DST: DST end day (day descriptor). Daylight savings time end day (see [ST_LON_end_DST](#) [► 662]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.69 ST_LON_SNVTime_event

Used by: SNVT_tod_event

```

TYPE ST_LON_SNVTime_event :
STRUCT
  eCurrent_state : E_LON_occup_t;
  eNext_state : E_LON_occup_t;
  uiTime_to_next_state : UINT;
END_STRUCT
END_TYPE

```

eCurrent_state: Occupancy, current (occupancy code names) (see [E_LON_occup_t](#) [► 611]).

eNext_state: Occupancy, next (occupancy code names) (see [E_LON_occup_t](#) [► 611]).

uiTime_to_next_state: Min: 0 / Max: 65535 / Time to next state (minutes).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.70 ST_LON_SNVT_trans_table

Used by: SNVT_trans_table

```

TYPE ST_LON_SNVT_trans_table :
STRUCT
  arrPoint          : ARRAY[0..6] OF REAL;
  byInterp_pts_0_to_1 : BYTE;
  byInterp_pts_1_to_2 : BYTE;
  byInterp_pts_2_to_3 : BYTE;
  byInterp_pts_3_to_4 : BYTE;
  byInterp_pts_4_to_5 : BYTE;
  byInterp_pts_5_to_6 : BYTE;
  byInterp_pts_6_to_0 : BYTE;
END_STRUCT
END_TYPE

```

arrPoint: Points (array of 7 points).**byInterp_pts_0_to_1:** Min: 0 / Max: 1 / Interpolation for point 0 to point 1 (interpolation method code).**byInterp_pts_1_to_2:** Min: 0 / Max: 1 / Interpolation for point 1 to point 2 (interpolation method code).**byInterp_pts_2_to_3:** Min: 0 / Max: 1 / Interpolation for point 2 to point 3 (interpolation method code).**byInterp_pts_3_to_4:** Min: 0 / Max: 1 / Interpolation for point 3 to point 4 (interpolation method code).**byInterp_pts_4_to_5:** Min: 0 / Max: 1 / Interpolation for point 4 to point 5 (interpolation method code).**byInterp_pts_5_to_6:** Min: 0 / Max: 1 / Interpolation for point 5 to point 6 (interpolation method code).**byInterp_pts_6_to_0:** Min: 0 / Max: 1 / Interpolation for point 6 to point 0 (interpolation method code). This field is used when multiple interpolation tables are linked.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.71 ST_LON_SNVT_zerospans

Used by: SNVT_zerospans

```

TYPE ST_LON_SNVT_zerospans :
STRUCT
  rZero : REAL;
  rSpan : REAL;
END_STRUCT
END_TYPE

```

rZero: Min: -163.840 / Max: 163.835 / Zero-term (16-bit signed value).**rSpan:** Min: 0.0 / Max: 32.7675 / Span-factor (16-bit unsigned value).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.2.2.72 str_AddressTable

Address table

```

TYPE str_AddressTable :
STRUCT
  bType      : BOOL;
  Node       : USINT;
  bDomain    : BOOL;
  Member     : USINT;
  RPT_Timer  : USINT;
  Retry      : USINT;
  RCV_Timer  : USINT;
  Tx_Timer   : USINT;
  Group      : BYTE;
END_STRUCT
END_TYPE

```

bType: Type**Node:** Node**bDomain:** Domain**Member:** Member**RPT_Timer:** RPT_Timer**Retry:** Retry**RCV_Timer:** RCV_Timer**Tx_Timer:** Tx_Timer**Group:** Group**Requirements**

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_LON from 3.3.4.0

4.3 Resources

4.3.1 Globale_Variablen_LON

Default values for all send function blocks

```

VAR_GLOBAL CONSTANT
  tMinSendTimeDefault := t#1000ms,
  tMaxSendTimeDefault := t#0s,
  bAutoDefault        := FALSE,
  bSendInitDefault    := FALSE,
END_VAR

```

tMinSendTimeDefault: Default value for all send function blocks Applies to [automatic mode \[► 707\]](#). The modified value is sent once after this time has elapsed.

tMaxSendTimeDefault: Default value for all send function blocks Applies to [automatic mode \[► 707\]](#). The value is sent once this time has elapsed, irrespective of any change in value.

bAutoDefault: Default value for all send function blocks Switching on [automatic mode \[► 707\]](#).

bSendInitDefault: Default value for all send function blocks After switching on the data is sent once.

4.4 Integration into TwinCAT

4.4.1 KL6401 with CX5120

This sample describes how to write a simple PLC program for LON in TwinCAT and how to link it with the hardware. The task is to change the state of a switching output with a button.

Sample: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/6164908043.zip



The TwinCAT project is available for download as *.zip file. This must first be unpacked locally so that the archive (*.tnzip file) is available for import into the TwinCAT project.

Hardware

Setting up the components

- 1x CX5120 Embedded PC
- 1x KL1104 four-channel digital input terminal (for the Set/Reset function)
- 1x KL6401 LON terminal
- 1x KL9010 end terminal

Set up the hardware and the LON components as described in the respective documents.

This example assumes that a Set button was linked to the first KL1104 input and a Reset button to the second.

Software

Creation of the PLC program

Create a new “TwinCAT XAE project” and a “Standard PLC project”.

Add the library Tc2_LON in the PLC project under “References”.

