

BECKHOFF New Automation Technology

Manual | EN

TE1000

TwinCAT 3 | PLC Library: Tc2_DALI

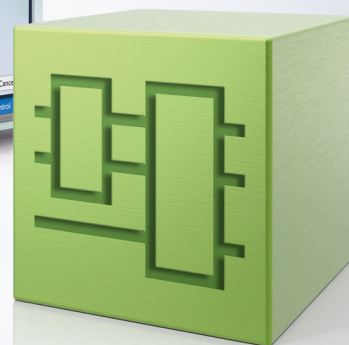
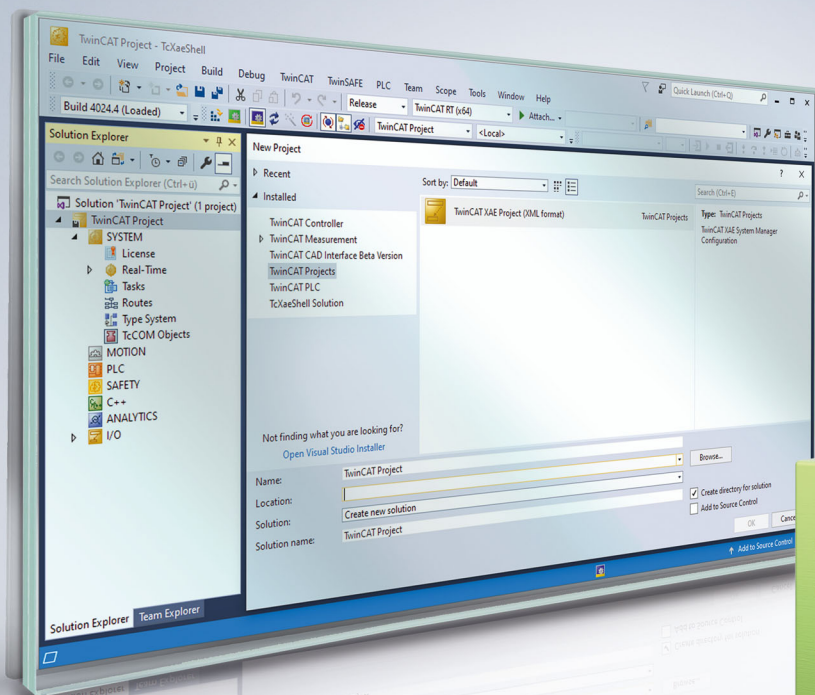


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1 Foreword

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



Update: Tc3_DALI library

The Tc2_DALI TwinCAT 3 PLC library is the predecessor to Tc3_DALI. We recommend using the Tc3_DALI library.

The Tc2_DALI library will no longer be updated in future. The Tc2_DALI library should not be used for new projects. All the functionalities of the Tc2_DALI library are also available in the new Tc3_DALI library.

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

- TwinCAT XAE
- PC and network knowledge
- Structure and properties of the Beckhoff Embedded PC and its Bus Terminal system
- Technology of DALI devices
- 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_DALI library is usable on all hardware platforms that support TwinCAT 3.1 or higher.

3 DALI

DALI (Digital Addressable Lighting Interface) is a definition for the standardization of digital interfaces between control gears (lamps) and control units (sensors). The standard (IEC 62386) allows the manufacturers of lighting components to implement complex lighting tasks easily and conveniently.

The KL6811 (DALI/DSI master) and KL6821 (2nd master) Bus Terminals are integrated into the Bus Terminal system as normal Bus Terminals and are therefore fieldbus-independent. The DALI data is forwarded to the DALI devices via the respective Bus Coupler. Bus controllers also offer a facility for decentralized execution of PLC programs in IEC61131-3.

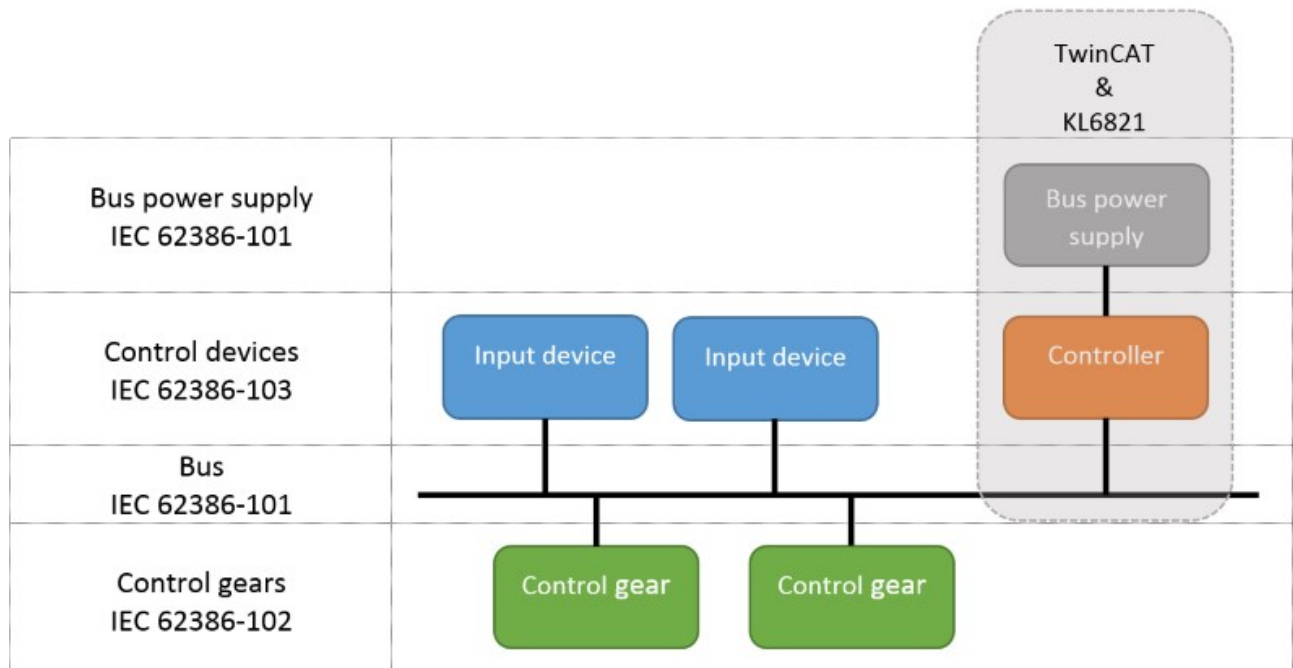
IEC 62386

DALI is specified in the IEC 62386 standard and offers advantages such as flexibility, simplicity, user friendliness and robustness. IEC 62386 has been revised several times and was extended considerably in November 2014 with the publication of the second revision. While in the first revision only control gears (lamps) were considered, from the second revision onwards control units (sensors) are also included. These are described in the respective section of IEC 62386:

IEC 62386-101	General system properties such as cabling, feed-in and telegram structure
IEC 62386-102	General properties of the control gears
	IEC 62386-201: Fluorescent lamps (device type 0) IEC 62386-202: Emergency lighting (device type 1) IEC 62386-203: Discharge lamps (device type 2) ...
IEC 62386-103	General properties of the control devices
	IEC 62386-301: Push buttons IEC 62386-303: Occupancy sensor IEC 62386-304: Brightness sensor ...

The IEC 62386-101, IEC 62386-102 and IEC 62386-103 standards describe general properties, while the IEC 62386-2xx and IEC 62386-3xx standards specify the individual device types.

IEC 62386-103 and IEC 62386-3xx were included in Revision 2 of the DALI standard.

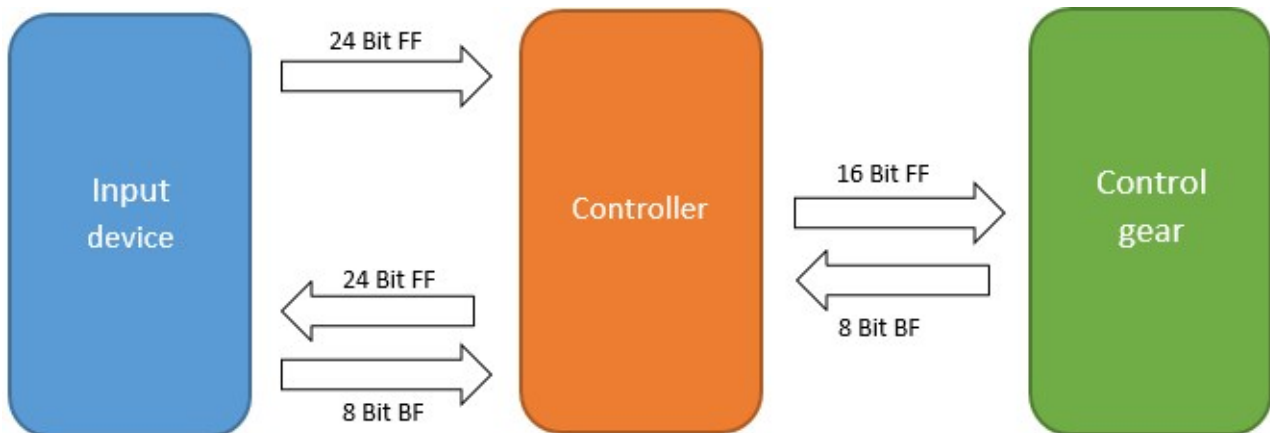


In each DALI line up to 64 control gears and up to 64 input devices can be connected. The KL6821 represents the DALI controller. One such device exists for each DALI line. Any number of DALI lines (KL6821) can be operated with a single TwinCAT controller.

Communication

With regard to the communication, a distinction is made between three telegram types:

- 16-bit query, configuration and control telegram.
- 24-bit query, configuration and control telegram.
- 24-bit event telegram.



BF: backward frame

FF: forward frame

16-bit telegrams

16-bit telegrams are always sent from a DALI controller to a DALI control gear. They are used for configuring the devices, querying parameters or sending control commands. For certain DALI commands the DALI control gear sends an 8-bit response. DALI control gears only send an 8-bit telegram when requested.

In the DALI library these commands are provided in the form of PLC function blocks with the prefix *FB_DALIV2*, e.g. *FB_DALIV2QueryActualLevel*.

24-bit telegrams

24-bit telegrams are always sent from a DALI controller to a DALI input device. They are used for configuring the devices, querying parameters or sending control commands. For certain DALI commands the DALI input device sends an 8-bit response.

In the DALI library these commands are provided in the form of PLC function blocks with the prefix *FB_DALIV2x*, e.g. *FB_DALIV2xQueryOperatingMode*.

24-bit events

DALI input devices are able to send events. They are always evaluated by the DALI controller and have a length of 24 bits.

Individual events can be filtered out with the function block *FB_DALIV2xGetEventData* [► 73] for further processing.

Note

Further information on DALI can be found on the website of the DALI Activity Group (<http://www.dali-ag.org>) or the Digital Illumination Interface Alliance (<https://www.digitalilluminationinterface.org>) and in the IEC 62386 standard.

The KL6811 only supports the first revision of the DALI standard. It is not possible to operate control units (sensors) with the KL6811. The KL6821 is backward compatible with the KL6811, but it does not support DSI.

4 Programming

Further libraries required

- Tc2_Standard
- Tc2_System
- Tc2_Uilities
- Tc3_Module



Memory usage

Integrating the library already consumes PLC memory. Depending on the application program, therefore, the remaining memory may not be sufficient.

4.1 POU's

4.1.1 High-Level commands

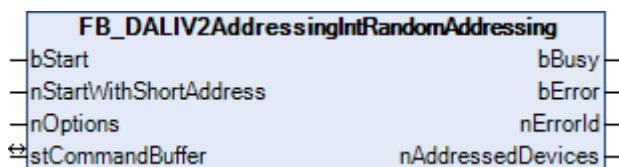
4.1.1.1 Part 102 (control gears)

4.1.1.1.1 Addressing

Function blocks

Name	Description
FB_DALIV2AddressingIntRandomAddressing [► 11]	Addresses the control gears according to the random principle. The Bus Terminal's internal addressing function is used here.
FB_DALIV2AddressingPhysicalSelection [► 13]	Addresses the control gears according to the 'physical selection' addressing method.
FB_DALIV2AddressingRandomAddressing [► 15]	Addresses the control gears according to the random principle.
FB_DALIV2ChangeAddressList [► 17]	The short addresses of several control gears can be changed using this function block.
FB_DALIV2SwapShortAddress [► 19]	Swap the short addresses of two control gears.
FB_DALIV2SwapShortAddressList [► 20]	Swaps the short addresses of several control gears.

4.1.1.1.1.1 FB_DALIV2AddressingIntRandomAddressing



The function block FB_DALIV2AddressingIntRandomAddressing addresses the control gears at random. The user has no influence over which short address is assigned to which control gear. Short addresses are allocated in ascending order.

Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. Depending on the selected options (parameter *nOptions*) the group membership and scenes are subsequently deleted. The terminal now addresses all control gears independently. Once all control gears have been addressed, the *bBusy* output switches back to FALSE. The *nAddressedDevices* output variable supplies information about how many control gears have received a short address. Processing this function block can take several minutes, depending on how many control gears are attached. Since the addressing is

performed directly by the terminal, this method is somewhat faster than the function block.

FB_DALIV2AddressingRandomAddressing. [► 15] However, this function block does not supply any feedback during addressing. In addition to that, addressing cannot be terminated prematurely.



This function block can only be executed if the terminal has the firmware version 2A or newer.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nStartWithShortAddress : BYTE := 0;
    nOptions        : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
END_VAR
```

Name	Type	Description
bStart	BOOL	A positive edge at this input activates the function block, thereby starting the addressing sequence.
nStartWithShortAddress	BYTE	Short address allocated to the first control gear (0 ... 63).
nOptions	DWORD	Options for addressing the control gears (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_COMPLETE_NEW_INSTALLATION	All control gears are re-addressed, including control gears that already have a short address.
DALIV2_OPTION_DELETE_ALL_GROUP_ASSIGNMENTS	Before addressing, the group assignments (see variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_DELETE_ALL_SCENE_ASSIGNMENTS	Before addressing, the scenes (see variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_OPTICAL_FEEDBACK	Before addressing, all control gears are set to <u>MIN LEVEL</u> [► 88]. Newly addressed control gears are assigned <u>MAX LEVEL</u> [► 88] brightness after assignment of the short address.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nAddressedDevices : BYTE;
END_VAR
```

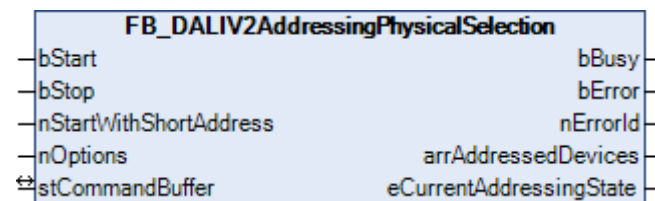
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nAddressedDevices	BYTE	If addressing has been completed (<i>bBusy</i> is FALSE), then the number of addressed control gears is shown at this output.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2 FB_DALIV2AddressingPhysicalSelection



The function block FB_DALIV2AddressingPhysicalSelection addresses the control gears through 'physical selection' based on the addressing technique. This means that the individual control gears are selected (and therefore addressed) by removing the lamps. Short addresses are assigned (ascending) in the same order in which the lamps are removed.

Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. Depending on the selected options (parameter *nOptions*) the group membership and scenes are subsequently deleted. The *eCurrentAddressingState* output specifies the next required user operation. It determines whether for the next control gear the lamp should be removed or reinserted. The *arrAddressedDevices* output variable provides information about which control gears have already been assigned a short address. Once all control gears have been addressed, the addressing procedure is completed through a positive edge at input *bStop*, and the output *bBusy* switches back to FALSE.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    bStop           : BOOL;
    nStartWithShortAddress : BYTE := 0;
    nOptions         : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
END_VAR

```

Name	Type	Description
bStart	BOOL	A positive edge at this input activates the function block, thereby starting the addressing sequence.
bStop	BOOL	A positive edge at this input disables the function block, thereby stopping the addressing sequence.
nStartWithShortAddress	BYTE	Short address allocated to the first control gear (0 ... 63).
nOptions	DWORD	Options for addressing the control gears (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_COMPLETE_NEW_INSTALLATION	All control gears are re-addressed, including control gears that already have a short address.
DALIV2_OPTION_DELETE_ALL_GROUP_ASSIGNMENTS	Before addressing, the group assignments (see variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_DELETE_ALL_SCENE_ASSIGNMENTS	Before addressing, the scenes (see variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_OPTICAL_FEEDBACK	Before addressing, all control gears are set to <u>MIN LEVEL</u> [► 88]. Newly addressed control gears are assigned <u>MAX LEVEL</u> [► 88] brightness after assignment of the short address.

Name	Type	Description
bStart	BOOL	A positive edge at this input activates the function block, thereby starting the addressing sequence.
nStartWithShortAddress	BYTE	Short address allocated to the first control gear (0 ... 63).
nOptions	DWORD	Options for addressing the control gears (see table). The individual constants must be linked with OR operators.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB KL6811Communication</u> [► 77] (KL6811) or <u>FB KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    arrAddressedDevices : ARRAY [0..63] OF BOOL;
    eCurrentAddressingState : E_DALIV2CurrentAddressingState;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).
arrAddressedDevices	ARRAY OF BOOLS	Once a short address is assigned to a control gear, the associated element is set in the structure. The structure index reflects the short address of the control gear.

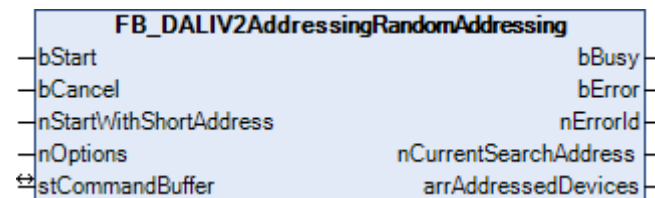
Name	Type	Description
eCurrentAddressing State	E_DALIV2CurrentAddressingState [► 462]	The output variable indicates the current step.

Element	Description
eDALIV2AddrStateIdle	No addressing takes place.
eDALIV2AddrStateRemoveLamp	The function block waits for a lamp to be removed at a control gear.
eDALIV2AddrStateReinsertLamp	The function block has detected the control gear on which the lamp was removed (the control gear is selected) and now waits for it to be inserted again.
eDALIV2AddrStateAddressingLamp	The selected control gear is addressed.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.3 FB_DALIV2AddressingRandomAddressing



The function block FB_DALIV2AddressingRandomAddressing addresses the control gears at random. The user has no influence over which short address is assigned to which control gear. Short addresses are allocated in ascending order.

Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. Depending on the selected options (parameter *nOptions*) the group membership and scenes are subsequently deleted. The function block now addresses all control gears independently. The output variable *arrAddressedDevices* provides information about which control gears have already been assigned a short address. Once all control gears have been addressed, the *bBusy* output switches back to FALSE. Addressing can be aborted through a positive edge at input *bCancel*. Processing this function block can take several minutes, depending on how many control gears are attached.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    nStartWithShortAddress : BYTE := 0;
    nOptions        : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
END_VAR

```

Name	Type	Description
bStart	BOOL	A positive edge at this input activates the function block, thereby starting the addressing sequence.
bCancel	BOOL	A positive edge at this input deactivates the function block, thereby interrupting the addressing sequence.
nStartWithShortAddress	BYTE	Short address allocated to the first control gear (0 ... 63).
nOptions	DWORD	Options for addressing the control gears (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_COMPLETE_NEW_INSTALLATION	All control gears are re-addressed, including control gears that already have a short address.
DALIV2_OPTION_DELETE_ALL_GROUP_ASSIGNMENTS	Before addressing, the group assignments (see variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_DELETE_ALL_SCENE_ASSIGNMENTS	Before addressing, the scenes (see variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88]) are deleted for all control gears, including those that may not be addressed.
DALIV2_OPTION_OPTICAL_FEEDBACK	Before addressing, all control gears are set to <u>MIN LEVEL</u> [► 88]. Newly addressed control gears are assigned <u>MAX LEVEL</u> [► 88] brightness after assignment of the short address.
DALIV2_OPTION_WITHOUT_RANDOMISE	The RANDOMISE command is not called before the addressing sequence. This means that all control gears retain their existing random address (<u>RANDOM ADDRESS</u> [► 88]). Only use this option when necessary.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

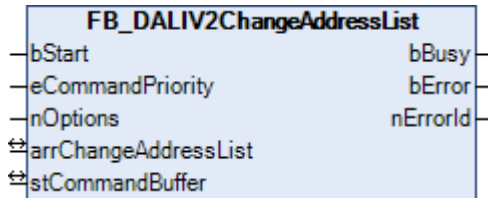
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nCurrentSearchAddress : UDINT;
  arrAddressedDevices : ARRAY [0..63] OF BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).
nCurrentSearchAddress	UDINT	Current search address (see <u>SEARCH ADDRESS</u> [► 88])
arrAddressedDevices	ARRAY OF BOOL	Once a short address is assigned to a control gear, the associated element is set in the structure. The structure index reflects the short address of the control gear.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.1.4 FB_DALIV2ChangeAddressList



The function block FB_DALIV2ChangeAddressList can be used to change the short addresses of several control gears. In contrast to the [FB_DALIV2SwapShortAddressList](#) [► 20] function block, it is not necessary for a free, unused short address to be available in the DALI line.