Generate a global variable list with the name GVL_LON and create the following variables:

```
VAR_GLOBAL
    bSet          AT %I* : BOOL;
    bReset        AT %I* : BOOL;
    stParameter_IN AT %I* : ST_LON_Parameter_IN_36B;
    stParameter_OUT AT %Q* : ST_LON_Parameter_OUT_36B;
    stLON_Com      : ST_LON_Communication;
END_VAR
```

bSet: Input variable for the Set button.

bReset: Input variable for the Reset button.

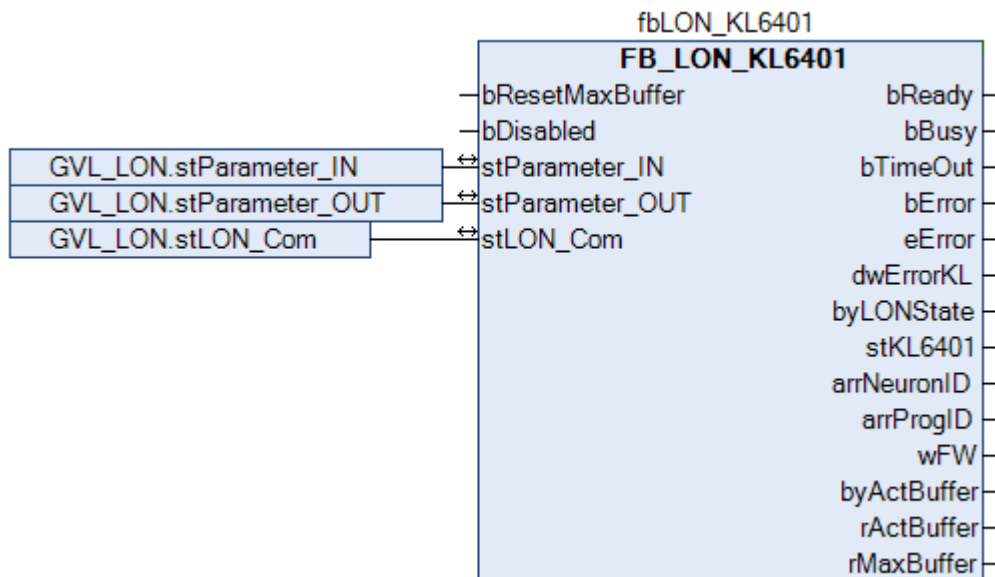
stParameter_IN: Input structure for the LON terminal (see [ST_LON_Parameter_IN_36B](#) [► 663]).

stParameter_OUT: Output structures for the LON terminal (see [ST_LON_Parameter_OUT_36B](#) [► 664]).

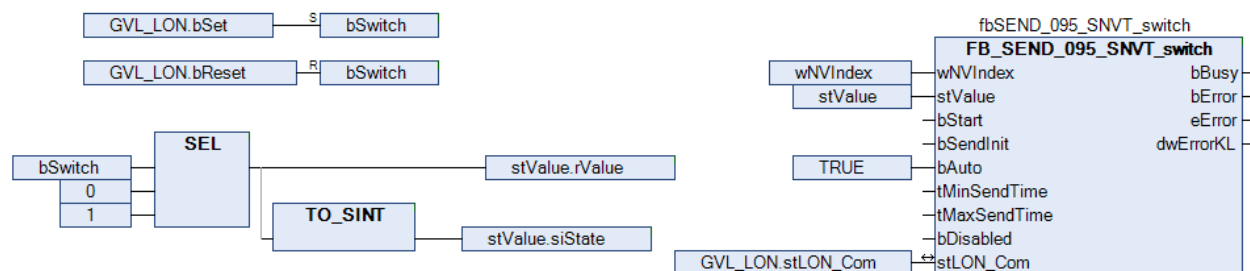
stLON_Com: Structure for the internal communication with LON (see [ST_LON_Communication](#) [► 665]).

All LON function blocks must be called in the same task.

Create a LON program (CFC) in which the function blocks [FB_LON_KL6401](#) [► 27] and [FB_SEND_095_SNVT_switch](#) [► 385] are called up. At the communication block link the variables *stParameter_IN*, *stParameter_Out* and *stLON_Com*.