A list of the control gears whose short addresses are to be changed is transferred in the *arrChangeAddressList* array of type [ST_DALIV2ChangeAddressList](#) [► 464]. The list has 64 entries from 0 to 63. Each entry contains a variable *nOldAddress* and *nNewAddress* with which the address assignment is parameterized. The end of the list is programmed with a 255 entry at *nOldAddress*, so that the whole list does not necessarily have to be filled in. If this entry is missing, however, then all entries are accepted. When the function block is started (positive edge on *bStart*), the list end is first determined on the basis of the above-described entry and afterwards the valid list range is examined for the following false entries:

- Address entries > 63
- Double address entry on the original page *nOldAddress* (would not make sense)
- Double address entry on the target page *nNewAddress* (leads to double assignment of an address and, hence, to errors)

The function block then determines the internal long addresses of the DALI devices on the basis of the short addresses and enters them respectively in the parameters *nRandomAddressHigh*, *nRandomAddressMiddle* and *nRandomAddressLow* of the list. If an error occurs during these queries, this leads to a false entry for the respective device in the list element *nErrors* (see [ST_DALIV2ChangeAddressList](#) [► 464]). The further sequence in the function block now depends on the option [DALIV2_OPTION_SAFE_ADDRESSING](#) (input *nOptions*). If it is set, secure re-addressing takes place: first, all short addresses of the selected DALI devices are deleted. Afterwards, status queries are sent to all desired new addresses in the DALI line. 2 cases are now possible:

- If a device responds to this request, the desired new address has already been assigned elsewhere. The previously “deleted” DALI devices are programmed with their old addresses and an error message is output.
- If no devices respond to this status query, then the previously “deleted” DALI devices are programmed with the desired new addresses.

The reprogramming is checked afterwards in both cases. If errors occur during deletion, status query or reprogramming, this leads to an error entry for the respective device in the list element *nErrors* (see [ST_DALIV2ChangeAddressList](#) [► 464]).

If the [DALIV2_OPTION_SAFE_ADDRESSING](#) option (input *nOptions*) is **not** set, the short addresses are not deleted and the status query for the existence of desired new addresses is omitted and the new addresses are programmed directly. This is possible because programming takes place via the long address determined beforehand. Reprogramming is not verified in this case.

The individual bits in the list element *nErrors* have the following meaning:

Bit	Error
0	Error whilst reading the high byte of the long address (<i>nRandomAddressHigh</i>).
1	Error whilst reading the middle byte of the long address (<i>nRandomAddressMiddle</i>).
2	Error whilst reading the low byte of the long address (<i>nRandomAddressLow</i>).

Bit	Error
3	Error whilst deleting a short address.
4	Error whilst verifying a short address.
5	Error whilst programming a short address.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityHigh;
    nOptions        : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
END_VAR

```

Name	Type	Description
bStart	BOOL	A positive edge at this input activates the function block, thereby starting the addressing sequence.
bCancel	BOOL	A positive edge at this input deactivates the function block, thereby interrupting the addressing sequence.
eCommandPriority	E_DALIV2CommandPriority [▶ 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for writing the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_SAFE_ADDRESSING	Safe addressing: Old short addresses are deleted, the new ones are checked to see if they already exist and reprogramming is verified.

Inputs/outputs

```

VAR_IN_OUT
    arrChangeAddressList : ARRAY [0.. 63] OF ST_DALIV2ChangeAddressList;
    stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
arrChangeAddressList	ST_DALIV2ChangeAddressList [▶ 464]	A reference to the list containing the short addresses to be changed
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [▶ 77] (KL6811) or FB_KL6821Communication [▶ 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

```

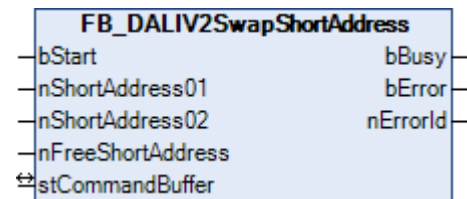
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.1.5 FB_DALIV2SwapShortAddress



The short addresses of two control gears can be swapped using the function block FB_DALIV2SwapShortAddress. However, this requires a free, unused short address to be available in the DALI line.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nShortAddress01 : BYTE;
    nShortAddress02 : BYTE;
    nFreeShortAddress : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nShortAddress01	BYTE	Short address of the first control gear (0 ... 63)
nShortAddress02	BYTE	Short address of the second control gear (0 ... 63)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

```

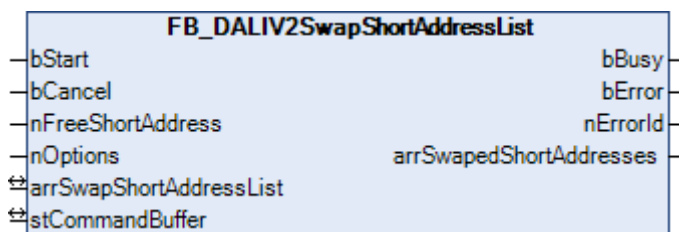
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.6 FB_DALIV2SwapShortAddressList



The short addresses of several control gears can be swapped using the function block FB_DALIV2SwapShortAddressList. However, this requires a free, unused short address to be available in the DALI line.

In the parameter *arrSwapShortAddressList*, a list of the control gears whose short addresses are to be changed is transferred. The index of the structure thereby corresponds to the short address of the control gear. The element *nNewShortAddress* contains the new short address. *bShortAddressValid* must be set to TRUE, to ensure that the short address is changed in the corresponding control gear. Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. Depending on the chosen options (parameter *nOptions*), all lamps will be set to the value MIN LEVEL. The elements of the output *arrSwapedShortAddresses* are reset. If the new short address is set for a control gear, the corresponding element in the output *arrSwapedShortAddresses* is set to TRUE. If the option DALIV2_OPTION_OPTICAL_FEEDBACK is active, the lamp will in addition be set to the value MAX LEVEL.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    nFreeShortAddress : BYTE;
    nOptions         : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bCancel	BOOL	A positive edge at this input deactivates the function block, thereby interrupting the addressing sequence.
nFreeShortAddress	BYTE	Free short address (0 ... 63)
nOptions	DWORD	Options for swapping short addresses (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_OPTICAL_FEEDBACK	Before swapping the short addresses, all control gears are set to <u>MIN LEVEL</u> [► 88]. After assigning the new short address, the brightness of the respective control gear will be changed to <u>MAX LEVEL</u> [► 88].

Inputs/outputs

```

VAR_IN_OUT
    arrSwapShortAddressList : ARRAY [0..63] OF ST_DALIV2SwapShortAddressList;
    stCommandBuffer         : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
arrSwapShortAddressList	ARRAY OF ST_DALIV2SwapShortAddressList [► 467]	A reference to the list containing the short addresses to be swapped
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    arrSwapedShortAddresses : ARRAY [0..63] OF BOOL;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).
arrSwapedShortAddresses	ARRAY OF BOOL	If the new short address has been set for a control gear, the corresponding element will be set in the structure. The structure index reflects the short address of the control gear.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

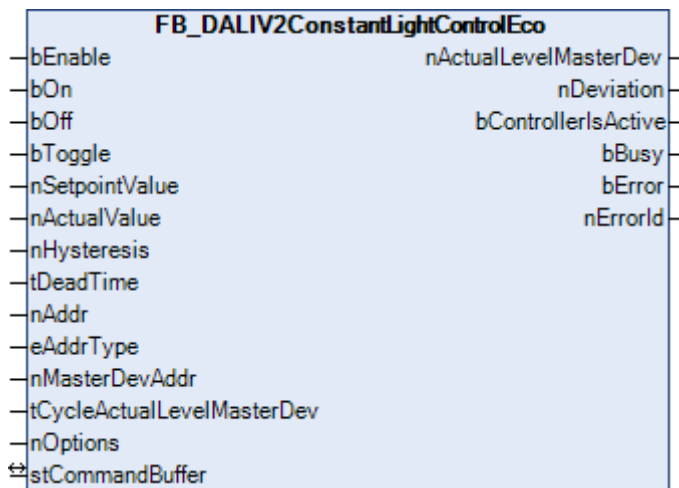
4.1.1.1.2 Power control

Function blocks

Name	Description
FB_DALIV2ConstantLightControlEco [► 22]	Simple function block for constant light control of DALI devices.

Name	Description
FB_DALIV2Dimmer1Switch [► 25]	Function block for dimming DALI devices with one switch.
FB_DALIV2Dimmer1SwitchEco [► 28]	Memory saving version of FB_DALIV2Dimmer1Switch [► 25] with no special functions.
FB_DALIV2Dimmer1SwitchMultiple [► 30]	Function block for dimming DALI devices with one switch. For applications in which up to five DALI lines (0..4) can be installed.
FB_DALIV2Dimmer2Switch [► 32]	Function block for dimming DALI devices with two switches.
FB_DALIV2Dimmer2SwitchEco [► 35]	Memory saving version of FB_DALIV2Dimmer2Switch [► 32] with no special functions.
FB_DALIV2Light [► 37]	Function block for controlling lamps.
FB_DALIV2LightControl [► 39]	Function block for daylight-dependent lighting control with up to 30 interpolation points.
FB_DALIV2Ramp [► 42]	Function block for realizing a ramp.
FB_DALIV2Sequencer [► 45]	Function block for realizing light sequences with up to 50 interpolation points.
FB_DALIV2StairwellDimmer [► 49]	Function block for controlling stairwell lighting.

4.1.1.1.2.1 FB_DALIV2ConstantLightControlEco



The function block FB_DALIV2ConstantLightControlEco is used for constant light control with DALI control gears.

The system tries to match a specified setpoint through cyclic dimming. The control dynamics are determined by a dead time ($t_{DeadTime}$). The dead time defines the delay between the individual commands for changing the control value. The smaller the dead time, the faster the control. A freely definable hysteresis ($n_{Hysteresis}$) prevents continuous oscillation around the setpoint. If the actual value is within the hysteresis range around the setpoint, the lamps brightness remains unchanged. An option is available for specifying whether the lamps should be switched on and off automatically (see table below).

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, $eAddrType = eAddrTypeShort$. In this case, the $nMasterDevAddr$ parameter has no significance.

Inputs

```

VAR_INPUT
    bEnable          : BOOL := TRUE;
    bOn              : BOOL;
    bOff             : BOOL;
    bToggle          : BOOL;
    nSetpointValue   : UINT := 500;
    nActualValue     : UINT;
    nHysteresis      : UINT := 50;
    tDeadTime        : TIME := t#10s;
    nAddr            : BYTE := 0;
    eAddrType        : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nMasterDevAddr   : BYTE := 0;
    tCycleActualLevelMasterDev : TIME := t#0s;
    nOptions         : DWORD := 0;
END_VAR

```

Name	Type	Description
bEnable	BOOL	Enables the function block. If this input is FALSE, the inputs <i>bOn</i> , <i>bOff</i> and <i>bToggle</i> are disabled. No control values are output.
bOn	BOOL	Switches the addressed devices to <u>MAX LEVEL</u> [► 88] and activates constant light control.
bOff	BOOL	Switches the addressed devices off and disables constant light control.
bToggle	BOOL	The lighting is switched on or off, depending on the state of the reference device.
nSetpointValue	UINT	This input is used for specifying the setpoint.
nActualValue	UINT	The actual value is applied at this input.
nHysteresis	UINT	Control hysteresis around the setpoint. If the actual value is within this range, the control values for the lamps remain unchanged.
tDeadTime	TIME	Dead time between the individual commands used for changing the control value for the DALI lamps.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value of the reference lamp in the background (see <u>ACTUAL DIM LEVEL</u> [► 88]). So that the controlling of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited. The value read is output at the <i>nActualLevelMasterDev</i> output.
nOptions	DWORD	Options for swapping short addresses (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_SWITCH_ON_AND_OFF	The DALI commands <u>ON AND STEP UP</u> [► 119] and <u>STEP DOWN AND OFF</u> [► 123] are used for changing the control value. This switches the lamps off after reaching the <u>MIN LEVEL</u> [► 88]. If the control deviation is above the hysteresis, the lamps are switched on again. If this option is not set, the commands <u>STEP UP</u> [► 124] and <u>STEP DOWN</u> [► 122] are used. This keeps the lamps switched on at all times.

Constant	Description
DALIV2_OPTION_SWITCH_ON_WITH_MIN_LEVEL	If the light is switched on again by the constant light control, this option always uses the command MIN_LEVEL [► 88] . If the option is not set, MAX_LEVEL [► 88] is used. This option is available from v3.3.2.0 of the Tc2_DALI PLC library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

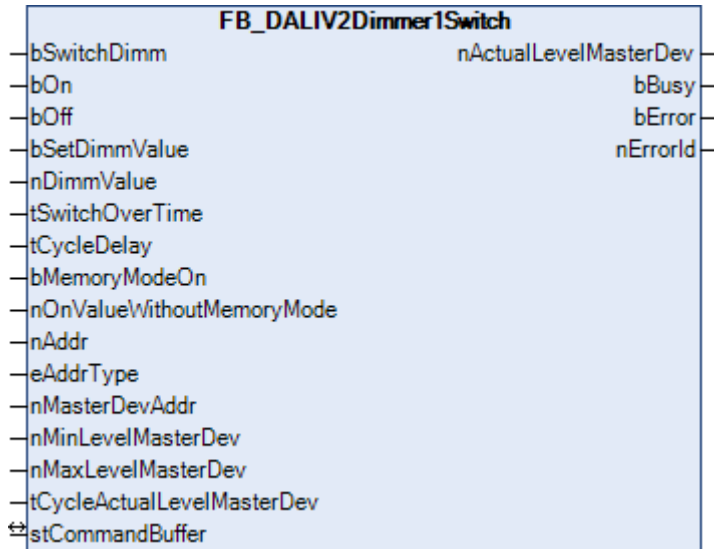
```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  nDeviation            : INT;
  bControllerIsActive   : BOOL;
  bBusy                 : BOOL;
  bError                 : BOOL;
  nErrorId              : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
nDeviation	INT	Current control deviation (setpoint/actual value)
bControllerIsActive	BOOL	This output is set once the control is activated.
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.2 FB_DALIV2Dimmer1Switch



The function block FB_DALIV2Dimmer1Switch switches and dims a single DALI lamp, a DALI group or a complete DALI line via a push button.

Operating by means of the bSwitchDimm input

The light is switched on or off by a short signal at the *bSwitchDimm* input. Dimmer mode will be activated if the signal remains for longer than *tSwitchOverTime* (typical recommended value: 200 ms). The output signal then cycles between *nMinLevelMasterDev* and *nMaxLevelMasterDev*. In order to be able to set the maximum or minimum value more easily, the output signal pauses at the level of the maximum and minimum values for the time given by *tCycleDelay*. When the signal is once more removed, the output signal being generated at that time is retained. Another pulse at the input will set the output to 0. If the *bSwitchDimm* is briefly removed in dimmer mode, the function block changes the direction of dimming.

Operation by means of the bOn and bOff inputs

The light is immediately switched on or off if a rising edge is applied to the *bOn* or *bOff* inputs. The output value is set to 0 when switching off. The switch-on behavior can be affected by the memory function (see below).

Operation by means of the bSetDimmValue and nDimmValue inputs

If the value of *nDimmValue* changes the devices concerned will be switched to this brightness value immediately. The significant point here is that the value changes. The lighting is switched off by changing the value to 0. If there is a rising edge at the *bSetDimmValue* input, the value of *nDimmValue* immediately appears at the output. Immediate modification of the output can be suppressed by a static 1- signal at the *bSetDimmValue* input. This makes it possible to apply a value to the *nDimmValue* input, but for this value only to be passed to the output at the next rising edge of *bSetDimmValue*.

The *bSetDimmValue* and *nDimmValue* inputs can be used to implement a variety of lighting scenarios. Using *nDimmValue* to set the outputs directly can be used to achieve particular brightness levels, either directly or by continuously changing the value. *nDimmValue* must have a value between *nMinLevelMasterDev* and *nMaxLevelMasterDev*. The value 0 is an exception. If the value is outside this range, the output value is limited to the upper or lower limit, as appropriate.

The memory function

It is necessary to determine whether the memory function (*bMemoryModeOn* input) is active or not at switch-on. If the memory function is active, then the last set value is adopted as the brightness value as soon as the device is switched on. If the memory function is not active, a brightness specified by the *nOnValueWithoutMemoryMode* parameter is assigned to the devices concerned. It is irrelevant, in this case, whether the light it has been switched on by means of the *bOn* input or the *bSwitchDimm* input. It should be

noted that the *nOnValueWithoutMemoryMode* parameter must lie between *nMinLevelMasterDev* and *nMaxLevelMasterDev*. If this is not the case, the output value is adjusted to the upper or lower limit, as appropriate.

Comment on the *tSwitchOverTime* parameter

If a duration of 0 is specified for the parameter *tSwitchOverTime*, the *bSwitchDimm* input can only be used to dim the light. Switching on and off is only possible with the *bOn* and *bOff* inputs.

Comment on the *nMasterDevAddr* parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType* = *eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
  bSwitchDimm      : BOOL;
  bOn              : BOOL;
  bOff             : BOOL;
  bSetDimmValue    : BOOL;
  nDimmValue       : BYTE;
  tSwitchOverTime  : TIME := t#400ms;
  tCycleDelay      : TIME := t#500ms;
  bMemoryModeOn    : BOOL := FALSE;
  nOnValueWithoutMemoryMode : BYTE := 254;
  nAddr            : BYTE := 0;
  eAddrType        : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nMasterDevAddr   : BYTE := 0;
  nMinLevelMasterDev : BYTE := 126;
  nMaxLevelMasterDev : BYTE := 254;
  tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bSwitchDimm	BOOL	Switches or dims the addressed devices.
bOn	BOOL	Switches the addressed devices to the last output value, or to the value <i>nOnValueWithoutMemoryMode</i> .
bOff	BOOL	Switches the addressed devices off (value 0).
bSetDimmValue	BOOL	A positive edge at this input sets the addressed devices immediately to the brightness value that is present at input <i>nDimmValue</i> . If the value of <i>nDimmValue</i> changes, the brightness value is set immediately to the changed value if the input <i>bSetDimmValue</i> is FALSE.
nDimmValue	BYTE	see <i>bSetDimmValue</i>
tSwitchOverTime	TIME	Time for switching between the light on/off and dimming functions for the input <i>bSwitchDimm</i>
tCycleDelay	TIME	Delay time, if either the minimum or maximum value is reached.
bMemoryModeOn	BOOL	Switches to the memory function, so that the previous value is written to the output as soon as it is switched on.
nOnValueWithoutMemoryMode	BYTE	Switch-on value if the memory function is not switched on.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType ▶ 461	Short address, group address or broadcast

nMasterDevAddr	BYTE	The address of the master device for group and common switching operations
nMinLevelMasterDev	BYTE	Minimum value of the master device
nMaxLevelMasterDev	BYTE	Maximum value of the master device
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  bBusy                  : BOOL;
  bError                 : BOOL;
  nErrorId               : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.3 FB_DALIV2Dimmer1SwitchEco



The function block FB_DALIDimmer1SwitchEco is the memory-saving variant of [FB_DALIV2Dimmer1Switch](#) [► 25]. It is not equipped with the special function “Switch off memory function”.