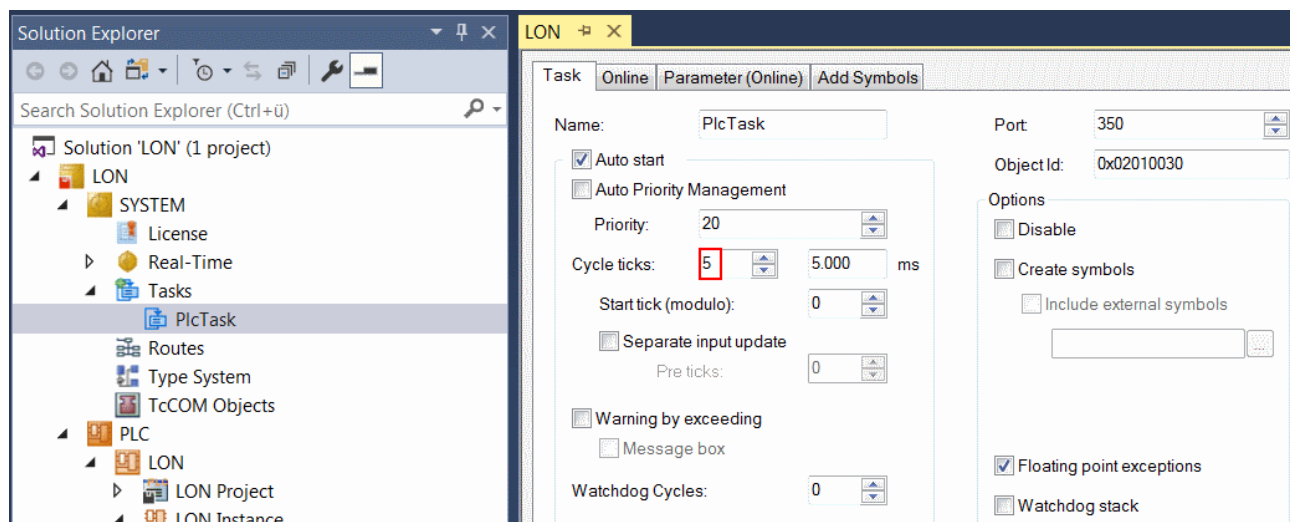


Link the local variable *bSwitch* with the global variables *bSet* and *bReset*, then with the selected input. Link the local variable *stValue* (see [ST_LON_SNVT_switch](#) [► 695]) with the selected output, then with the input *stValue* of the send block.



Go to the task configuration and give the task a lower interval time.

Further conditions can be found in the description of the function block [FB_LON_KL6401](#) [► 27].



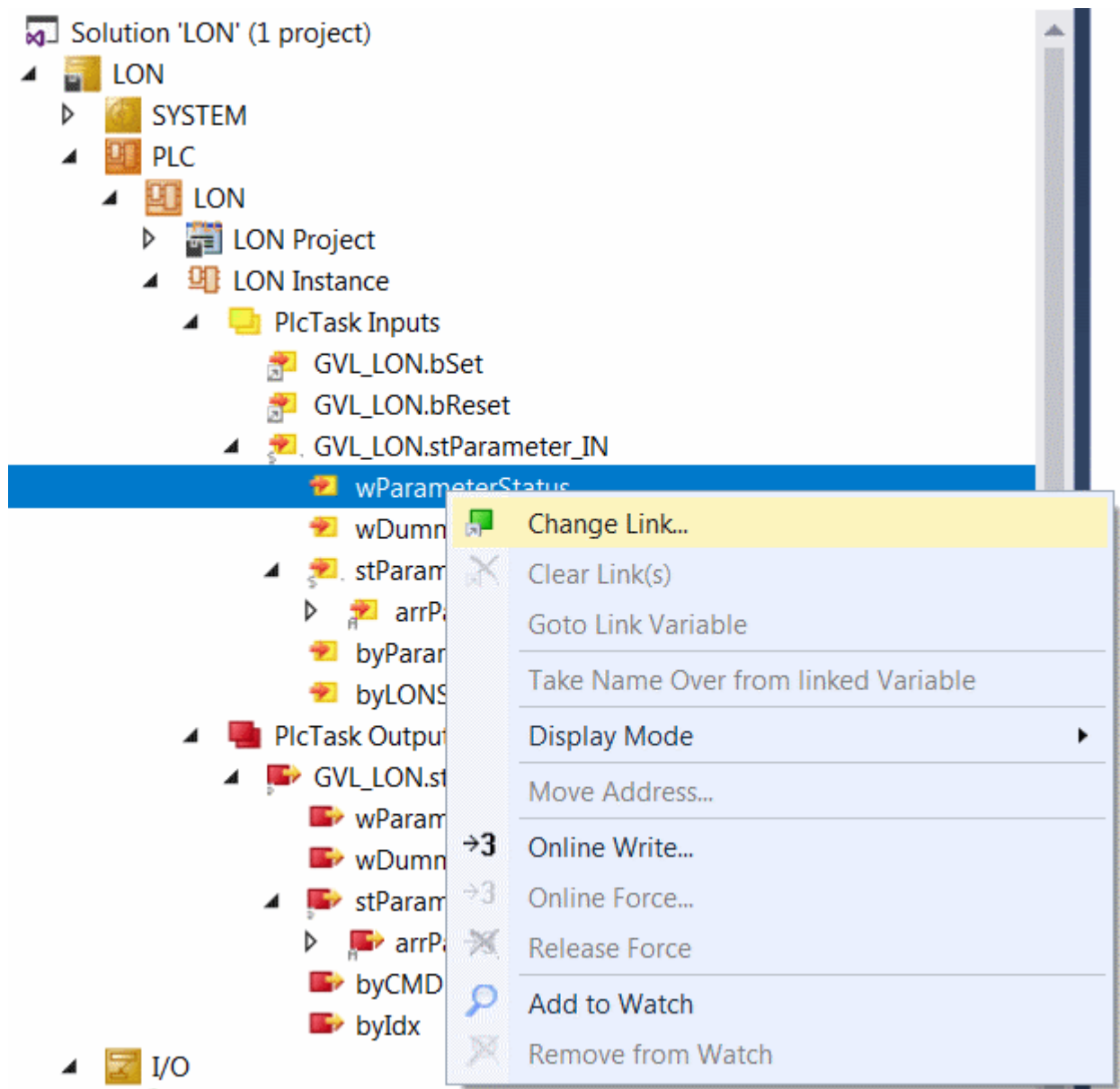
I/O configuration

Select the CX as target system and initiate a search for its hardware. In the project instance within the PLC section, you can see that the input and output variables are assigned to the input and output variables of the task.