Operating by means of the bSwitchDimm input

The light is switched on or off by a short signal at the *bSwitchDimm* input. If the signal remains for longer than *tSwitchOverTime* (recommended value: 200 ms), dimmer mode is activated and the brightness increases or decreases steadily. The dimming direction is changed by briefly removing the *bSwitchDimm* signal.

Operation by means of the bOn and bOff inputs

The light is immediately switched on or off if a rising edge is applied to the *bOn* or *bOff* inputs. The output value is set to 0 when switching off.

Operation by means of the bSetDimmValue and nDimmValue inputs

If the value of *nDimmValue* changes the devices concerned will be switched to this brightness value immediately. The significant point here is that the value changes. The lighting is switched off by changing the value to 0. If there is a positive edge at the *bSetDimmValue* input, the value of *nDimmValue* immediately appears at the output. Immediate modification of the output can be suppressed by a static 1- signal at the *bSetDimmValue* input. This makes it possible to apply a value to the *nDimmValue* input, but for this value only to be passed to the output at the next positive edge of *bSetDimmValue*.

The *bSetDimmValue* and *nDimmValue* inputs can be used to implement a variety of lighting scenarios. Direct setting of the output, by means of *nDimmValue*, can be used to achieve particular brightness levels. Either directly or by continuously changing the value.

Memory function

In contrast to [FB_DALIV2Dimmer1Switch](#) [► 25], where the memory function can be activated or deactivated via the input *bMemoryModeOn*, the memory function is always active in this memory-saving version. This means that the last-set value is adopted as the brightness value when switching on. It does not matter whether the light is switched via the input *bOn* or via the input *bSwitchDimm*.

Comment on the tSwitchOverTime parameter

If a duration of 0 is specified for the parameter *tSwitchOverTime*, the *bSwitchDimm* input can only be used to dim the light. Switching on and off is only possible with the *bOn* and *bOff* inputs.

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is

assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType = eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
  bSwitchDimm      : BOOL;
  bOn               : BOOL;
  bOff              : BOOL;
  bSetDimmValue     : BOOL;
  nDimmValue        : BYTE;
  tSwitchOverTime   : TIME := t#400ms;
  nAddr             : BYTE := 0;
  eAddrType         : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nMasterDevAddr    : BYTE := 0;
  tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bSwitchDimm	BOOL	Switches or dims the addressed devices.
bOn	BOOL	Switches the addressed devices to the last output value, or to the value <i>nOnValueWithoutMemoryMode</i> .
bOff	BOOL	Switches the addressed devices off (value 0).
bSetDimmValue	BOOL	A positive edge at this input sets the addressed devices immediately to the brightness value that is present at input <i>nDimmValue</i> . If the value of <i>nDimmValue</i> changes, the brightness value is set immediately to the changed value if the input <i>bSetDimmValue</i> is FALSE.
nDimmValue	BYTE	see <i>bSetDimmValue</i>
tSwitchOverTime	TIME	Time for switching between the light on/off and dimming functions for the input <i>bSwitchDimm</i>
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

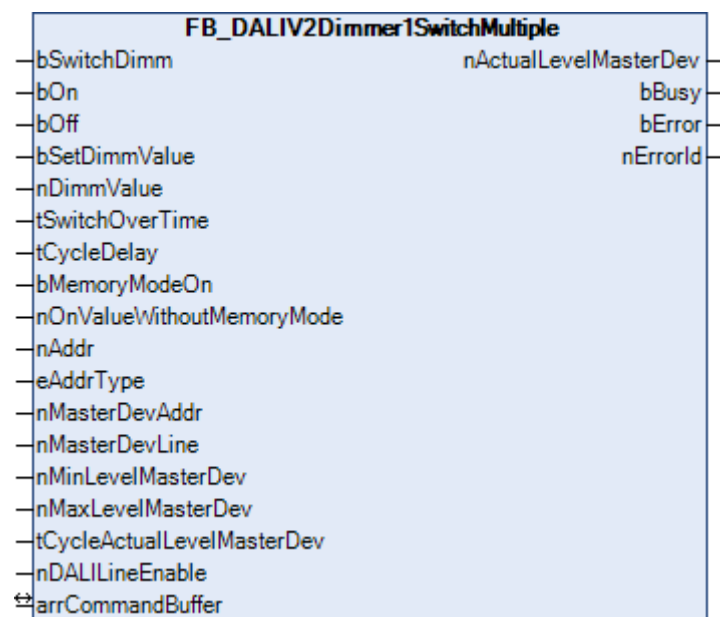
```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  bBusy                 : BOOL;
  bError                : BOOL;
  nErrorId              : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.4 FB_DALIV2Dimmer1SwitchMultiple



The function block FB_DALIV2Dimmer1SwitchMultiple is used to switch and dim DALI devices with a push button. For applications in which up to five DALI lines (0..4) can be installed. The basic function of this function block can be found in the description of [FB_DALIV2Dimmer1Switch](#) [► 25].

Inputs

```

VAR_INPUT
  bSwitchDimm          : BOOL;
  bOn                  : BOOL;
  bOff                  : BOOL;
  bSetDimmValue        : BOOL;
  nDimmValue           : BYTE;
  tSwitchOverTime      : TIME := t#400ms;
  tCycleDelay          : TIME := t#500ms;
  bMemoryModeOn        : BOOL := FALSE;
  nOnValueWithoutMemoryMode : BYTE := 254;
  nAddr                : BYTE := 0;
  eAddrType            : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nMasterDevAddr       : BYTE := 0;

```

```

nMasterDevLine      : BYTE := 0;
nMinLevelMasterDev  : BYTE := 126;
nMaxLevelMasterDev  : BYTE := 254;
tCycleActualLevelMasterDev : TIME := t#0s;
nDALILineEnable     : BYTE := 2#0000_0001;
END_VAR

```

Name	Type	Description
bSwitchDimm	BOOL	Switches or dims the addressed devices.
bOn	BOOL	Switches the addressed devices to the last output value, or to the value <i>nOnValueWithoutMemoryMode</i> .
bOff	BOOL	Switches the addressed devices off (value 0).
bSetDimmValue	BOOL	A positive edge at this input sets the addressed devices immediately to the brightness value that is present at input <i>nDimmValue</i> . If the value of <i>nDimmValue</i> changes, the brightness value is set immediately to the changed value if the input <i>bSetDimmValue</i> is FALSE.
nDimmValue	BYTE	see <i>bSetDimmValue</i>
tSwitchOverTime	TIME	Time for switching between the light on/off and dimming functions for the input <i>bSwitchDimm</i>
tCycleDelay	TIME	Delay time, if either the minimum or maximum value is reached.
bMemoryModeOn	BOOL	Switches to the memory function, so that the previous value is written to the output as soon as it is switched on.
nOnValueWithoutMemoryMode	BYTE	Switch-on value if the memory function is not switched on.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
nMasterDevLine	BYTE	The line on which the master device for group and common configurations is located. Depending on the function block, there is only one master device that is to be selected from one of the activated DALI lines. Lines 0 to 4 are available.
nMinLevelMasterDev	BYTE	Minimum value of the master device
nMaxLevelMasterDev	BYTE	Maximum value of the master device
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.
nDALILineEnable		Input variable in the form of a bit pattern. A 1 in the bit pattern indicates that the DALI line is activated. Example: 2#01001 means that DALI lines 0 and 3 are activated.

Inputs/outputs

```

VAR_IN_OUT
stCommandBuffer00 : ST_DALIV2CommandBuffer;
stCommandBuffer01 : ST_DALIV2CommandBuffer;
stCommandBuffer02 : ST_DALIV2CommandBuffer;
stCommandBuffer03 : ST_DALIV2CommandBuffer;
stCommandBuffer04 : ST_DALIV2CommandBuffer;
END_VAR

```


Name	Type	Description
stCommandBuffer00 - stCommandBuffer04	ST_DALIV2CommandBuffer	Reference to the internal structures for communication with the function blocks <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

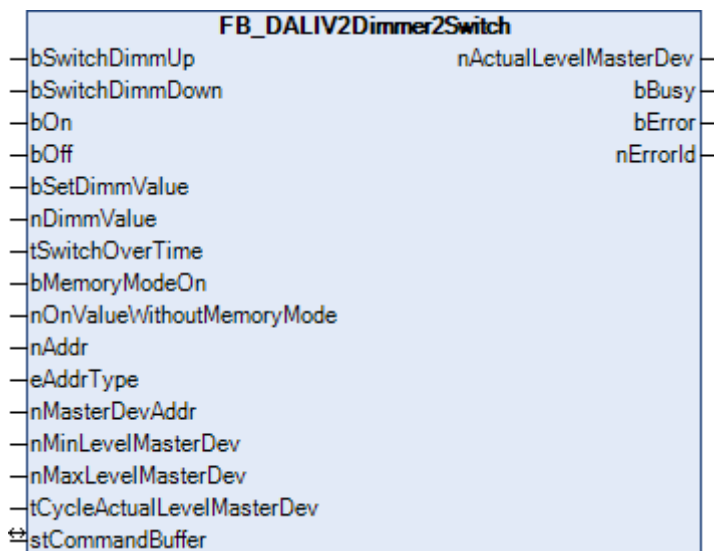
```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  bBusy                 : BOOL;
  bError                : BOOL;
  nErrorId              : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.5 FB_DALIV2Dimmer2Switch



The function block `FB_DALIDimmer2Switch` corresponds to the function block `FB_DALIV2Dimmer1Switch` [► 25]. The difference is that two switches are connected to the function block `FB_DALIDimmer2Switch`. This allows the operator to specifically dim up or down.

Operation by means of the *bSwitchDimmUp* and *bSwitchDimmDown* inputs

The light is switched on or off by a short signal at the *bSwitchDimmUp* or *bSwitchDimmDown* inputs. Dimmer mode will be activated if the signal remains for longer than *tSwitchOverTime* (typical recommended value: 200 ms). The addressed devices are now dimmed to the levels specified by *nMaxLevelMasterDev* and *nMinLevelMasterDev*. When the signal is once more removed, the output signal being generated at that time is retained. Another pulse at one of the inputs will set the output to 0.

Operation by means of the *bOn* and *bOff* inputs

The light is immediately switched on or off if a rising edge is applied to the *bOn* or *bOff* inputs. The output value is set to 0 when switching off. The switch-on behavior can be affected by the memory function (see below).

Operation by means of the *bSetDimmValue* and *nDimmValue* inputs

If the value of *nDimmValue* changes the devices concerned will be switched to this brightness value immediately. The significant point here is that the value changes. The lighting is switched off by changing the value to 0. If there is a rising edge at the *bSetDimmValue* input, the value of *nDimmValue* immediately appears at the output. Immediate modification of the output can be suppressed by a static 1- signal at the *bSetDimmValue* input. This makes it possible to apply a value to the *nDimmValue* input, but for this value only to be passed to the output at the next rising edge of *bSetDimmValue*.

The *bSetDimmValue* and *nDimmValue* inputs can be used to implement a variety of lighting scenarios. Using *nDimmValue* to set the outputs directly can be used to achieve particular brightness levels, either directly or by continuously changing the value. *nDimmValue* must have a value between *nMinLevelMasterDev* and *nMaxLevelMasterDev*. The value 0 is an exception. If the value is outside this range, the output value is limited to the upper or lower limit, as appropriate.

The memory function

It is necessary to determine whether the memory function (*bMemoryModeOn* input) is active or not at switch-on. If the memory function is active, then the last set value is adopted as the brightness value as soon as the device is switched on. If the memory function is not active, a brightness specified by the *nOnValueWithoutMemoryMode* parameter is assigned to the devices concerned. It is irrelevant, in this case, whether the light it has been switched on by means of the *bOn* input or the *bSwitchDimm* input. It should be noted that the *nOnValueWithoutMemoryMode* parameter must lie between *nMinLevelMasterDev* and *nMaxLevelMasterDev*. If this is not the case, the output value is adjusted to the upper or lower limit, as appropriate.

Comment on the *tSwitchOverTime* parameter

If a duration of 0 is specified for the parameter *tSwitchOverTime*, the *bSwitchDimm* input can only be used to dim the light. Switching on and off is only possible with the *bOn* and *bOff* inputs.

Comment on the *nMasterDevAddr* parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType* = *eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
    bSwitchDimmUp       : BOOL;
    bSwitchDimmDown     : BOOL;
    bOn                  : BOOL;
    bOff                 : BOOL;
    bSetDimmValue        : BOOL;
    nDimmValue           : BYTE;
    tSwitchOverTime      : TIME := t#400ms;
```

```

bMemoryModeOn      : BOOL := FALSE;
nOnValueWithoutMemoryMode : BYTE := 254;
nAddr              : BYTE := 0;
eAddrType          : E_DALIV2AddrType := eDALIV2AddrTypeShort;
nMasterDevAddr     : BYTE := 0;
nMinLevelMasterDev : BYTE := 126;
nMaxLevelMasterDev : BYTE := 254;
tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR

```

Name	Type	Description
bSwitchDimmUp	BOOL	Switches or dims the addressed devices up.
bSwitchDimmDown	BOOL	Switches or dims the addressed devices down.
bOn	BOOL	Switches the addressed devices to the last output value, or to the value <i>nOnValueWithoutMemoryMode</i> .
bOff	BOOL	Switches the addressed devices off (value 0).
bSetDimmValue	BOOL	A positive edge at this input sets the addressed devices immediately to the brightness value that is present at input <i>nDimmValue</i> . If the value of <i>nDimmValue</i> changes, the brightness value is set immediately to the changed value if the input <i>bSetDimmValue</i> is FALSE.
nDimmValue	BYTE	see <i>bSetDimmValue</i>
tSwitchOverTime	TIME	Time for switching between the light on/off and dimming functions for the inputs <i>bSwitchDimmUp</i> and <i>bSwitchDimDown</i>
bMemoryModeOn	BOOL	Switches to the memory function, so that the previous value is written to the output as soon as it is switched on.
nOnValueWithoutMemoryMode	BYTE	Switch-on value if the memory function is not switched on.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
nMinLevelMasterDev	BYTE	Minimum value of the master device
nMaxLevelMasterDev	BYTE	Maximum value of the master device
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see <u>ACTUAL DIM LEVEL</u> [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB KL6811Communication</u> [► 77] (KL6811) or <u>FB KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  bBusy                : BOOL;

```

```

bError          : BOOL;
nErrorId        : UDINT;
END_VAR

```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.6 FB_DALIV2Dimmer2SwitchEco



The function block `FB_DALIDimmer2SwitchEco` is the memory-saving variant of `FB_DALIV2Dimmer2Switch` [► 32]. It is not equipped with the special function “Switch off memory function”.

Operation by means of the `bSwitchDimmUp` and `bSwitchDimmDown` inputs

The light is switched on or off by a short signal at the *bSwitchDimmUp* or *bSwitchDimmDown* inputs. Dimmer mode will be activated if the signal remains for longer than *tSwitchOverTime* (typical recommended value: 200ms). The addressed devices are now dimmed. When the signal is once more removed, the output signal being generated at that time is retained. Another pulse at one of the inputs will set the output to 0.

Operation by means of the `bOn` and `bOff` inputs

The light is immediately switched on or off if a rising edge is applied to the *bOn* or *bOff* inputs. The output value is set to 0 when switching off.

Memory function

In contrast to [FB_DALIV2Dimmer2Switch](#) [► 32], where the memory function can be activated or deactivated via the input *bMemoryModeOn*, the memory function is always active in this memory-saving version. This means that the last-set value is adopted as the brightness value when switching on. It does not matter whether the light is switched via the input *bOn* or via the input *bSwitchDimm*.

Comment on the tSwitchOverTime parameter

If a duration of 0 is specified for the parameter *tSwitchOverTime*, the *bSwitchDimm* input can only be used to dim the light. Switching on and off is only possible with the *bOn* and *bOff* inputs.

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType* = *eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
    bSwitchDimmUp          : BOOL;
    bSwitchDimmDown        : BOOL;
    bOn                    : BOOL;
    bOff                   : BOOL;
    bSetDimmValue          : BOOL;
    nDimmValue             : BYTE;
    tSwitchOverTime        : TIME := t#400ms;
    nAddr                  : BYTE := 0;
    eAddrType              : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nMasterDevAddr         : BYTE := 0;
    tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bSwitchDimmUp	BOOL	Switches or dims the addressed devices up.
bSwitchDimmDown	BOOL	Switches or dims the addressed devices down.
bOn	BOOL	Switches the addressed devices to the last output value, or to the value <i>nOnValueWithoutMemoryMode</i> .
bOff	BOOL	Switches the addressed devices off (value 0).
bSetDimmValue	BOOL	A positive edge at this input sets the addressed devices immediately to the brightness value that is present at input <i>nDimmValue</i> . If the value of <i>nDimmValue</i> changes, the brightness value is set immediately to the changed value if the input <i>bSetDimmValue</i> is FALSE.
nDimmValue	BYTE	see <i>bSetDimmValue</i>
tSwitchOverTime	TIME	Time for switching between the light on/off and dimming functions for the inputs <i>bSwitchDimmUp</i> and <i>bSwitchDimDown</i>
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations

Name	Type	Description
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    nActualLevelMasterDev : BYTE;
    bBusy                 : BOOL;
    bError                : BOOL;
    nErrorId              : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.7 FB_DALIV2Light



The function block FB_DALIV2Light is a simple function block for switching DALI lamps on and off.

Operation

A positive edge applied to the *bOn* input will switch the light to the maximum value ([MAX LEVEL \[► 88\]](#)) of the control gear. If the function block is executed successfully, the *bLight* output is set to TRUE. Applying a positive edge to the *bOff* input will switch the light off, and the *bLight* output will be set to FALSE. If a positive edge is applied to *bToggle*, the function block first reads the current light value from the master device, and then decides whether the status of the lamp is on or off. Once this decision has been reached, the lamp is then placed into whatever the other state is, i.e. it is switched from on to off or from off to on.

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType* = *eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
    bOn          : BOOL;
    bOff         : BOOL;
    bToggle      : BOOL;
    nAddr        : BYTE := 0;
    eAddrType    : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nMasterDevAddr : BYTE := 0;
    tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bOn	BOOL	Switches the addressed devices on (to the value MAX LEVEL [► 88]).
bOff	BOOL	Switches the addressed devices off (value 0).
bToggle	BOOL	Negates the status of the addressed devices.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_INPUT
    bLight    : BOOL;
    bBusy     : BOOL;
    bError    : BOOL;
    nErrorId  : UDINT;
END_VAR

```

Name	Type	Description
bLight	BOOL	The status of the lamp or group after the function block has been called
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

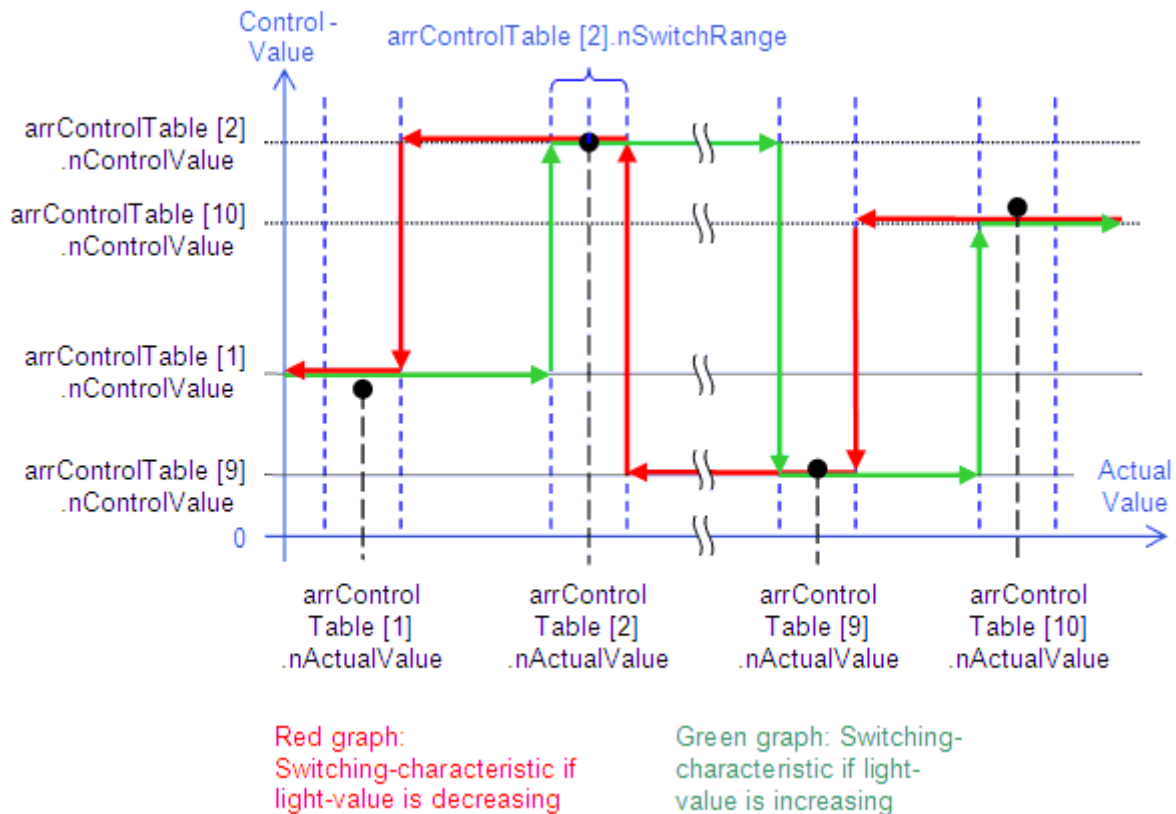
Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.8 FB_DALIV2LightControl



The function block FB_DALIV2LightControl is used for daylight-dependent lighting control with up to 30 interpolation points.

At the core of this function block is an input/control value table of 30 elements with threshold switching. If the actual value of the brightness reaches the range of an interpolation point ($arrControlTable[n].nActualValue - arrControlTable[n].nSwitchRange/2 \dots arrControlTable[n].nActualValue + arrControlTable[n].nSwitchRange/2$), the control value jumps to the corresponding value $arrControlTable[n].nControlValue$ (see diagram). Coupled to this is a ramp block that runs up the control value over the time *tRampTime*. When switching on with a positive edge at *bOn*, however, the light is initially switched directly to the nearest control value. Only then is the controller activated. While the controller is active, 'post-starting' can take place at any time with a positive edge at *bOn*, thus directly controlling the light to the nearest control variable. A positive edge at *bOff* directly switches off all the controlled lamps.



The whole range of the table does not have to be used. The first table element that has a 0 as the table end *nSwitchRange* is regarded as the beginning of the unused range.

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType = eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```
VAR_INPUT
  bEnable          : BOOL := TRUE;
  bOn              : BOOL;
  bOff             : BOOL;
  nActualValue     : UINT;
  tRampTime        : TIME := t#30s;
  arrControlTable  : ARRAY[1..30] OF ST_DALIV2ControlTable;
  nOptions         : DWORD := 0;
  nAddr           : BYTE := 0;
  eAddrType        : E_DALIV2AddrType := eDALIV2AddrType_Short;
  nMasterDevAddr   : BYTE := 0;
  tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bEnable	BOOL	The inputs <i>bOn</i> and <i>bOff</i> are active as long as this input is TRUE. A negative state deactivates the inputs and resets the function block after processing the last necessary DALI

Name	Type	Description
		commands. No further DALI commands are then output, apart from the cyclic querying of the brightness of the master device.
bOn	BOOL	A rising edge switches the controlled lamps directly to the nearest control value.
bOff	BOOL	A rising edge immediately switches off the controlled lamps.
nActualValue	UINT	Actual value of the brightness
tRampTime	TIME	Period during which the control value is controlled to the next value (preset value: 30 s).
arrControlTable	ARRAY OF ST_DALIV2ControlTable [► 464]	Input/control value table: <i>arrControlTable[1]</i> to <i>arrControlTable[30]</i> of the type <i>ST_DALIV2ControlTable</i>
nOptions	DWORD	Reserved for future developments.
nAddr	BYTE	Address of the single device for individual control or of the group for group control
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current control value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  bBusy                 : BOOL;
  bError                : BOOL;
  nErrorId              : UDINT;
END_VAR
```

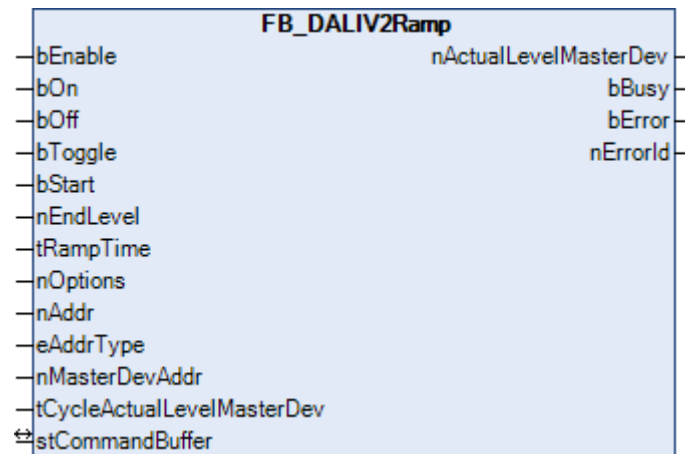
Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.9 FB_DALIV2Ramp



The function block FB_DALIV2Ramp is used to implement a light ramp.

A rising edge at the input *bOn* switches the light to the maximum value of the master lamp. A rising edge at input *bOff* switches the light off. Rising edges at the input *bToggle* invert the respective light state. A positive edge at the input *bStart* allows the function block to dim the light from the current level to *nEndLevel*. The time required for this is defined by *tRampTime*. All inputs are only active as long as *bEnable* is *TRUE*, otherwise the function block is reset internally and no further DALI commands are issued. Each time the dimming ramp is started, a check is carried out to ensure that the *nEndLevel* value is within the permissible limits ([MIN LEVEL](#) [► 88] ... [MAX LEVEL](#) [► 88]) of the master device. The value "0" is also allowed.

Ramp implementation

Basically, the function block is designed such that it issues the required number of *OnAndStepUp* or *StepDownAndOff* commands at uniform intervals within the specified ramp time.

The processing of these step and query commands, however, takes time. The further the ramp time is reduced, the more likely it is that the internally calculated time for a StepUp or StepDown command is no longer sufficient; the actual ramp time becomes longer and longer compared to the set time.

In order to be able to realize small ramps, the function of the function block is switched from step mode to DirectArcPower mode below an internally preset limit value of 11 s ramp time. The DALI command *DirectArcPowerControl* brings the corresponding lamps from their current value to the set end value within the [FADE TIME](#) [► 88]. There are a total of 16 different fade time values, which are stored in the control device of each lamp and can assume the following values:

nFadeTime	tFadeTime (s)
0	<0.0707
1	0.707
2	1.000
3	1.414
4	2.000
5	2.828

nFadeTime	tFadeTime (s)
6	4.000
7	5.657
8	8.000
9	11.314
10	16.000
11	22.627
12	32.000
13	45.255
14	64.000
15	90.510

The next value for the ramp that is set at the function block is taken from the table and programmed for all control gears to be controlled. At 6 s, step 7 = 5.657 s would apply, for example. The same value would also be used for a ramp time of 5 s. Precise timing would then no longer be possible. After successful completion of the ramp control, the value that the master device had **before** the time setting is transferred back to all control gears.

During the ramp, the output value *nActualLevelMasterDev* is output as an internally calculated value so as not to burden the DALI bus with constant query commands. This calculation is based on the difference between start and end value and the selected ramp time. Since it is a calculated value, it can be subject to errors caused by rounding and command delays and should only be used as a guide. After completion of the ramp the brightness is queried directly and the output value is exact again.

Comment on the nMasterDevAddr parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Since the individual devices may belong to different groups, the individual lamps may have different brightness states before a group or common control command. So that it is nevertheless possible to be clear whether the lamps now are to be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, *eAddrType* = *eAddrTypeShort*. In this case, the *nMasterDevAddr* parameter has no significance.

Inputs

```

VAR_INPUT
    bEnable      : BOOL := TRUE;
    bOn          : BOOL;
    bOff         : BOOL;
    bToggle      : BOOL;
    bStart       : BOOL;
    nEndLevel     : BYTE;
    tRampTime     : TIME := t#8s;
    nOptions      : DWORD := 0;
    nAddr        : BYTE := 0;
    eAddrType     : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nMasterDevAddr : BYTE := 0;
    tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR

```

Name	Type	Description
bEnable	BOOL	The <i>bOn</i> , <i>bOff</i> , <i>bToggle</i> and <i>bStart</i> inputs are active as long as this input is TRUE. A negative state deactivates the inputs and resets the function block after processing the last necessary DALI commands. No further DALI commands are then output, apart from the cyclic querying of the brightness of the master device.
bOn	BOOL	A rising edge directly switches the controlled lamps to the maximum value of the master lamp.
bOff	BOOL	A rising edge immediately switches off the controlled lamps.

Name	Type	Description
bToggle	BOOL	A rising edge immediately switches the controlled lamps off if the master lamp is not switched off and switches them on if the master lamp is off.
bStart	BOOL	If a rising edge is applied to this input, the light is dimmed up or down respectively from the current value (the master device is decisive here) to <i>nEndLevel</i> . The time required for this is defined by <i>tRampTime</i> . The dimming procedure can be interrupted at any time by <i>bOn</i> , <i>bOff</i> or <i>bToggle</i> .
nEndLevel	BYTE	Target value of the dimming procedure. (Valid value range: 0 or <u>MIN LEVEL</u> [► 88] ... <u>MAX LEVEL</u> [► 88])
tRampTime	TIME	Ramp time, see <i>bStart</i> . (Preset value: 8 seconds)
nOptions	DWORD	Reserved for future developments.
nAddr	BYTE	Address of the single device for individual control or of the group for group control
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see <u>ACTUAL DIM LEVEL</u> [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB KL6811Communication</u> [► 77] (KL6811) or <u>FB KL6821Communication</u> [► 82] (KL6821).

Outputs

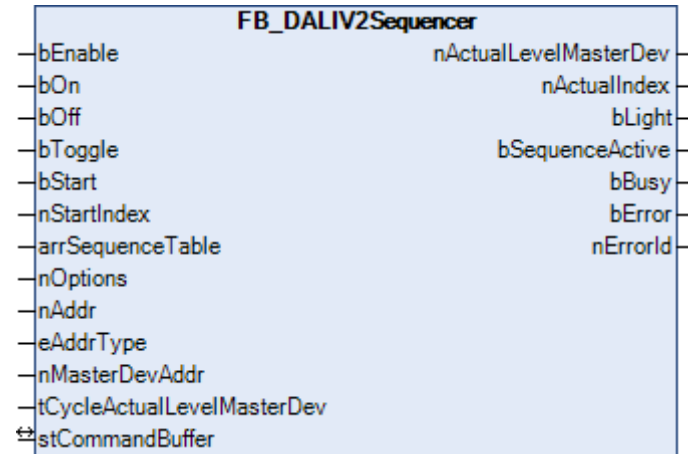
```
VAR_OUTPUT
    nActualLevelMasterDev : BYTE;
    bBusy                  : BOOL;
    bError                  : BOOL;
    nErrorId                : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

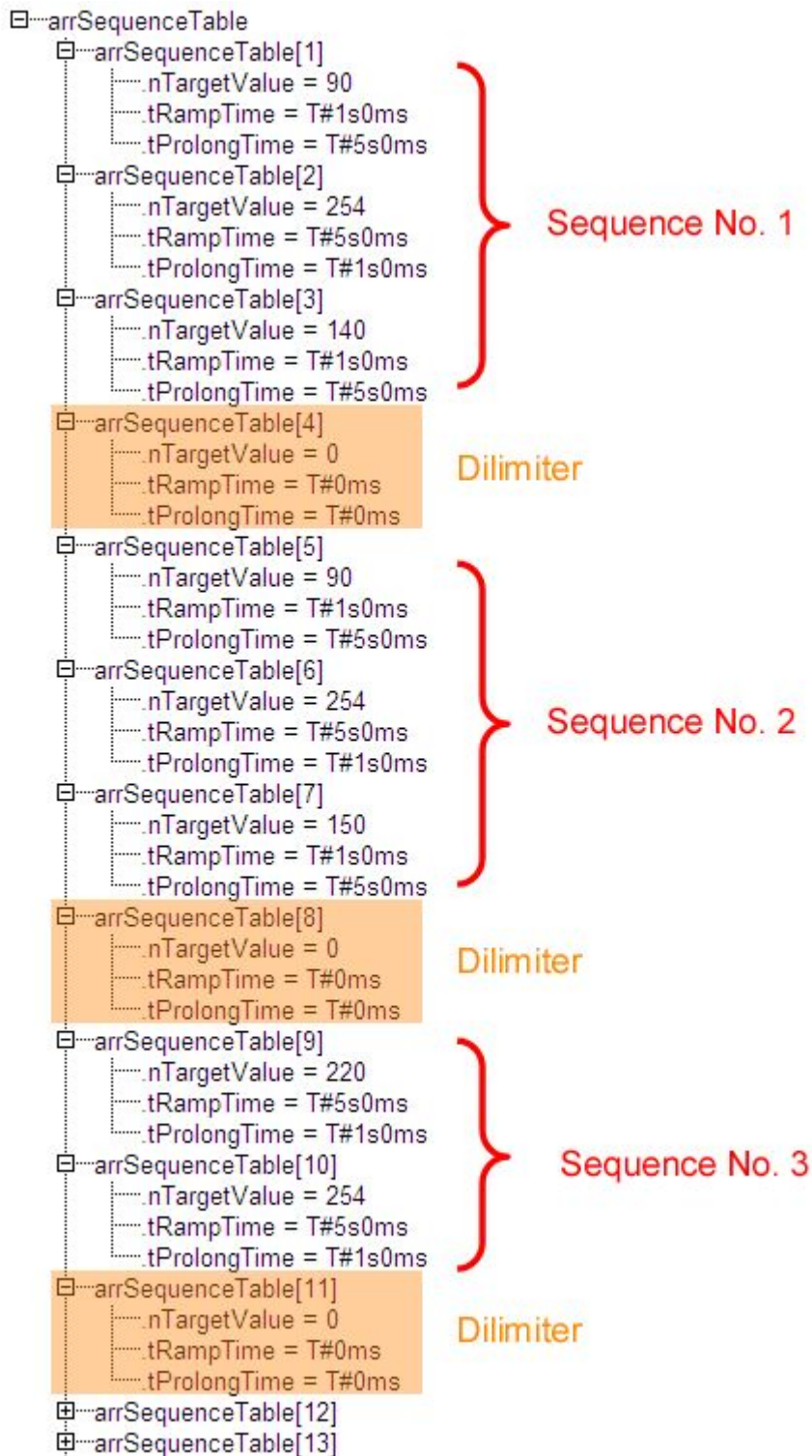
Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.10 FB_DALIV2Sequencer

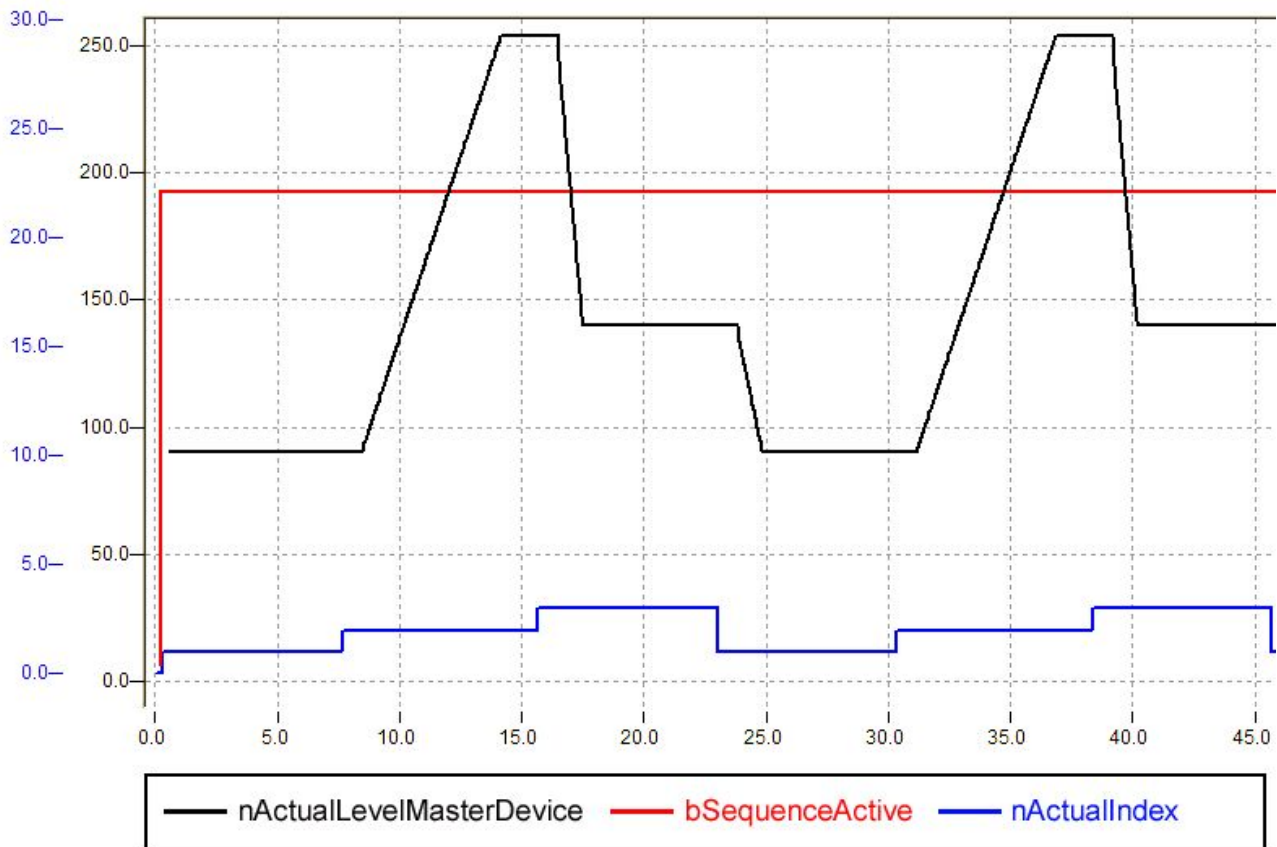


The function block FB_DALIV2Sequencer is used to implement light sequences with up to 50 interpolation points.

The core of this function block is a ramp block that drives over an adjustable time to individual brightness values defined in a table and then remains at this brightness value for a similarly definable time. After the dwell time the next value is then driven to. As already mentioned, the table *arrSequenceTable* consists of 50 entries with the values for *nTargetValue* (target value), *tRampTime* (time taken to reach the target value) and *tProlongTime* (dwell time at the target value). It is not absolutely necessary to use all 50 values. A 0 entry of all 3 values marks the end of a sequence. Beyond that it is possible using the *nStartIndex* input to have a light sequence begin at any desired place in the table. This allows several different light sequences to be programmed even within the 50 entries, the sequences being separated from one another by 0 entry elements:



Over the course of time sequence 1, for example, looks like the following (*nStartIndex*=1, *nOptions.bit0*=*TRUE*, see below for explanation):



Beyond that the function block can be switched "normally" on and off (On: maximum value of the lamps, Off: 0) and switched back and forth between "On" and "Off" using the *bToggle* input. However, none of the command inputs is active unless the *bEnable* input is *TRUE*. If it is reset to *FALSE*, no more commands are accepted and the light value retains its current state – even from a ramp.



As explained at the beginning, this function block is based on the [FB DALIV2Ramp](#) [► 42]. The ramp block tries to map the set ramp time as accurately as possible. Nevertheless it is necessary to query data from the DALI control gears both once and cyclically, which takes a different amount of time depending on the set PLC cycle time. Therefore inaccuracies in the ramp time cannot be ruled out.

Inputs