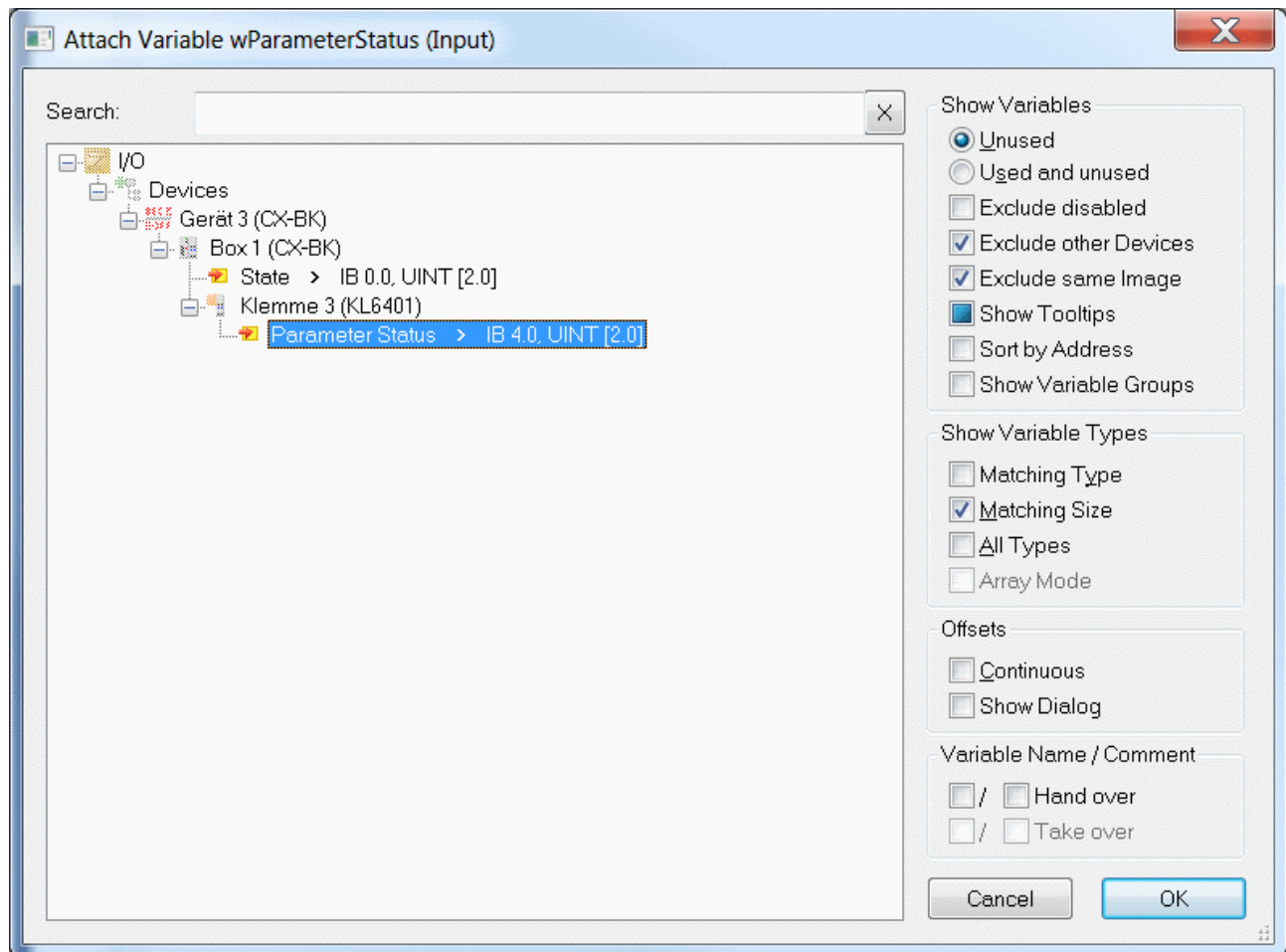
Now link the variables with the inputs and outputs of the Bus Terminals.

The linking of the LON variables is described in detail below.

Right-click the variable *wParameterStatus* of the input structure and select "Change link".

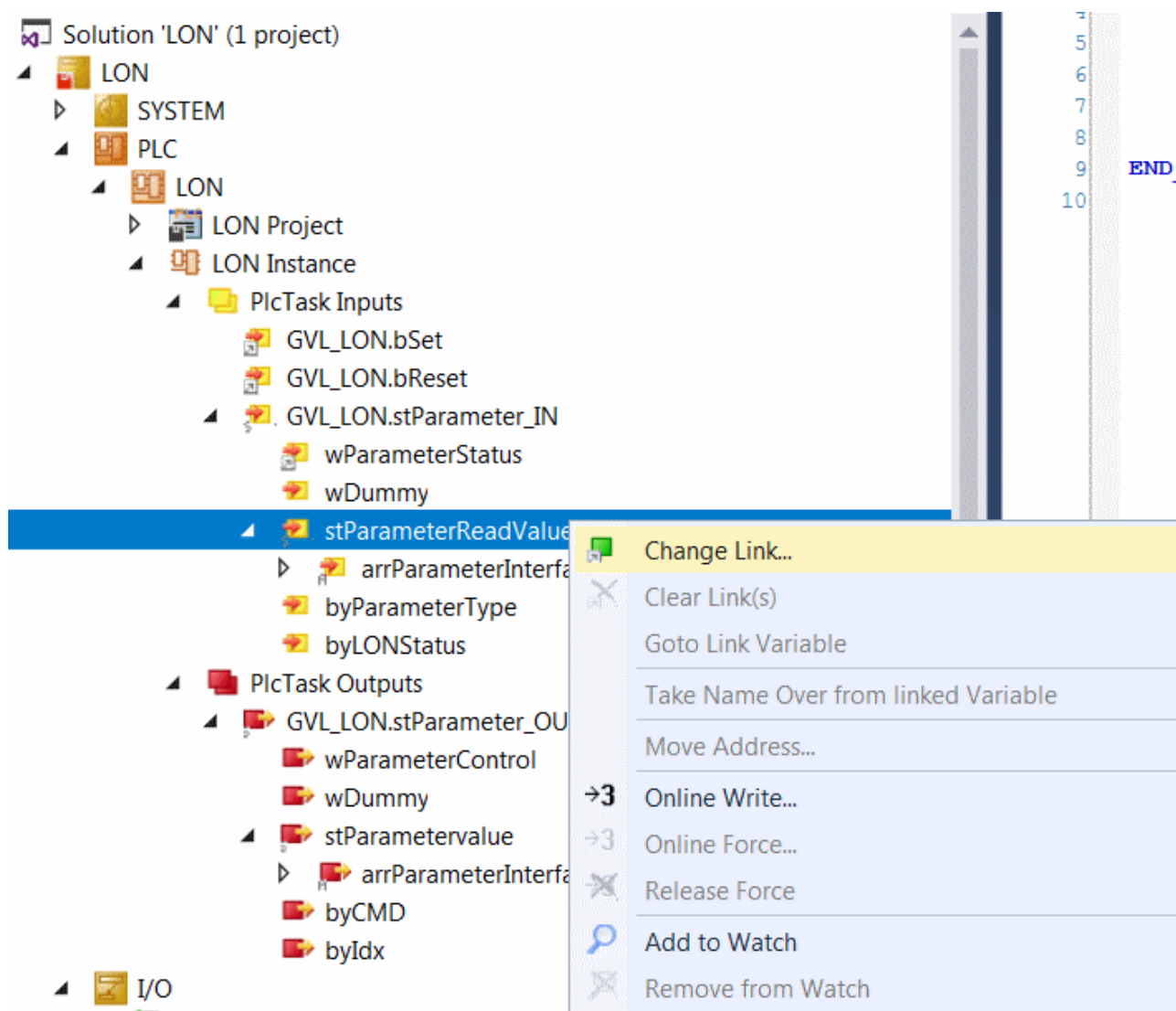


Select the terminal under "I/O Configuration", click "Parameter Status" and confirm with "OK".

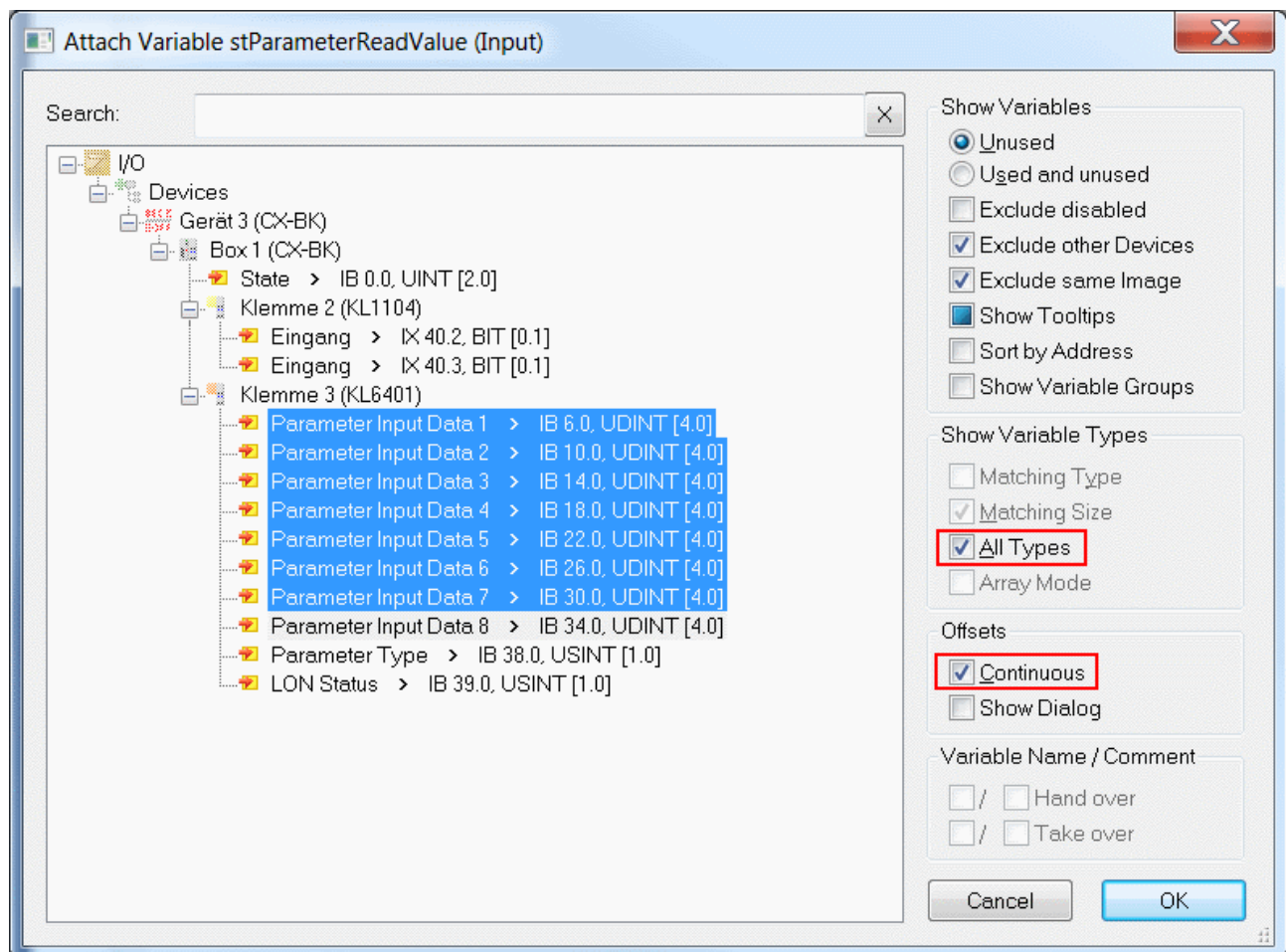


In the next step, right-click the structure *stParameterReadValue* within the input structure and select "Change Link".