```
VAR_INPUT
  bEnable          : BOOL := TRUE;
  bOn              : BOOL;
  bOff             : BOOL;
  bToggle          : BOOL;
  bStart           : BOOL;
  nStartIndex      : USINT := 0;
  arrSequenceTable : ARRAY [1..nMaxSequenceValues] OF ST_DALIV2SequenceTable;
  nOptions         : DWORD := 0;
  nAddr            : BYTE := 0;
  eAddrType        : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nMasterDevAddr   : BYTE := 0;
  tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR
```

Name	Type	Description
bEnable	BOOL	The <i>bOn</i> , <i>bOff</i> , <i>bToggle</i> and <i>bStart</i> inputs are active as long as this input is <i>TRUE</i> . A negative state deactivates the inputs and resets the function block.
bOn	BOOL	A rising edge directly switches <i>nActualLevelMasterDevice</i> to the maximum value.
bOff	BOOL	A rising edge immediately switches <i>nActualLevelMasterDevice</i> to "0".

Name	Type	Description
bToggle	BOOL	Switches the light state back and forth respectively between On (maximum value) and Off (0).
bStart	BOOL	A positive edge starts a light sequence from the beginning defined under <i>nStartIndex</i> .
nStartIndex	USINT	see <i>bStart</i> .
arrSequenceTable		Light value table with the associated ramp and dwell times (see ST_DALIV2SequenceTable [► 466])
nOptions	DWORD	Parameterization input. The setting (or non-setting) of the individual bits of this variable of the type <i>DWORD</i> has the following effect:

Bit	Description
0	not set: The function block ceases its activity following the expiry of a sequence. A new positive edge at <i>bStart</i> would be necessary for a sequence restart. set: Following the expiry of a sequence, the function block automatically continues at the point defined at <i>nStartIndex</i> .
1..31	-- reserved for future options --

Name	Type	Description
nAddr	BYTE	Address of the single device for individual control or of the group for group control
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  nActualLevelMasterDev : BYTE;
  nActualIndex          : USINT;
  bLight                : BOOL;
  bSequenceActive       : BOOL;
  bBusy                 : BOOL;
  bError                 : BOOL;
  nErrorId              : UDINT;
END_VAR
```

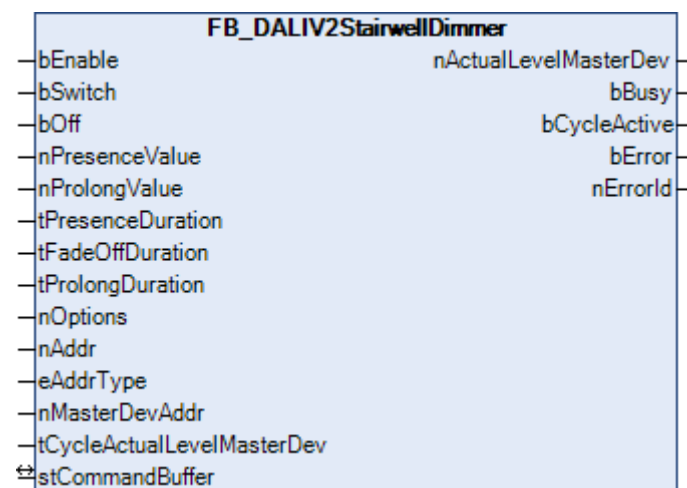
Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)

Name	Type	Description
nActualIndex	USINT	Reference to the current element in the sequence table. Once a sequence is finished (<i>bSequenceActive</i> = FALSE, see below), this output becomes "0".
bLight	BOOL	This output is set as long as <i>nActualLevelMasterDev</i> is greater than "0".
bSequenceActive	BOOL	On processing a sequence this output is set to <i>TRUE</i> .
bBusy	BOOL	This output is always active as long as the processing of a command (<i>bOn</i> , <i>bOff</i> , <i>bToggle</i> or ramp) is active.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.2.11 FB_DALIV2StairwellDimmer



The function block FB_DALIV2StairwellDimmer is used to control stairwell lighting.

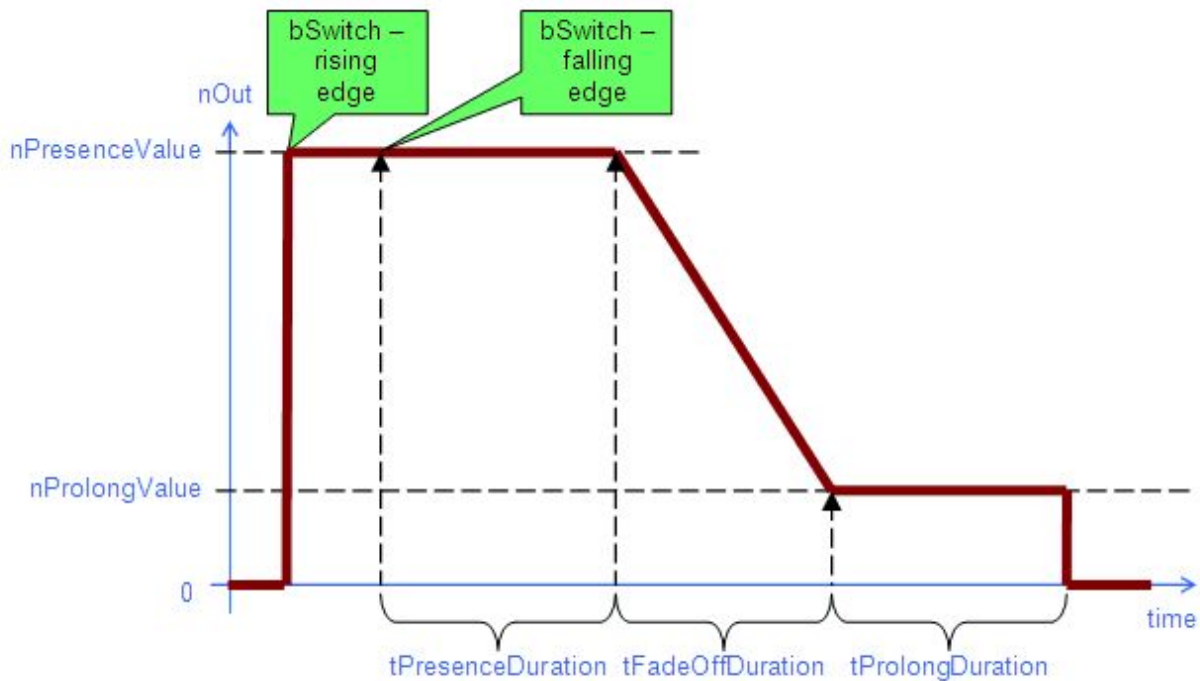
A rising edge at input *bSwitch* switches the light to the value *nPresenceValue*. A falling edge on *bSwitch* starts or restarts a timer with the runtime *tPresenceDuration*. On expiry of this timer the controlled lamps are dimmed within the time *tFadeTime* to the value *nProlongValue*. This value is maintained for the duration *tProlongDuration*. Following which the light is switched off. A positive edge at input *bOff* switches the light off immediately, another rising edge at input *bSwitch* switches the light on again at any time - even during the dimming and waiting times.

Each time the light is switched on, a check is carried out to ensure that the values *nPresenceValue* and *nProlongValue* are within the permissible limits (MIN LEVEL ... MAX LEVEL) of the master device. The value "0" is also allowed. It is also possible that *nPresenceValue* is smaller than *nProlongValue* or that both values are identical.

Comment on the *nMasterDevAddr* parameter

The DALI system provides facilities not just for controlling lamps individually, but also for addressing them as groups or through common commands. Because the individual devices can be members of a variety of groups, it can happen that, prior to the issue of a group or common control command, the individual lamps have different brightness levels. So that it is nevertheless possible to be clear whether the lamps now are to

be switched on or off, a master device is assigned to each group, whose state is followed by the other devices. It is not necessary to specify a master device if the function block is to be used to control a single lamp, $eAddrType = eAddrTypeShort$. In this case, the $nMasterDevAddr$ parameter has no significance.



Inputs

```

VAR_INPUT
  bEnable          : BOOL := TRUE;
  bSwitch          : BOOL;
  bOff             : BOOL;
  nPresenceValue   : BYTE;
  nProlongValue    : BYTE;
  tPresenceDuration : TIME := t#30s;
  tFadeOffDuration : TIME := t#10s;
  tProlongDuration  : TIME := t#20s;
  nOptions         : DWORD := 0;
  nAddr            : BYTE := 0;
  eAddrType        : E_DALIV2AddrType := eDALIV2AddrType Short;
  nMasterDevAddr   : BYTE;
  tCycleActualLevelMasterDev : TIME := t#0s;
END_VAR

```

Name	Type	Description
bEnable	BOOL	The inputs bOn and bOff are active as long as this input is TRUE. A negative state deactivates the inputs and resets the function block after processing the last necessary DALI commands. No further DALI commands are then output, apart from the cyclic querying of the brightness of the master device.
bSwitch	BOOL	With a rising edge: the controlled lamps are switched directly to <i>PresenceValue</i> . With a falling edge: start of the presence time (see diagram).
bOff	BOOL	Immediately switches off the controlled lamps.
nPresenceValue	BYTE	Value to which the controlled lamps are to be switched during the presence time. (Valid value range: 0 or <u>MIN LEVEL</u> [► 88] ... <u>MAX LEVEL</u> [► 88] -preset value: 254).
nProlongValue	BYTE	Value to which the controlled lamps are to be switched during the dwell time. (Valid value range: 0 or <u>MIN LEVEL</u> [► 88] ... <u>MAX LEVEL</u> [► 88] -preset value: 200).

Name	Type	Description
tPresenceDuration	TIME	Duration of the presence time for which the controlled lamps are switched to <i>nPresenceValue</i> after a falling edge at <i>bSwitch</i> . (Preset value: 30 seconds).
tFadeOffDuration	TIME	Time duration in which the brightness value is controlled from <i>nPresenceValue</i> to <i>nProlongValue</i> . (Preset value: 10 seconds).
tProlongDuration	TIME	Duration of the dwell time. (Preset value: 20 seconds)
nOptions	DWORD	Reserved for future developments.
nAddr	BYTE	Address of the single device for individual control or of the group for group control
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nMasterDevAddr	BYTE	The address of the master device (reference device) for group and common switching operations
tCycleActualLevelMasterDev	TIME	Cycle time required to read the current actual value in the background (see ACTUAL DIM LEVEL [► 88]). So that the dimming of the lamps is not disturbed, reading always has the lowest priority. If the value is set to 0, reading is prohibited.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    nActualLevelMasterDev : BYTE;
    bBusy                 : BOOL;
    bCycleActive          : BOOL;
    bError                : BOOL;
    nErrorId              : UDINT;
END_VAR
```

Name	Type	Description
nActualLevelMasterDev	BYTE	Current output value of the master device (always the respectively addressed device if <i>eAddrType</i> = <i>eAddrTypeShort</i>)
bBusy	BOOL	This output is always set when a change of light is active, i.e. on, off and ramp. Start and target value are irrelevant. This output would also be set in the case of a ramp, for example, from 100 to 100 in 10 s.
bCycleActive	BOOL	When the function block is activated, the output is set and remains active until the cycle has been completed or the lamps have been switched off.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

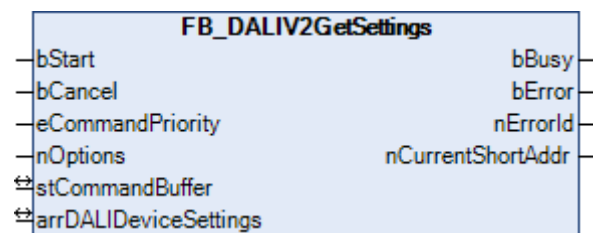
Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.3 Settings

Function blocks

Name	Description
FB_DALIV2GetSettings [► 52]	Function block for reading all device data of all control gears in a DALI line.
FB_DALIV2GetSettingsSingleDevice [► 54]	Function block for reading all device data of a control gear in a DALI line.
FB_DALIV2SetSettings [► 57]	Function block for setting all device data of all control gears in a DALI line.

4.1.1.1.3.1 FB_DALIV2GetSettings



This function block FB_DALIV2GetSettings reads the variables (MIN LEVEL, MAX LEVEL, FADE TIME, ...) of all control gears within a DALI line and saves them in a structure of type [ST_DALIV2DeviceSettings](#) [► 465].

Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. A check is first made as to whether a control gear is present at all. If this is the case, then the *bPresent* bit is set in the corresponding structure (see [ST_DALIV2DeviceSettings](#) [► 465]), after which the settings of the control gear are read out one by one and written in the associated variables in the structure. If it is found that a device is not available, the reading is skipped and work continues with the next device. The structure index here reflects the address of the device. In other words, data for the device with short address 0 is located at *arrDALIDeviceSettings*[0], and so on through to the device with short address 63 having its data at *arrDALIDeviceSettings*[63]. If a read error occurs when reading from a device, the corresponding bit in *nErrors* is set for the respective structure without the function block itself switching to error mode. The following table shows which bit is set in the variable *nErrors* when an error occurs during the reading of a variable from a control gear.

Bit	Error
0	An error occurred whilst attempting to seek the control gear.
1	Error whilst reading the variable ACTUAL DIM LEVEL [► 88].
2	Error whilst reading the variable POWER ON LEVEL [► 88].
3	Error whilst reading the variable SYSTEM FAILURE LEVEL [► 88].
4	Error whilst reading the variable MIN LEVEL [► 88].
5	Error whilst reading the variable MAX LEVEL [► 88].
6	Error whilst reading the variable FADE RATE [► 88].

Bit	Error
7	Error whilst reading the variable <u>FADE TIME</u> [► 88].
8	Error whilst reading the variable <u>RANDOM ADDRESS</u> [► 88].
9	Error whilst reading the variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88].
10	Error whilst reading the variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88].
11	Error whilst reading the variable <u>STATUS INFORMATION</u> [► 88].
12	Error whilst reading the variable <u>VERSION NUMBER</u> [► 88].
13	Error whilst reading the variable <u>DEVICE TYPE</u> [► 88].
14	Error whilst reading the variable <u>PHYSICAL MIN LEVEL</u> [► 88].



After processing the function block, the output *bBusy* changes from TRUE to FALSE. Processing this function block can take several seconds, depending on how many control gears are connected.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nOptions        : DWORD;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bCancel	BOOL	A positive edge at this input will disable the function block and hence abort the reading of the variables.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for reading the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_ACTUAL_DIM_LEVEL	The variable <u>ACTUAL DIM LEVEL</u> [► 88] is read.
DALIV2_OPTION_POWER_ON_LEVEL	The variable <u>POWER ON LEVEL</u> [► 88] is read.
DALIV2_OPTION_SYSTEM_FAILURE_LEVEL	The variable <u>SYSTEM FAILURE LEVEL</u> [► 88] is read.
DALIV2_OPTION_MIN_LEVEL	The variable <u>MIN LEVEL</u> [► 88] is read.
DALIV2_OPTION_MAX_LEVEL	The variable <u>MAX LEVEL</u> [► 88] is read.
DALIV2_OPTION_FADE_RATE_FADE_TIME	The variables <u>FADE RATE</u> [► 88] and <u>FADE TIME</u> [► 88] are read.
DALIV2_OPTION_RANDOM_ADDRESS	The variable <u>RANDOM ADDRESS</u> [► 88] is read.
DALIV2_OPTION_GROUPS	The variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88] are read.
DALIV2_OPTION_SCENE_LEVELS	The variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88] are read.
DALIV2_OPTION_STATUS_INFORMATION	The variable <u>STATUS INFORMATION</u> [► 88] is read.
DALIV2_OPTION_VERSION_NUMBER	The variable <u>VERSION NUMBER</u> [► 88] is read.
DALIV2_OPTION_DEVICE_TYPE	The variable <u>DEVICE TYPE</u> [► 88] is read.
DALIV2_OPTION_PHYSICAL_MIN_LEVEL	The variable <u>PHYSICAL MIN LEVEL</u> [► 88] is read.
DALIV2_OPTION_DONT_CLEAR_DEVICE_SETTINGS	The variable <i>arrDALIDeviceSettings</i> is not deleted before reading.

Constant	Description
DALIV2_OPTION_ALL	All variables are read.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer      : ST_DALIV2CommandBuffer;
    arrDALIDeviceSettings : ARRAY [0..63] OF ST_DALIV2DeviceSettings;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB KL6811Communication [► 77] (KL6811) or FB KL6821Communication [► 82] (KL6821).
arrDALIDeviceSettings	ARRAY OF ST_DALIV2DeviceSettings [► 465]	Reference to an array with 64 elements. The settings of each individual DALI control gear are stored in this variable.

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nCurrentShortAddr : BYTE;
END_VAR

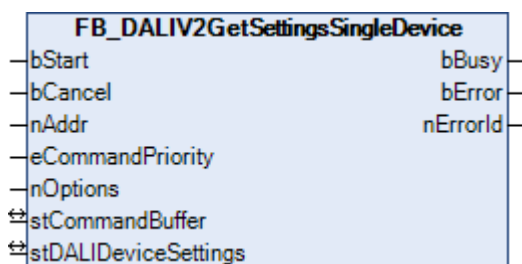
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nCurrentShortAddr	BYTE	Short address of the current control gear from which an attempt is being made to read the variables.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.3.2 FB_DALIV2GetSettingsSingleDevice



In contrast to the function block `FB_DALIV2GetSettings` [► 52], the function block `FB_DALIV2GetSettingsSingleDevice` reads the variables (MIN LEVEL, MAX LEVEL, FADE TIME, ...) from only one specific device and saves them in a structure of type `ST_DALIV2DeviceSettings` [► 465].

Applying a positive edge to the input `bStart` starts the function block, and the output `bBusy` goes TRUE. The settings of all control gears are then read sequentially and written into the respective variables of the structure. If a read error occurs when reading from a device, the element `nErrors` is set for the respective structure without the function block itself switching to error mode. The following table shows which bit is set in the variable `nErrors` when an error occurs during the reading of a variable from a control gear.

Bit	Error
0	An error occurred whilst attempting to seek the control gear.
1	Error whilst reading the variable <code>ACTUAL DIM LEVEL</code> [► 88].
2	Error whilst reading the variable <code>POWER ON LEVEL</code> [► 88].
3	Error whilst reading the variable <code>SYSTEM FAILURE LEVEL</code> [► 88].
4	Error whilst reading the variable <code>MIN LEVEL</code> [► 88].
5	Error whilst reading the variable <code>MAX LEVEL</code> [► 88].
6	Error whilst reading the variable <code>FADE RATE</code> [► 88].
7	Error whilst reading the variable <code>FADE TIME</code> [► 88].
8	Error whilst reading the variable <code>RANDOM ADDRESS</code> [► 88].
9	Error whilst reading the variables <code>GROUP 0-7</code> [► 88] and <code>GROUP 8-15</code> [► 88].
10	Error whilst reading the variables <code>SCENE 0</code> [► 88] to <code>SCENE 15</code> [► 88].
11	Error whilst reading the variable <code>STATUS INFORMATION</code> [► 88].
12	Error whilst reading the variable <code>VERSION NUMBER</code> [► 88].
13	Error whilst reading the variable <code>DEVICE TYPE</code> [► 88].
14	Error whilst reading the variable <code>PHYSICAL MIN LEVEL</code> [► 88].

After processing the function block, the output `bBusy` changes from TRUE to FALSE.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    nAddr           : BYTE;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nOptions        : DWORD;
END_VAR
```

Name	Type	Description
<code>bStart</code>	BOOL	The function block is activated by a positive edge at this input.
<code>bCancel</code>	BOOL	A positive edge at this input will disable the function block and hence abort the reading of the variables.
<code>nAddr</code>	BYTE	The address of the device whose values are to be read.
<code>eCommandPriority</code>	<code>E_DALIV2CommandPriority</code> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
<code>nOptions</code>	DWORD	Options for reading the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
<code>DALIV2_OPTION_ACTUAL_DIM_LEVEL</code>	The variable <code>ACTUAL DIM LEVEL</code> [► 88] is read.
<code>DALIV2_OPTION_POWER_ON_LEVEL</code>	The variable <code>POWER ON LEVEL</code> [► 88] is read.
<code>DALIV2_OPTION_SYSTEM_FAILURE_LEVEL</code>	The variable <code>SYSTEM FAILURE LEVEL</code> [► 88] is read.
<code>DALIV2_OPTION_MIN_LEVEL</code>	The variable <code>MIN LEVEL</code> [► 88] is read.