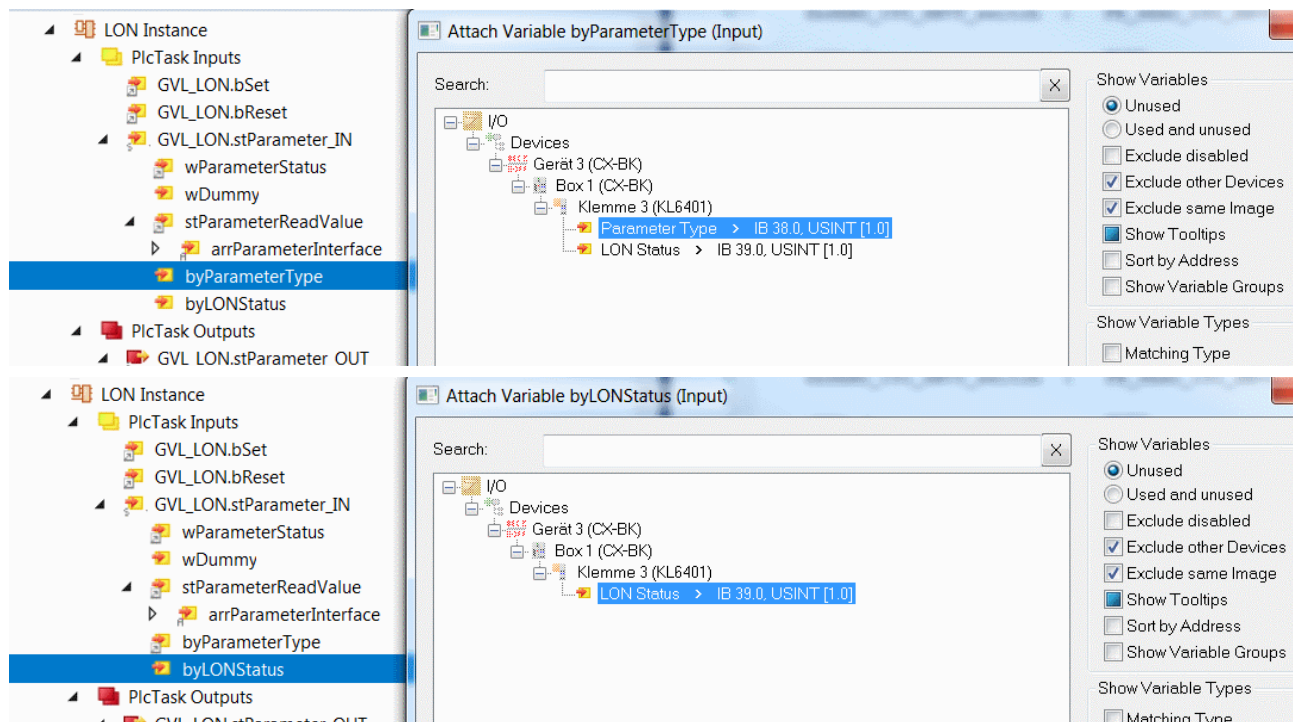
wDummy is not linked.



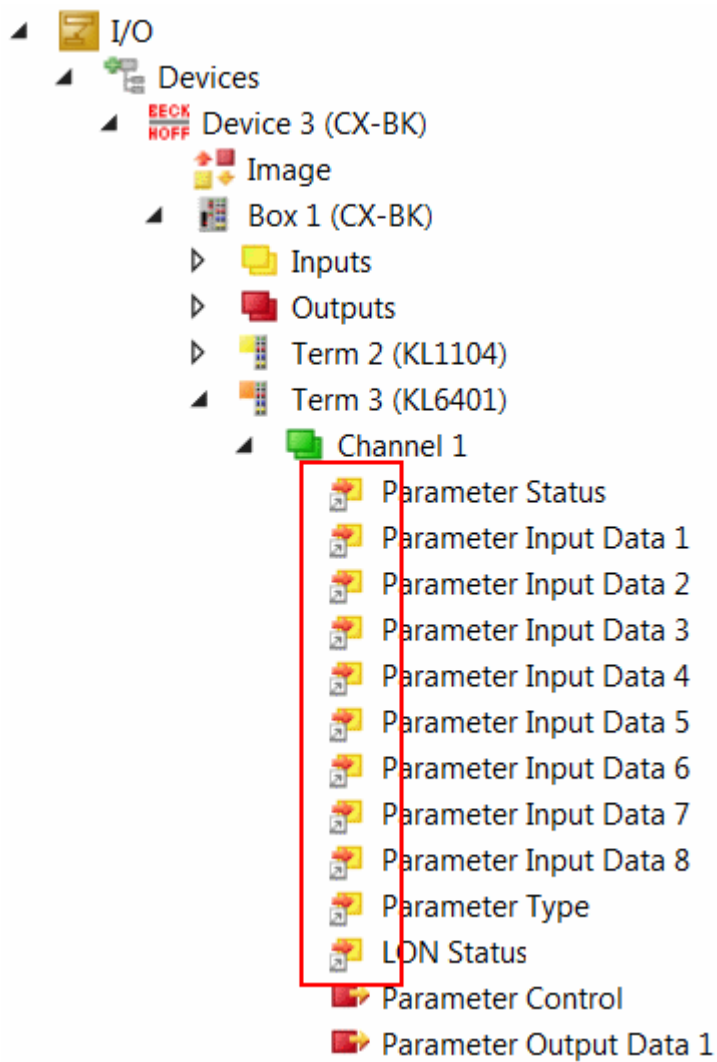
Select "All Types" and "Continuous", then select "Parameter Input Data 1" to "Parameter Input Data 8" with the left mouse button and the >SHIFT< key. Then click "OK".



Now also link the variables *byParameterType* and *byLONStatus*.



You can now check the connection. To this end, select the KL6401 in the "I/O Configuration" and open it. All terminal data should now show a small arrow. If that is the case, then proceed in exactly the same way with the outputs.



5 Appendix

5.1 Automatic send

Automatic sending is enabled with the input variable **bAuto**. The variable must be TRUE during the whole interval over which the block is to send independently.

The following three parameters (VAR_INPUT) can be used to influence automatic sending.

MaxSendTime : TIME;

This value enables transfers of values at regular intervals. The value is sent once the time has elapsed, irrespective of any change in value.

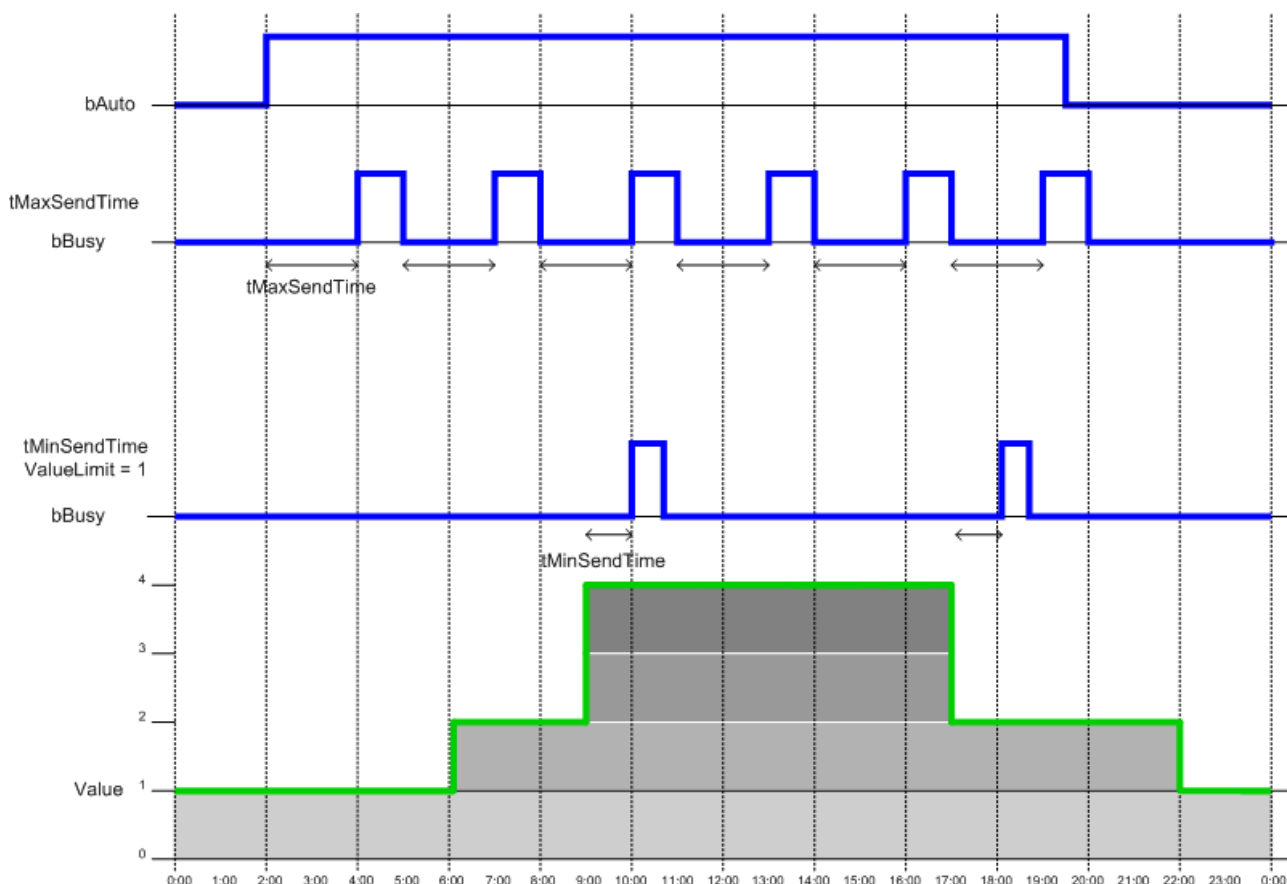
ValueLimit : This value can have the following formats: (r/lr/ui/i)**ValueLimit** : REAL / LREAL / UINT / INT.