Constant	Description
DALIV2_OPTION_MAX_LEVEL	Die Variable <u>MAX LEVEL</u> [► 88] is read.
DALIV2_OPTION_FADE_RATE_FADE_TIME	The variables <u>FADE RATE</u> [► 88] und <u>FADE TIME</u> [► 88] are read.
DALIV2_OPTION_RANDOM_ADDRESS	The variable <u>RANDOM ADDRESS</u> [► 88] is read.
DALIV2_OPTION_GROUPS	The variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88] are read.
DALIV2_OPTION_SCENE_LEVELS	The variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88] are read.
DALIV2_OPTION_STATUS_INFORMATION	The variable <u>STATUS INFORMATION</u> [► 88] is read.
DALIV2_OPTION_VERSION_NUMBER	The variable <u>VERSION NUMBER</u> [► 88] is read.
DALIV2_OPTION_DEVICE_TYPE	The variable <u>DEVICE TYPE</u> [► 88] is read.
DALIV2_OPTION_PHYSICAL_MIN_LEVEL	The variable <u>PHYSICAL MIN LEVEL</u> [► 88] is read.
DALIV2_OPTION_DONT_CLEAR_DEVICE_SETTINGS	The variable <i>stDALIDeviceSettings</i> is not deleted before reading.
DALIV2_OPTION_ALL	All variables are read.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer      : ST_DALIV2CommandBuffer;
  stDALIDeviceSettings : ST_DALIV2DeviceSettings;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).
stDALIDeviceSettings	ST_DALIV2DeviceSettings [► 465]	Reference to a structure: The settings of the DALI control gear are stored in this variable.

Outputs

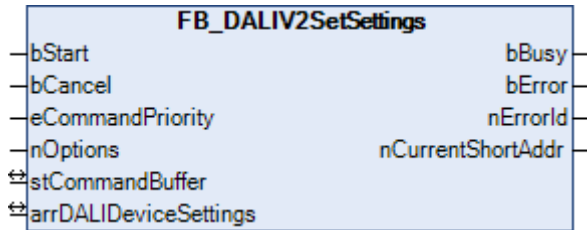
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.1.3.3 FB_DALIV2SetSettings



The function block FB_DALIV2SetSettings initializes the variables (MIN LEVEL, MAX LEVEL, FADE TIME, ...) of all control gears of a DALI line with the values that are stored in a structure of type ST_DALIV2DeviceSettings [► 465].

Applying a positive edge to the input *bStart* starts the function block, and the output *bBusy* goes TRUE. The system first checks whether the bit *bPresent* is set in the respective structure (see ST_DALIV2DeviceSettings [► 465]). If this is the case, all control gear variables that are not read-only are initialized with the respective values of the structure. The structure index here reflects the address of the control gear. In other words, data for the device with short address 0 is located at *arrDALIDeviceSettings[0]*, and so on through to the control gear with short address 63 having its data at *arrDALIDeviceSettings[63]*. If a write error occurs for a device, the element *nErrors* is set for the respective structure without the function block itself switching to error mode. The following table shows which bit is set in the variable *nErrors* when an error occurs during the writing of a variable to a control gear.

Bit	Error
2	Error whilst writing the variable <u>POWER ON LEVEL</u> [► 88].
3	Error whilst writing the variable <u>SYSTEM FAILURE LEVEL</u> [► 88].
4	Error whilst writing the variable <u>MIN LEVEL</u> [► 88].
5	Error whilst writing the variable <u>MAX LEVEL</u> [► 88].
6	Error whilst writing the variable <u>FADE RATE</u> [► 88].
7	Error whilst writing the variable <u>FADE TIME</u> [► 88].
9	Error whilst writing the variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88].
10	Error whilst writing the variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88].



After processing the function block, the output *bBusy* changes from TRUE to FALSE. Processing this function block can take several seconds, depending on how many control gears are connected.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  bCancel     : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nOptions    : DWORD;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bCancel	BOOL	A positive edge at this input will disable the function block and hence abort the initialization of the variable.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for writing the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_POWER_ON_LEVEL	The variable <u>POWER ON LEVEL</u> [► 88] is initialized.
DALIV2_OPTION_SYSTEM_FAILURE_LEVEL	The variable <u>SYSTEM FAILURE LEVEL</u> [► 88] is initialized.
DALIV2_OPTION_MIN_LEVEL	The variable <u>MIN LEVEL</u> [► 88] is initialized.
DALIV2_OPTION_MAX_LEVEL	The variable <u>MAX LEVEL</u> [► 88] is initialized.
DALIV2_OPTION_FADE_RATE	The variable <u>FADE RATE</u> [► 88] is initialized.
DALIV2_OPTION_FADE_TIME	The variable <u>FADE TIME</u> [► 88] is initialized.
DALIV2_OPTION_GROUPS	The variables <u>GROUP 0-7</u> [► 88] and <u>GROUP 8-15</u> [► 88] are initialized.
DALIV2_OPTION_SCENE_LEVELS	The variables <u>SCENE 0</u> [► 88] to <u>SCENE 15</u> [► 88] are initialized.
DALIV2_OPTION_ALL	All variables are initialized.
DALIV2_OPTION_PUSH_DALI_COMMANDS	The buffer containing the feedback messages from the control gears is not read. Hence, writing becomes faster, but errors are not recognized.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer      : ST_DALIV2CommandBuffer;
    arrDALIDeviceSettings : ARRAY [0..63] OF ST_DALIV2DeviceSettings;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).
arrDALIDeviceSettings	ARRAY OF <u>ST_DALIV2DeviceSettings</u> [► 465]	Reference to an array with 64 elements. The settings of each individual DALI control gear are stored in this variable.

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nCurrentShortAddr : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).
nCurrentShortAddr	BYTE	Short address of the current control gear from which an attempt is being made to read the variables.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

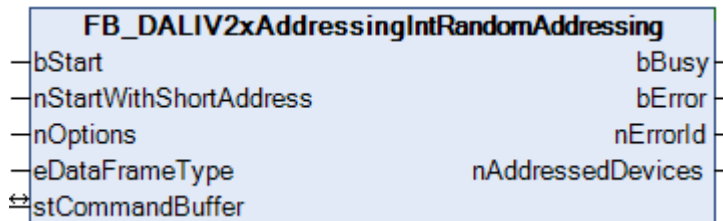
4.1.1.2 Part 103 (control units)

4.1.1.2.1 Addressing

Function blocks

Name	Description
FB_DALIV2xAddressingIntRandomaddressing [► 59]	Addresses the control units (sensors) at random. The internal addressing function of the Bus Terminal is used for this purpose.
FB_DALIV2xChangeAddressList [► 60]	This function block can be used to change the short addresses of several control units.

4.1.1.2.1.1 FB_DALIV2xAddressingIntRandomAddressing



The function block FB_DALIV2xAddressingIntRandomAddressing addresses the control devices (sensors) at random. The user has no influence on which control device is assigned which short address. Short addresses are allocated in ascending order.

Applying a positive edge to the *bStart* input starts the function block, and the output *bBusy* goes TRUE. The terminal now addresses all control devices independently. If all control devices are addressed, the output *bBusy* goes back to FALSE. The output variable *nAddressedDevices* provides information on how many control devices were assigned a short address. Depending on the number of connected control devices, processing of this function block can take several minutes.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nStartWithShortAddress : BYTE := 0;
    nOptions        : DWORD := DALIV2_OPTION_OPTICAL_FEEDBACK;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nStartWithShortAddress	BYTE	Short address assigned to the first control device (0 ... 63).
nOptions	DWORD	Options for addressing control devices (see table). The individual constants must be linked with OR operators.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Constant	Description
DALIV2_OPTION_COMPLETE_NEW_INSTALLATION	All control devices receive a new address, even those that already have a short address.
DALIV2_OPTION_OPTICAL_FEEDBACK	Newly addressed control devices receive the DALI command IDENTIFY DEVICE once the short address has been assigned.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer    : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

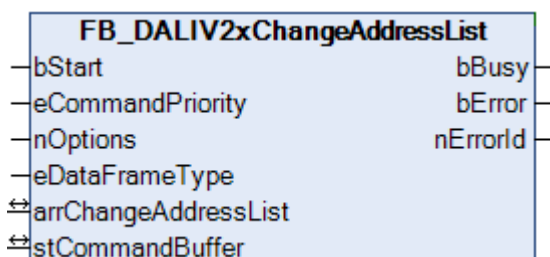
```
VAR_OUTPUT
    bBusy           : BOOL;
    bError          : BOOL;
    nErrorId        : UDINT;
    nAddressedDevices : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nAddressedDevices	BYTE	If addressing has been completed (<i>bBusy</i> is FALSE), then the number of addressed DALI control devices is shown at this output.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.1.2.1.2 FB_DALIV2xChangeAddressList



The function block FB_DALIV2xChangeAddressList can be used to change the short addresses of several DALI control devices.

A list of the control devices for which the short address is to be changed is transferred in the array *arrChangeAddressList* of type *ST_DALIV2ChangeAddressList* [► 464]. The list has 64 entries from 0 to 63. Each entry contains a variable *nOldAddress* and *nNewAddress* with which the address assignment is parameterized. The end of the list is programmed with a 255 entry at *nOldAddress*, so that the whole list does not necessarily have to be filled in. If this entry is missing, however, then all entries are accepted. When the function block is started (positive edge on *bStart*), the list end is first determined on the basis of the described entry and afterwards the valid list range is examined for the following false entries:

- Address entries > 63
- Double address entry on the original page *nOldAddress* (would not make sense)
- Double address entry on the target page *nNewAddress* (leads to double assignment of an address and, hence, to errors)

The function block then determines the internal long addresses of the DALI devices on the basis of the short addresses and enters them respectively to the parameters *nRandomAddressHigh*, *nRandomAddressMiddle* and *nRandomAddressLow* in the list. If an error occurs during these queries, this leads to a false entry for the respective device in the list element *nErrors* (see *ST_DALIV2ChangeAddressList* [► 464]). The further sequence in the function block now depends on the option *DALIV2_OPTION_SAFE_ADDRESSING* (input *nOptions*). If it is set, secure re-addressing takes place: first, all short addresses of the selected DALI devices are deleted. Then, all required new address status requests are sent to the DALI line.

Two cases are now possible:

- If a device responds to this request, the desired new address has already been assigned elsewhere. The previously “deleted” DALI devices are programmed with their old addresses and an error message is output.
- If no devices respond to this status query, then the previously “deleted” DALI devices are programmed with the desired new addresses.

The reprogramming is checked afterwards in both cases. If an error occurs during deletion, during the status query or during the reprogramming, this leads to a false entry for the respective device in the list element *nErrors* (see *ST_DALIV2ChangeAddressList* [► 464]).

If the option *DALIV2_OPTION_SAFE_ADDRESSING* (input *nOptions*) is **not** set, then the deletion of the short addresses and the status query for the presence of desired new addresses are omitted and the new addresses are programmed directly. This is possible because programming takes place via the long address determined beforehand. Reprogramming is not verified in this case.

The individual bits in the list element *nErrors* have the following meaning:

Bit	Error
0	Error whilst reading the high byte of the long address (<i>nRandomAddressHigh</i>).
1	Error whilst reading the middle byte of the long address (<i>nRandomAddressMiddle</i>).
2	Error whilst reading the low byte of the long address (<i>nRandomAddressLow</i>).
3	Error whilst deleting a short address.
4	Error whilst verifying a short address.
5	Error whilst programming a short address.
6	The value of the variable <i>nOldAddress</i> is equal to the value of the variable <i>nNewAddress</i> . The entry in the list is ignored (Tc2_DALI from v3.6.10.0).

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority [► 462] := eDALIV2CommandPriorityHigh;
    nOptions         : DWORD := 0;
    eDataFrameType   : E_DALIV2DataFrameType [► 463] := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [▶ 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for writing the variables (see table). The individual constants must be linked with OR operators.
eDataFrameType	E_DALIV2DataFrameType [▶ 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Constant	Description
DALIV2_OPTION_SAFE_ADDRESSING	Safe addressing: Old short addresses are deleted, the new ones are checked to see if they already exist and reprogramming is verified.

Inputs/outputs

```
VAR_IN_OUT
  arrChangeAddressList : ARRAY [0..63] OF ST_DALIV2ChangeAddressList;
  stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
arrChangeAddressList	ARRAY	A reference to the list containing the short addresses to be changed
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <i>FB_KL6821Communication</i> [▶ 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [▶ 438]).

Requirements

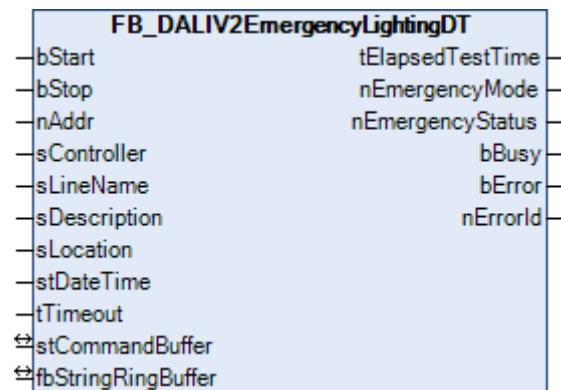
Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.1.3 Part 202 (emergency lighting)

Function blocks

Name	Description
FB_DALIV2EmergencyLightingDT [► 63]	This function block is for the duration test of a DALI emergency lighting device. At the end of the test the results are written over a FIFO buffer (IN-OUT variable <i>fbStringRingBuffer</i>), which in turn is read by the function block <i>FB_DALIV2FileLogging</i> into a file.
FB_DALIV2EmergencyLightingFT [► 65]	This function block is for the function test of a DALI emergency lighting device. At the end of the test the results are written over a FIFO buffer (IN-OUT variable <i>fbStringRingBuffer</i>), which in turn is read by the function block <i>FB_DALIV2FileLogging</i> into a file.
FB_DALIV2FileLogging [► 67]	This function block reads the FIFO buffers (IN-OUT variable <i>fbStringRingBuffer</i>) described in function blocks <i>FB_DALIV2EmergencyLightingFT</i> and <i>FB_DALIV2EmergencyLightingDT</i> and writes the contents to a log file.
FB_DALIV2GetSettingsType01 [► 68]	This function block reads the variables (BATTERY CHARGE, DURATION TEST RESULT, LAMP EMERGENCY TIME...) from all emergency lighting control gears in a DALI line and stores them in a structure.
FB_DALIV2SetSettingsType01 [► 71]	This function block initializes the variables (EMERGENCY LEVEL, FUNCTION TEST DELAY TIME, DURATION TEST DELAY TIME...) of all emergency lighting control gears in a DALI line with the values that are stored in a structure.

4.1.1.3.1 FB_DALIV2EmergencyLightingDT



The function block *FB_DALIV2EmergencyLightingDT* is used for the duration test of a DALI emergency lighting device. At the end of the test, the test results are written to a FIFO buffer (IN-OUT variable *fbStringRingBuffer*), which in turn is read into a file by the function block *FB_DALIV2FileLogging*. Events that hinder or interrupt the test are displayed in addition to the result message at the *bError* and *nErrorId* outputs.

The following events prevent the execution of a duration test:

- The device operates in automatic duration test mode, i.e. a test interval is programmed in the device.
- The device is currently executing a test or a test is automatically pending (function test or duration test).
- The emergency battery is not completely charged.
- The device is not in emergency standby ("normal mode") at the start of the test.

Events that interrupt an active duration test include the following:

- The device has not reached the duration test mode after the test has started.

- The test was not completed correctly, after the test start and a certain delay time the device is eventually neither in test mode nor (back) in emergency standby mode ("normal mode").
- A DALI command was incorrectly processed.
- The timeout has expired.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  bStop       : BOOL;
  nAddr       : BYTE;
  sController : STRING(20);
  sLineName   : STRING(10);
  sDescription : STRING(20);
  sLocation   : STRING(20);
  stDateTime  : TIMESTRUCT;
  tTimeout    : TIME := t#120m;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bStop	BOOL	If a duration test has been successfully started, the emergency mode [► 250] and the emergency status [► 250] are internally cyclically queried in order to assess when the test is completed and whether errors have occurred during the test. A positive edge at the input <i>bStop</i> aborts the duration test in precisely this phase and records a corresponding message in the log file. This is useful if it is only necessary to assess whether the emergency lighting runs for a certain time (until the time of stopping).
nAddr	BYTE	Address of the device to be tested
sController	STRING	Controller to which the DALI device belongs. Serves the description in the log file.
sLineName	STRING	Line to which the DALI device belongs. Serves the description in the log file.
sDescription	STRING	Further supplementary description of the device in the log file
sLocation	STRING	Description of the installation location
stDateTime	TIMESTRUCT	Input for current date and time
tTimeout	TIME	Time within which the test must be completed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
  fbStringRingBuffer : FB_MemRingBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).
fbStringRingBuffer	FB_MemRingBuffer	Reference to the FIFO buffer in which the log entries are stored.



It is not possible for the log function block to write data to a file as long as that file is open.

🔌 Outputs

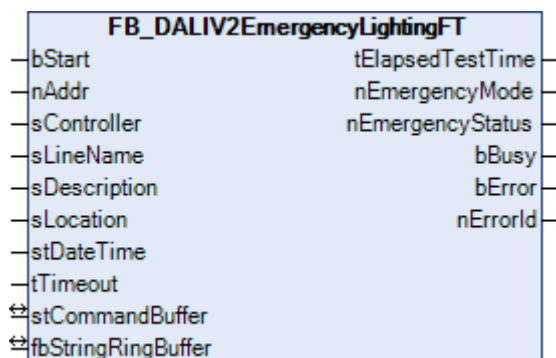
```
VAR_INPUT
    tElapsedTestTime : TIME;
    nEmergencyMode    : BYTE;
    nEmergencyStatus  : BYTE;
    bBusy             : BOOL;
    bError            : BOOL;
    nErrorId          : UDINT;
END_VAR
```

Name	Type	Description
tElapsedTestTime	TIME	Test duration. The time output is set to 0 by a rising edge at <i>bStart</i> and then counts up as long as the function block is active. With a falling edge at <i>bBusy</i> , the output retains its current value so that the test duration is still available even after the function block has been processed.
nEmergencyMode	BYTE	During the test, the presently internally queried <u>emergency mode</u> [► 250] of the DALI device is output at this output.
nEmergencyStatus	BYTE	the same applies to <u>emergency status</u> [► 250]
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE if an error, as described above, occurs during the execution of the test. This output is reset on restarting a test.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.3.2 FB_DALIV2EmergencyLightingFT



The function block FB_DALIV2EmergencyLightingFT is used for the function test of a DALI emergency lighting device. At the end of the test, the test results are written to a FIFO buffer (IN-OUT variable *fbStringRingBuffer*), which in turn is read into a file by the function block *FB_DALIV2FileLogging*. Events that hinder or interrupt the test are displayed in addition to the result message at the *bError* and *nErrorID* outputs.

The following events prevent the execution of a function test:

- The device operates in automatic function test mode, i.e. a test interval is programmed in the device.
- The device is currently executing a test or a test is automatically pending (function test or duration test).
- The device is not in emergency standby ("normal mode") at the start of the test.

The events that interrupt a function test that has begun include:

- The device has not reached the function test mode after the test has started.
- The test has not been completed correctly, i.e. the device is neither in test mode nor (back) in emergency standby mode ("normal mode") at some point after the test start and a certain delay time.
- A DALI command was incorrectly processed.
- The timeout has expired.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  sController : STRING(20);
  sLineName   : STRING(10);
  sDescription : STRING(20);
  sLocation   : STRING(20);
  stDateTime  : TIMESTRUCT;
  tTimeout    : TIME := t#120m;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	Address of the device to be tested
sController	STRING	Controller to which the DALI device belongs. Serves the description in the log file.
sLineName	STRING	Line to which the DALI device belongs. Serves the description in the log file.
sDescription	STRING	Further supplementary description of the device in the log file
sLocation	STRING	Description of the installation location
stDateTime	TIMESTRUCT	Input for current date and time
tTimeout	TIME	Time within which the test must be completed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
  fbStringRingBuffer : FB_MemRingBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).
fbStringRingBuffer	FB_MemRingBuffer	Reference to the FIFO buffer in which the log entries are stored.



It is not possible for the log function block to write data to a file as long as that file is open.

Outputs

```
VAR_OUTPUT
  tElapsedTestTime : TIME;
  nEmergencyMode   : BYTE;
  nEmergencyStatus : BYTE;
  bBusy            : BOOL;
```

```

bError      : BOOL;
nErrorId    : UDINT;
END_VAR

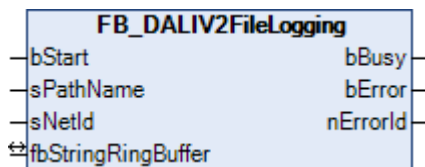
```

Name	Type	Description
tElapsedTestTime	TIME	Test duration. The time output is set to 0 by a rising edge at <i>bStart</i> and then counts up as long as the function block is active. With a falling edge at <i>bBusy</i> , the output retains its current value so that the test duration is still available even after the function block has been processed.
nEmergencyMode	BYTE	During the test, the presently internally queried <u>emergency mode</u> [► 250] of the DALI device is output at this output.
nEmergencyStatus	BYTE	the same applies to <u>emergency status</u> [► 250]
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE if an error, as described above, occurs during the execution of the test. This output is reset on restarting a test.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.3.3 FB_DALIV2FileLogging



The function block FB_DALIV2FileLogging reads the FIFO buffers written in the function blocks *FB_DALIV2EmergencyLightingFT* and *FB_DALIV2EmergencyLightingDT* (IN-OUT variable *fbStringRingBuffer*) and writes the contents to a log file.

Inputs

```

VAR_INPUT
bStart      : BOOL;
sPathName   : STRING;
sNetId      : STRING;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
sPathName	STRING	Contains the path and file name for the buffer file to be opened
sNetId	STRING	A string containing the network address of the TwinCAT computer where the buffer file is to be written or read can be specified here. For the local computer an empty string may be specified.



sPathName: The path can only point to the local file system on the computer. This means that network paths cannot be specified here.



Inputs/outputs

```
VAR_IN_OUT
    fbStringRingBuffer : FB_MemRingBuffer;
END_VAR
```

Name	Type	Description
fbStringRingBuffer	FB_MemRingBuffer	Reference to the FIFO buffer in which the log entries are stored.



Outputs

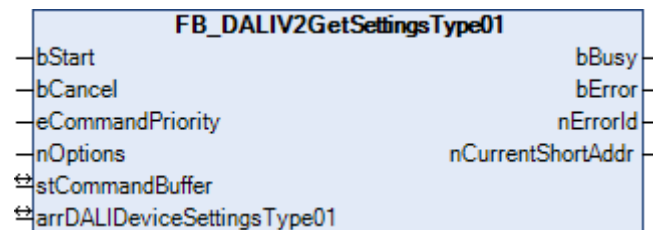
```
VAR_OUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated this output is set and remains set until the log buffer is cleared.
bError	BOOL	If an ADS error should occur during the transmission into the log file, then this output is set after the output <i>bBusy</i> has been reset.
nErrId	UDINT	Supplies the ADS error number or the command-specific error code (see error codes [► 438]) when the output <i>bError</i> is set.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.3.4 FB_DALIV2GetSettingsType01



The function block FB_DALIV2GetSettingsType01 reads the variables (BATTERY CHARGE, DURATION TEST RESULT, LAMP EMERGENCY TIME ...) from all emergency lighting control gears on a DALI line and saves them in a structure of type [ST_DALIV2DeviceSettingsType01](#) [► 465].

Applying a positive edge to the input *bStart* starts the function block, and the output *bBusy* goes TRUE. A check is first made as to whether a control gear is present at all. If this is the case, then the *bPresent* bit is set in the corresponding structure (see [ST_DALIV2DeviceSettingsType01](#) [► 465]), after which the settings of the control gear are read out one by one and written in the associated variables in the structure. If it is found that a device is not available, the reading is skipped and work continues with the next device. The structure index here reflects the address of the device. In other words, data for the device with short address 0 is located at *arrDALIDeviceSettingsType01[0]*, and so on through to the device with short address 63 having its data at *arrDALIDeviceSettingsType01[63]*. If a read error occurs when reading from a device, the

corresponding bit in *nErrors* is set for the respective structure without the function block itself switching to error mode. The following table shows which bit is set in the variable *nErrors* when an error occurs during the reading of a variable from a control gear.

Bit	Error
0	An error occurred whilst attempting to seek the control gear.
1	Error whilst reading the variable BATTERY CHARGE [► 250]
2	Error whilst reading the variable DURATION TEST RESULT [► 250]
3	Error whilst reading the variable LAMP EMERGENCY TIME [► 250]
4	Error whilst reading the variable LAMP TOTAL OPERATION TIME [► 250]
5	Error whilst reading the variable EMERGENCY LEVEL [► 250]
6	Error whilst reading the variable EMERGENCY MIN LEVEL [► 250]
7	Error whilst reading the variable EMERGENCY MAX LEVEL [► 250]
8	Error whilst reading the variable RATED DURATION [► 250]
9	Error whilst reading the variable FUNCTION TEST DELAY TIME [► 250]
10	Error whilst reading the variable DURATION TEST DELAY TIME [► 250]
11	Error whilst reading the variable FUNCTION TEST INTERVAL [► 250]
12	Error whilst reading the variable DURATION TEST INTERVAL [► 250]
13	Error whilst reading the variable TEST EXECUTION TIMEOUT [► 250]
14	Error whilst reading the variable PROLONG TIME [► 250]
15	Error whilst reading the variable EMERGENCY MODE [► 250]
16	Error whilst reading the variable FEATURES [► 250]
17	Error whilst reading the variable FAILURE STATUS [► 250]
18	Error whilst reading the variable EMERGENCY STATUS [► 250]

After processing the function block, the output *bBusy* changes from TRUE to FALSE. Processing this function block can take several seconds, depending on how many control gears are connected.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    bCancel     : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityHigh;
    nOptions    : DWORD;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bCancel	BOOL	A positive edge at this input will disable the function block and hence abort the reading of the variables.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for reading the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_BATTERY_CHARGE	The variable BATTERY CHARGE [► 250] is read.
DALIV2_OPTION_DURATION_TEST_RESULT	The variable DURATION TEST RESULT [► 250] is read.
DALIV2_OPTION_LAMP_EMERGENCY_TIME	The variable LAMP EMERGENCY TIME [► 250] is read.

Constant	Description
DALIV2_OPTION_LAMP_TOTAL_OPERATION_TIME	The variable <u>LAMP TOTAL OPERATION TIME</u> [► 250] is read.
DALIV2_OPTION_EMERGENCY_LEVEL	The variable <u>EMERGENCY LEVEL</u> [► 250] is read.
DALIV2_OPTION_EMERGENCY_MIN_LEVEL	The variable <u>EMERGENCY MIN LEVEL</u> [► 250] is read.
DALIV2_OPTION_EMERGENCY_MAX_LEVEL	The variable <u>EMERGENCY MAX LEVEL</u> [► 250] is read.
DALIV2_OPTION_RATED_DURATION	The variable <u>RATED DURATION</u> [► 250] is read.
DALIV2_OPTION_NEXT_FUNCTION_TEST	The variable <u>FUNCTION TEST DELAY TIME</u> [► 250] is read.
DALIV2_OPTION_NEXT_DURATION_TEST	The variable <u>DURATION TEST DELAY TIME</u> [► 250] is read.
DALIV2_OPTION_FUNCTION_TEST_INTERVAL	The variable <u>FUNCTION TEST INTERVAL</u> [► 250] is read.
DALIV2_OPTION_DURATION_TEST_INTERVAL	The variable <u>DURATION TEST INTERVAL</u> [► 250] is read.
DALIV2_OPTION_TEST_EXECUTION_TIMEOUT	The variable <u>TEST EXECUTION TIMEOUT</u> [► 250] is read.
DALIV2_OPTION_PROLONG_TIME	The variable <u>PROLONG TIME</u> [► 250] is read.
DALIV2_OPTION_EMERGENCY_MODE	The variable <u>EMERGENCY MODE</u> [► 250] is read.
DALIV2_OPTION_FEATURES	The variable <u>FEATURES</u> [► 250] is read.
DALIV2_OPTION_FAILURE_STATUS	The variable <u>FAILURE STATUS</u> [► 250] is read.
DALIV2_OPTION_EMERGENCY_STATUS	The variable <u>EMERGENCY STATUS</u> [► 250] is read.
DALIV2_OPTION_ALL	All variables are read.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer          : ST_DALIV2CommandBuffer;
    arrDALIDeviceSettingsType01 : ARRAY [0..63] OF ST_DALIV2DeviceSettingsType01;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).
arrDALIDeviceSettingsType01	ARRAY OF <u>ST_DALIV2DeviceSettingsType01</u> [► 465]	Reference to an array with 64 elements. The settings of each individual DALI control gear are stored in this variable.

Outputs

```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nCurrentShortAddr : BYTE;
END_VAR
```

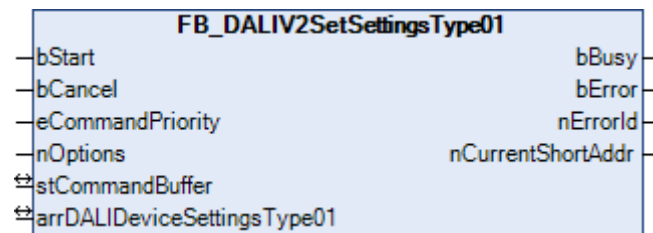
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nCurrentShortAddr	BYTE	Short address of the current control gear from which an attempt is being made to read the variables.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.1.3.5 FB_DALIV2SetSettingsType01



This function block initializes the variables (EMERGENCY LEVEL, FUNCTION TEST DELAY TIME, DURATION TEST DELAY TIME...) of all emergency lighting control gears in a DALI line with the values that are stored in a structure of type [ST_DALIV2DeviceSettingsType01](#) [► 465].

Applying a positive edge to the input *bStart* starts the function block, and the output *bBusy* goes TRUE. The system first checks whether the *bPresent* bit is set in the respective structure (see [ST_DALIV2DeviceSettingsType01](#) [► 465]). If this is the case, all control gear variables that are not read-only are initialized with the respective values of the structure. The structure index here reflects the address of the control gear. In other words, data for the device with short address 0 is located at *arrDALIDeviceSettingsType01[0]*, and so on through to the control gear with short address 63 having its data at *arrDALIDeviceSettingsType01[63]*. If a write error occurs for a device, the element *nErrors* is set for the respective structure without the function block itself switching to error mode. The following table shows which bit is set in the variable *nErrors* when an error occurs during the writing of a variable to a control gear.

Bit	Error
5	Error whilst writing the variable EMERGENCY LEVEL [► 250]
9	Error whilst writing the variable FUNCTION TEST DELAY TIME [► 250]
10	Error whilst writing the variable DURATION TEST DELAY TIME [► 250]
11	Error whilst writing the variable FUNCTION TEST INTERVAL [► 250]
12	Error whilst writing the variable DURATION TEST INTERVAL [► 250]
13	Error whilst writing the variable TEST EXECUTION TIMEOUT [► 250]
14	Error whilst writing the variable PROLONG TIME [► 250]

When the function block has been processed, the output *bBusy* changes from TRUE to FALSE. Processing this function block can take several seconds, depending on how many control gears are connected.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    bCancel         : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityHigh;
    nOptions        : DWORD;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
bCancel	BOOL	A positive edge at this input will disable the function block and hence abort the reading of the variables.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nOptions	DWORD	Options for reading the variables (see table). The individual constants must be linked with OR operators.

Constant	Description
DALIV2_OPTION_EMERGENCY_LEVEL	The variable <u>EMERGENCY LEVEL</u> [► 250] is initialized.
DALIV2_OPTION_NEXT_FUNCTION_TEST	The variable <u>FUNCTION TEST DELAY TIME</u> [► 250] is initialized.
DALIV2_OPTION_NEXT_DURATION_TEST	The variable <u>DURATION TEST DELAY TIME</u> [► 250] is initialized.
DALIV2_OPTION_FUNCTION_TEST_INTERVAL	The variable <u>FUNCTION TEST INTERVAL</u> [► 250] is initialized.
DALIV2_OPTION_DURATION_TEST_INTERVAL	The variable <u>DURATION TEST INTERVAL</u> [► 250] is initialized.
DALIV2_OPTION_TEST_EXECUTION_TIMEOUT	The variable <u>TEST EXECUTION TIMEOUT</u> [► 250] is initialized.
DALIV2_OPTION_PROLONG_TIME	The variable <u>PROLONG TIME</u> [► 250] is initialized.
DALIV2_OPTION_ALL	All variables are initialized.
DALIV2_OPTION_PUSH_DALI_COMMANDS	The buffer containing the feedback messages from the control gears is not read. Hence, writing becomes faster, but errors are not recognized.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer          : ST_DALIV2CommandBuffer;
    arrDALIDeviceSettingsType01 : ARRAY [0..63] OF ST_DALIV2DeviceSettingsType01;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).
arrDALIDeviceSettingsType01	ARRAY OF ST_DALIV2DeviceSettingsType01 [► 465]	Reference to an array with 64 elements. The settings of each individual DALI control gear are stored in this variable.

Outputs

```

VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nCurrentShortAddr : BYTE;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nCurrentShortAddr	BYTE	Short address of the current control gear from which an attempt is being made to read the variables.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

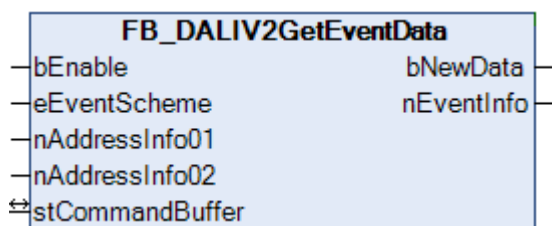
4.1.2 Low-Level commands

4.1.2.1 Base

Function blocks

Name	Description
FB_DALIV2GetEventData [► 73]	Filters out an event specified by the event scheme.
FB_DALIV2xSendDALICommand [► 75]	This function block is for the general sending of a DALI command, defined by command number and, if necessary, transfer parameter. Replaces the function block FB_DALIV2SendDALICommand .
FB_KL6811Communication [► 77]	Reads the DALI commands from the buffers sequentially and forwards them to the KL6811.
FB_KL6811ConfigNew [► 79]	This function block can be used to configure the KL6811.
FB_KL6821Communication [► 82]	Reads the DALI commands from the buffers sequentially and forwards them to the KL6821.
FB_KL6821Config [► 84]	This function block can be used to configure the KL6821.

4.1.2.1.1 FB_DALIV2GetEventData



The function block [FB_DALIV2GetEventData](#) filters out an event specified by the event scheme.

Each event sent by a DALI device contains two fields that provide information about the event source. These two fields are a combination of the short address, instance number, instance type, instance group or device group. The recipient of the event must know which address scheme is used to send the data.

For each event that is to be received and processed further, an instance of [FB_DALIV2GetEventData](#) must be created and configured with the correct event scheme.

Inputs

```
VAR_INPUT
  bEnable          : BOOL;
  eEventScheme     : E_DALIV2EventScheme := eDALIV2EventSchemeDeviceInstance;
  nAddressInfo01   : BYTE;
  nAddressInfo02   : BYTE;
END_VAR
```

Name	Type	Description
bEnable	BOOL	Enables the function block. If this input is set to FALSE, no further events are output.
eEventScheme	E_DALIV2EventScheme	The event scheme defines the address information required for filtering the desired event.
nAddressInfo01	BYTE	(see table below)
nAddressInfo02	BYTE	(see table below)

eEventScheme	nAddressInfo01	nAddressInfo02
eDALIV2EventSchemeInstance	Instance type (0-31)	Instance number (0-31)
eDALIV2EventSchemeDevice	Short address (0-63)	Instance type (0-31)
eDALIV2EventSchemeDeviceInstance	Short address (0-63)	Instance number (0-31)
eDALIV2EventSchemeDeviceGroup	Device group (0-31)	Instance type (0-31)
eDALIV2EventSchemeInstanceGroup	Instance group (0-31)	Instance type (0-31)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

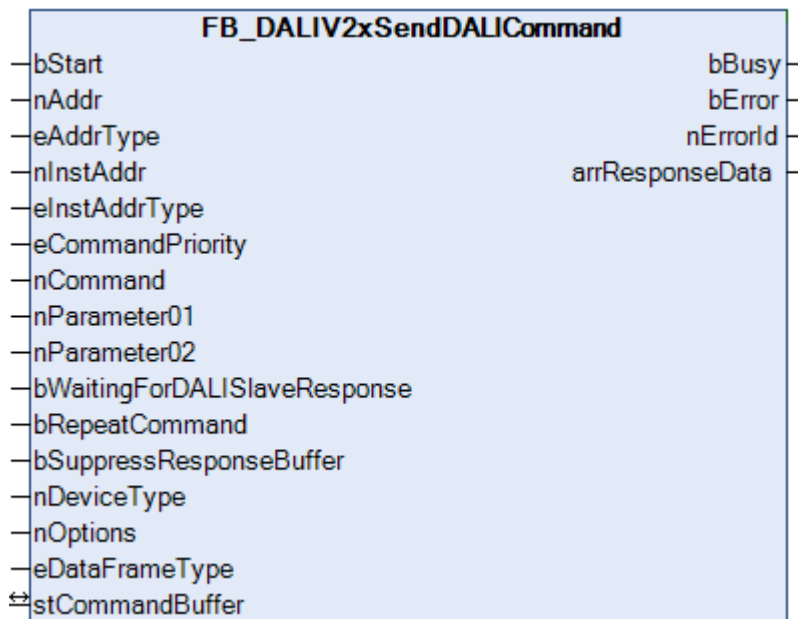
```
VAR_OUTPUT
  bNewData      : BOOL;
  nEventInfo    : WORD;
END_VAR
```

Name	Type	Description
bNewData	BOOL	If an event was received that corresponds to the event scheme and address information, this output is set to TRUE for one PLC cycle.
nEventInfo	WORD	If the output <i>bNewData</i> is TRUE, further information about the event can be found at this output. The exact meaning depends on the device type and is described in the respective Part 3xx of IEC 62386.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.1.2 FB_DALIV2xSendDALICommand



The function block FB_DALIV2xSendDALICommand is used for the general sending of a DALI command, defined by command number and - if necessary - transfer parameter. Moreover, it is possible to set whether the command is sent twice in succession and whether to wait for a response. The latter can be used, for example, to realize a fast sequence of step-up commands.

In contrast to the function block [FB_DALIV2SendDALICommand](#) [► 447], this function block is also able to control DALI control devices (sensors).

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nCommand        : INT := 0;
    nParameter01    : BYTE := 0;
    nParameter02    : DINT := 0;
    bWaitingForDALISlaveResponse : BOOL := FALSE;
    bRepeatCommand  : BOOL := FALSE;
    bSuppressResponseBuffer : BOOL := FALSE;
    nDeviceType     : BYTE := 0;
    nOptions        : DWORD := 0;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType16Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the device
eInstAddrType	E_DALIV2InstAddrType	Defines the meaning of the variable <i>nInstAddr</i> for addressing the instance (e.g. by instance number, instance type,...).
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nCommand	INT	Number of the DALI command to be sent

Name	Type	Description
nCommand01	BYTE	Parameter for the value transfer
nCommand02	DINT	Parameter for the value transfer
bWaitingForDALISlaveResponse	BOOL	If FALSE, the system does not wait for the response from the DALI device. Its application makes no sense in connection with any kind of query command.
bRepeatCommand	BOOL	Decides whether the command is to be sent twice in succession.
bSuppressResponseBuffer	BOOL	If TRUE, the internal buffer is not filled with the response from the function block FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).
nDeviceType	BYTE	Identifier for the device type (see table below)
nOptions	DWORD	Reserved for future developments.
eDataFrameType	E_DALIV2DataFrameType	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> , <i>eDALIV2DataFrameType16Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Identifiers for the device type

Value	Description
0	Standard device
1	Device for <u>emergency lighting</u> [► 248]
2	Device for <u>discharge lamps</u> [► 292]
3	Device for low-voltage halogen lamps
4	Device for dimming incandescent lamps
5	Device for converting digital signals into DC signals
6	Device for <u>light emitting diodes (LEDs)</u> [► 306]
7	Device for switching functions
8	Device for <u>controlling the color/color temperature</u> [► 336]
9	Sequencer

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    arrResponseData : ARRAY [0..3] OF BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
arrResponseData	ARRAY OF BYTE	The value received from the DALI device if a query command was invoked.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.1.3 FB_KL6811Communication



The function blocks for the DALI commands do not directly access the process image of the KL6811, but store the individual DALI commands in three different buffers. The function block FB_KL6811Communication sequentially reads the DALI commands from these three buffers and forwards the DALI commands to the KL6811. This prevents multiple function blocks accessing the KL6811 process image simultaneously. Each of these three buffers is processed with a different priority (high, medium or low). The parameter *eCommandPriority* [► 462], which is available for most function blocks, can be used to influence the priority with which the respective DALI command is processed by the function block FB_KL6811Communication.

All buffers in which the DALI commands are stored are associated with a variable of type ST_DALIV2CommandBuffer. For each KL6811 there is one instance of the function block FB_KL6811Communication and one variable of type ST_DALIV2CommandBuffer. If possible, the function block FB_KL6811Communication should be called in a separate, faster task.

The extent to which the buffers are utilized can be determined from the outputs of the function block. Three arrays are output for this in which each element (0, 1 or 2) represents one of the three buffers (high, middle or low). If you detect regular overflow for one of the three buffers, you should consider the following:

- How heavily are the individual PLC tasks utilized? The TwinCAT System Manager offers various appropriate utilities for the analysis.
- Try to reduce the cycle time of the task in which the function block FB_KL6811Communication is called. The value should not exceed 6 ms. Ideally it should be 2 ms.
- Check the cycle time of the PLC task in which the function blocks for the individual DALI commands are called. These values should be between 10 ms and 60 ms.
- If possible avoid polling (regular reading) of values. Only read values when they are actually required.
- Distribute the individual control gears evenly over several DALI lines. Overall data throughput is increased by the fact that several DALI lines are processed simultaneously during each PLC cycle.

Inputs