The value is only sent if the absolute value of the change since the last transfer is greater than this parameter. If this value is 0, sending takes place after each change in value (even very small changes). E

Please note: The variable "ValueLimit" is not used for "Enums" and "Structures". In this case sending takes place after each change in value.

tMinSendTime : TIME;

The function block starts sending after **tMinSendTime** at the earliest. This parameter can be used to limit the number of telegrams in situations where the values change very quickly (to reduce the network load). If the value is t#0s, sending takes place after each change in value (see ValueLimit).



5.2 dwErrorKL

Return parameter dwErrorKL	FW	Meaning
0000 0000 _{hex}		No error

Return parameter dwErrorKL	FW	Meaning
0000 0001 _{hex}		Write access to a read parameter
0000 0004 _{hex}		Undefined parameter
0000 0005 _{hex}		Illegal value for parameter
0000 0007 _{hex}		Undefined slot
0000 0008 _{hex}		Error when reading the NV parameter
0000 0009 _{hex}		Checksum error when downloading the LON configuration
0000 0010 _{hex}	from FW5	OUTGOING_MSG_FAILED
0000 0011 _{hex}	from FW5	OUTGOING_MSG_LATE_ACK
0000 0012 _{hex}	from FW5	OUTGOING_MSG_MALFORMED
0000 0013 _{hex}	from FW5	NEURON_QUERY_FAILED
0000 0014 _{hex}	from FW5	NEURON_UPDATE_FAILED
0000 000A _{hex}		Fault with the upload of a LON configuration
0000 0Cxx _{hex}		An SNVT variable that is to be written has not arrived, xx corresponds to the SNVT index number
0000 0Exx _{hex}		NV index is not an output. The PLC attempts to write to an NV index that was not defined as an output with the KS2000 (nvo). xx corresponds to the SNVT index number
0000 0Fxx _{hex}		Confirmation of the LON telegram to be written has arrived too late (> 1500 ms), xx corresponds to the SNVT index number
0000 400x _{hex}	from FW5	NEURON_MGMT_ERROR. x corresponds to the API code

5.3 Samples

Sample	Description
https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/646126859.zip	TwinCAT 3 project (all SNVT in ST)
https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/646124555.zip	TwinCAT 3 project (all SNVT in FBD)
https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/646081419.zip	Terminal configuration with the KS2000

5.4 SNVT-variables (OFF)

https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/150431883.zip 

https://infosys.beckhoff.com/content/1033/tcplclib_tc2_lon/Resources/150434827.zip 

Implemented SNVT variables (KL6401_OFF)

Description	INPUT/OUTPUT	SNVT ID	Length	NV ID
nviSwitch00	INPUT	95	2	0
nviSwitch01	INPUT	95	2	1
nviSwitch02	INPUT	95	2	2
nviSwitch03	INPUT	95	2	3
nviSwitch04	INPUT	95	2	4
nviSwitch05	INPUT	95	2	5
nviSwitch06	INPUT	95	2	6

Description	INPUT/OUTPUT	SNVT ID	Length	NV ID
nviSwitch07	INPUT	95	2	7
nviSwitch08	INPUT	95	2	8
nviSwitch09	INPUT	95	2	9
nviSwitch10	INPUT	95	2	10
nviSwitch11	INPUT	95	2	11
nviSetting0	INPUT	117	4	12
nviSetting1	INPUT	117	4	13
nviSetting2	INPUT	117	4	14
nviSetting3	INPUT	117	4	15
nviTemp0	INPUT	105	2	16
nviTemp1	INPUT	105	2	17
nviTemp2	INPUT	105	2	18
nviTemp3	INPUT	105	2	19
nviTemp4	INPUT	105	2	20
nviHvacStatus0	INPUT	112	12	21
nviHvacStatus1	INPUT	112	12	22
nviHvacStatus2	INPUT	112	12	23
nviHvacStatus3	INPUT	112	12	24
nviHvacStatus4	INPUT	112	12	25
nvoSwitch00	OUTPUT	95	2	26
nvoSwitch01	OUTPUT	95	2	27
nvoSwitch02	OUTPUT	95	2	28
nvoSwitch03	OUTPUT	95	2	29
nvoSwitch04	OUTPUT	95	2	30
nvoSwitch05	OUTPUT	95	2	31
nvoSwitch06	OUTPUT	95	2	32
nvoSwitch07	OUTPUT	95	2	33
nvoSwitch08	OUTPUT	95	2	34
nvoSwitch09	OUTPUT	95	2	35
nvoSwitch10	OUTPUT	95	2	36
nvoSwitch11	OUTPUT	95	2	37
nvoSwitch12	OUTPUT	95	2	38
nvoSwitch13	OUTPUT	95	2	39
nvoSwitch14	OUTPUT	95	2	40
nvoSwitch15	OUTPUT	95	2	41
nvoSwitch16	OUTPUT	95	2	42
nvoSwitch17	OUTPUT	95	2	43
nvoSetting0	OUTPUT	117	4	44
nvoSetting1	OUTPUT	117	4	45
nvoSetting2	OUTPUT	117	4	46
nvoSetting3	OUTPUT	117	4	47
nvoLevP0	OUTPUT	81	2	48
nvoLevP1	OUTPUT	81	2	49
nvoLevP2	OUTPUT	81	2	50
nvoLevP3	OUTPUT	81	2	51
nvoLevP4	OUTPUT	81	2	52
nvoHvacMode0	OUTPUT	108	1	53
nvoHvacMode1	OUTPUT	108	1	54

Description	INPUT/OUTPUT	SNVT ID	Length	NV ID
nvoHvacMode2	OUTPUT	108	1	55
nvoHvacMode3	OUTPUT	108	1	56
nvoHvacMode4	OUTPUT	108	1	57

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