```
VAR_INPUT
    bResetMaximumDemandCounter : BOOL;
    bResetOverflowCounter       : BOOL;
END_VAR
```

Name	Type	Description
bResetMaximumDemandCounter	BOOL	A positive edge resets the stored value of the maximum command buffer utilization, <i>arrBufferMaximumDemandMeter</i> (0 - 100 %, see VAR_OUTPUT).
bResetOverflowCounter	BOOL	A positive edge resets the stored value of the number of command buffer overflows, <i>arrBufferOverflowCounter</i> (see VAR_OUTPUT).

Inputs/outputs

```
VAR_IN_OUT
    stDALIInData      : ST_KL6811InData;
    stDALIOutData     : ST_KL6811OutData;
    stCommandBuffer   : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stDALIInData	ST_KL6811InData [► 467]	Structure in the input process image of the KL6811. It is used for communication from the KL6811 to the PLC.
stDALIOutData	ST_KL6811OutData [► 467]	Structure in the output process image of the KL6811. It is used for communication from the PLC to the KL6811.
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy           : BOOL;
    bError          : BOOL;
    nErrorId        : BYTE;
    arrBufferDemandMeter : ARRAY [0..2] OF BYTE;
    arrBufferMaximumDemandMeter : ARRAY [0..2] OF BYTE;
    arrBufferOverflowCounter : ARRAY [0..2] OF UINT;
    bLineIsBusy     : BOOL;
    bLineIsInitialized : BOOL;
END_VAR
```

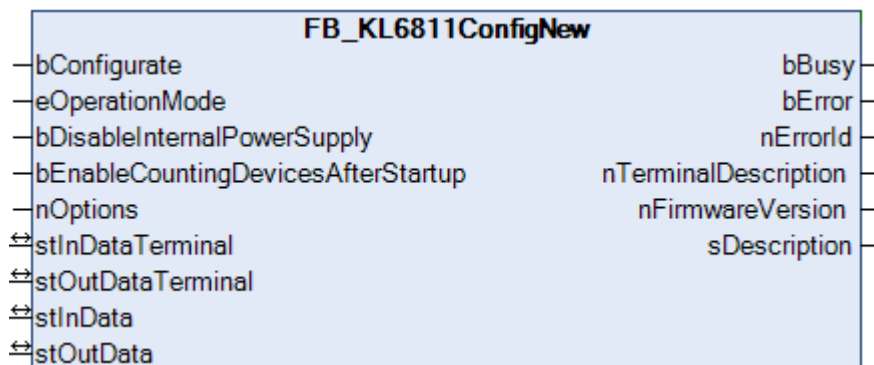
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
arrBufferDemandMeter	ARRAY	Demand of the respective buffer (0 - 100 %)
arrBufferMaximumDemandMeter	ARRAY	Previous maximum demand of the respective buffer (0 - 100 %)
arrBufferOverflowCounter	ARRAY	Number of buffer overflows so far

Name	Type	Description
bLineIsBusy	BOOL	This output is set as long as the function block FB_KL6811Communication [► 77] is active.
bLineIsInitialized	BOOL	If the function block is called up for the first time (e.g. when starting the controller), initialization is carried out. No DALI commands can be processed during this time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.1.4 FB_KL6811ConfigNew



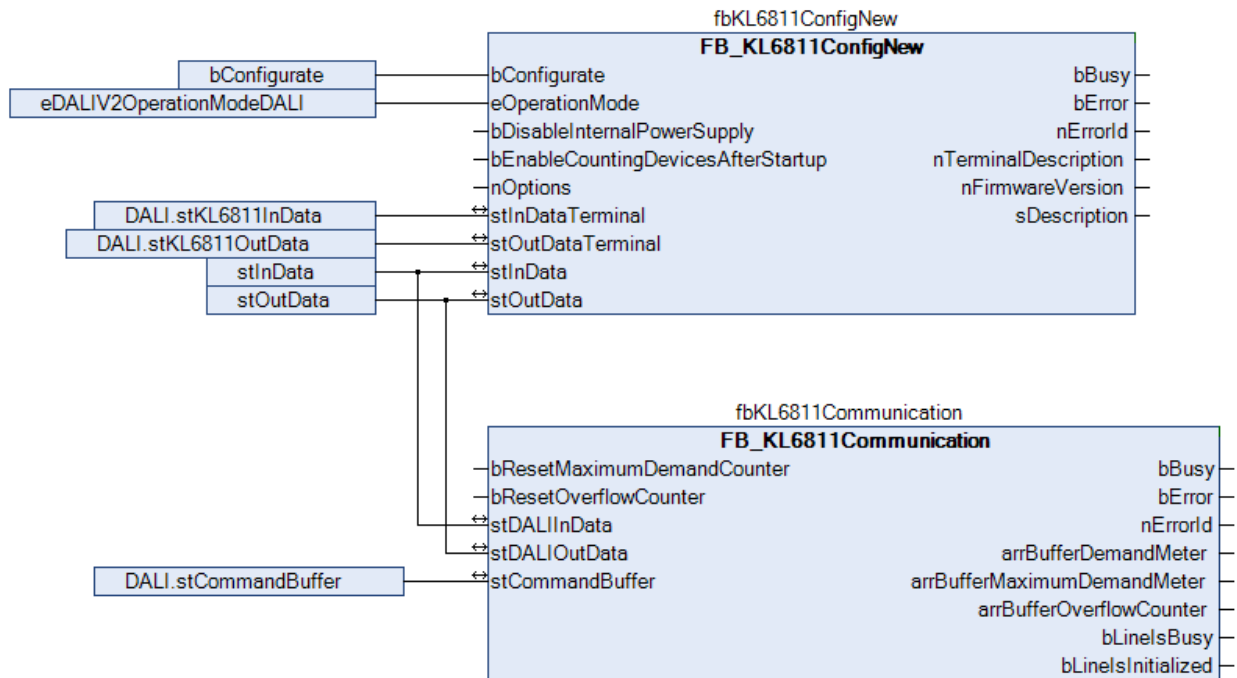
The function block FB_KL6811ConfigNew is used to configure the KL6811. The configuration is executed when the PLC program starts, or it can be triggered by a positive edge at the input *bConfigure*. The parameters are stored in the respective registers of the KL6811 in a fail-safe manner. In addition, some general information, such as the firmware version, is read from the KL6811.



This function block replaces FB_KL6811Config from library version 3.6.2.0

Example:

The function block is called in the same task as the function block [FB_KL6811Communication \[► 77\]](#).



The function block FB_KL6811ConfigNew is linked to the process image of the KL6811. Once the configuration is complete, the function block FB_KL6811CommunicationNew receives the process values of the KL6811. DALI commands cannot be sent during configuration.

Sample: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4515401995.zip

Inputs

```
VAR_INPUT
    bConfigure           : BOOL := FALSE;
    eOperationMode       : E_DALIV2OperationMode := eD_ALIV2OperationModeDALI;
    bDisableInternalPowerSupply : BOOL := FALSE;
    bEnableCountingDevicesAfterStartup : BOOL := FALSE;
    nOptions              : DWORD := 0;
END_VAR
```

Name	Type	Description
bConfigure	BOOL	Configuration of the bus terminal is started by a positive edge at this input.
eOperationMode	E_DALIV2OperationMode [► 464]	Defines the operation mode of the terminal (DALI or DSI). Corresponds to register 32, bits 12 to 15 of the bus terminal.
bDisableInternalPowerSupply	BOOL	If this input is TRUE, the internal DALI power supply of the terminal is disabled by the configuration. Corresponds to register 32, bit 3 of the bus terminal.
bEnableCountingDevicesAfterStartup	DWORD	If this input is TRUE, the number of DALI devices is counted when the terminal starts. Corresponds to register 32, bit 4 of the bus terminal.
nOptions	DWORD	Reserved for future developments.

Inputs/outputs

```
VAR_IN_OUT
    stInDataTerminal : ST_KL6811InData;
    stOutDataTerminal : ST_KL6811OutData;
    stInData          : ST_KL6811InData;
    stOutData          : ST_KL6811OutData;
END_VAR
```

Name	Type	Description
stInDataTerminal	ST_KL6811InData [► 467]	Reference to the structure for communication with the KL6811.
stOutDataTerminal	ST_KL6811OutData [► 467]	Reference to the structure for communication with the KL6811.
stInData	ST_KL6811InData [► 467]	Reference to the structure for communication with the function block FB_KL6811Communication [► 77].
stOutData	ST_KL6811OutData [► 467]	Reference to the structure for communication with the function block FB_KL6811Communication [► 77].

Outputs

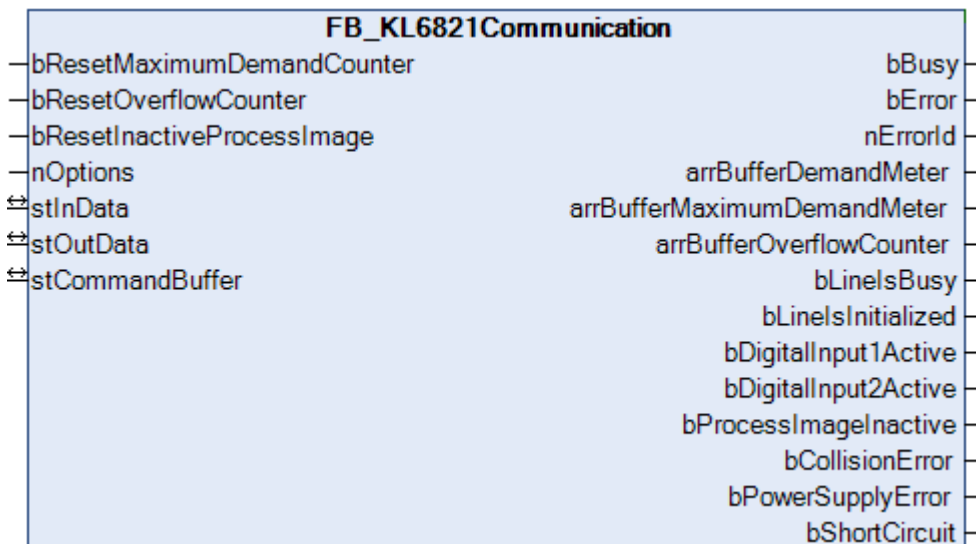
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nTerminalDescription : WORD;
  nFirmwareVersion : WORD;
  sDescription    : STRING;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nTerminalDescription	WORD	Contains the terminal name (e.g. 6811). Corresponds to register 8 of the bus terminal.
nFirmwareVersion	WORD	Contains the firmware version. Corresponds to register 9 of the bus terminal.
sDescription	STRING	Terminal name and firmware version as string (e.g. "Terminal KL6811 / Firmware 2H").

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.1.5 FB_KL6821Communication



The function blocks for the DALI commands do not directly access the process image of the DALI Bus Terminal, but store the individual DALI commands in three different buffers. The function block `FB_KL6821Communication` sequentially reads the DALI commands from these three buffers and forwards the DALI commands to the KL6821. This prevents several function block accessing the process image of the bus terminal at the same time. Each of these three buffers is processed with a different priority (high, medium or low). The parameter *eCommandPriority*, which is available for most function blocks, can be used by the PLC library user to influence the priority with which the respective DALI command is processed by the function block `FB_KL6821Communication`.

All buffers in which the DALI commands are stored are associated with a variable of type `ST_DALIV2CommandBuffer`. For each KL6821 there is one instance of the function block `FB_KL6821Communication` and one variable of type `ST_DALIV2CommandBuffer`. If possible, the function block `FB_KL6821Communication` should be called in a separate, faster task.

The extent to which the buffers are utilized can be determined from the outputs of the function block. Three arrays are output for this in which each element (0, 1 or 2) represents one of the three buffers (high, middle or low). If you find that one of the three buffers overflows on a regular basis, you should consider the following measures:

How heavily are the individual PLC tasks utilized? The TwinCAT System Manager offers various appropriate utilities for the analysis.

- Try to reduce the cycle time of the task in which the function block `FB_KL6821Communication` is called. The value should not exceed 6 ms. Ideally it should be 2 ms.
- Check the cycle time of the PLC task in which the function blocks for the individual DALI commands are called. This value should be between 10 ms and 60 ms.
- If possible avoid polling (regular reading) of values. Only read values when they are actually required.
- Distribute the individual control gears evenly over several DALI lines. Overall data throughput is increased by the fact that several DALI lines are processed simultaneously during each PLC cycle.

Inputs

```
VAR_INPUT
  bResetMaximumDemandCounter : BOOL;
  bResetOverflowCounter       : BOOL;
  bResetInactiveProcessImage  : BOOL;
  nOptions                    : DWORD := 0;
END_VAR
```

Name	Type	Description
bResetMaximumDemandCounter	BOOL	A positive edge resets the stored value of the maximum command buffer utilization, <code>arrBufferMaximumDemandMeter</code> (0 - 100 %, see <code>VAR_OUTPUT</code>).

Name	Type	Description
bResetOverflowCounter	BOOL	A positive edge resets the stored value of the number of command buffer overflows, arrBufferOverflowCounter (see VAR_OUTPUT).
bResetInactiveProcessImage	BOOL	A positive edge cancels the blocking of the process image of the terminal. The outputs <i>bProcessImageInactive</i> , <i>bDigitalInput1Active</i> and <i>bDigitalInput2Active</i> are again set to FALSE. The lock is activated when one of the two digital inputs on the terminal is activated.
nOptions	DWORD	Reserved for future developments.

Inputs/outputs

```

VAR_IN_OUT
    stInData          : ST_KL6821InData;
    stOutData         : ST_KL6821OutData;
    stCommandBuffer   : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stInData	ST_KL6821InData	Structure in the input process image of the KL6821. It is used for communication from the KL6821 to the PLC. When using FB_KL6821Config [► 84] , this structure is linked to the parameter <i>stInData</i> .
stOutData	ST_KL6821OutData	Structure in the output process image of the KL6821. It is used for communication from the PLC to the KL6821. When using FB_KL6821Config [► 84] , this structure is linked to the parameter <i>stOutData</i> .
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with the DALI function blocks.

Outputs

```

VAR_OUTPUT
    bBusy              : BOOL;
    bError             : BOOL;
    nErrorId           : UDINT;
    arrBufferDemandMeter : ARRAY [0..2] OF BYTE;
    arrBufferMaximumDemandMeter : ARRAY [0..2] OF BYTE;
    arrBufferOverflowCounter : ARRAY [0..2] OF UINT;
    bLineIsBusy        : BOOL;
    bLineIsInitialized : BOOL;
    bDigitalInput1Active : BOOL;
    bDigitalInput2Active : BOOL;
    bProcessImageInactive : BOOL;
    bCollisionError     : BOOL;
    bPowerSupplyError   : BOOL;
    bShortCircuit       : BOOL;
END_VAR

```

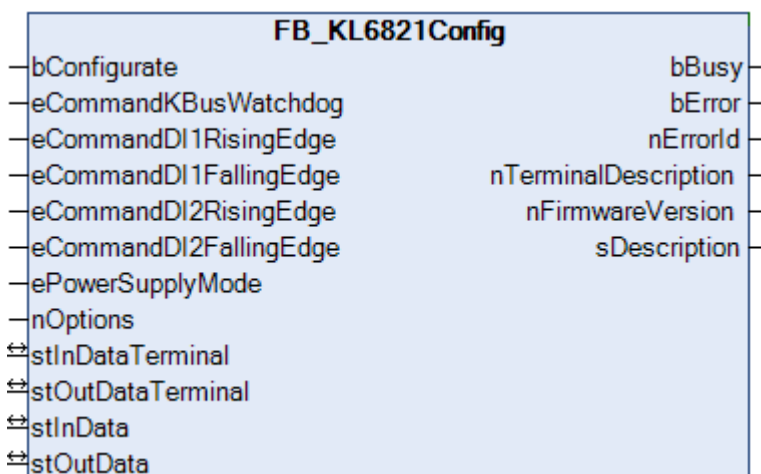
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
arrBufferDemandMeter	ARRAY OF BYTE	Demand of the respective buffer (0 - 100 %)

Name	Type	Description
arrBufferMaximumDemandMeter	ARRAY OF BYTE	Previous maximum demand of the respective buffer (0 - 100 %)
arrBufferOverflowCounter	ARRAY OF BYTE	Number of buffer overflows so far
bLineIsBusy	BOOL	The output is set as long as the function block FB_KL6821Communication [► 82] is active.
bLineIsInitialized	BOOL	If the function block is called for the first time (e.g. when starting the controller), initialization is carried out. No DALI commands can be processed during this time.
bDigitalInput1Active	BOOL	The digital input 1 on the terminal was or is actuated (see also terminal documentation). The output <i>bProcessImageInactive</i> is set and no further DALI commands can be processed by the controller.
bDigitalInput2Active	BOOL	The digital input 2 on the terminal was or is actuated (see also terminal documentation). The output <i>bProcessImageInactive</i> is set and no further DALI commands can be processed by the controller.
bProcessImageInactive	BOOL	One of the two digital inputs was actuated at the terminal. No further DALI commands can be processed by the controller. The blockage must be released again via the input <i>bResetInactiveProcessImage</i> .
bCollisionError	BOOL	A data collision on the DALI bus was detected while a command was sent.
bPowerSupplyError	BOOL	The KL6821 has detected an error in the internal DALI power supply.
bShortCircuit	BOOL	Short circuit on the DALI bus

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

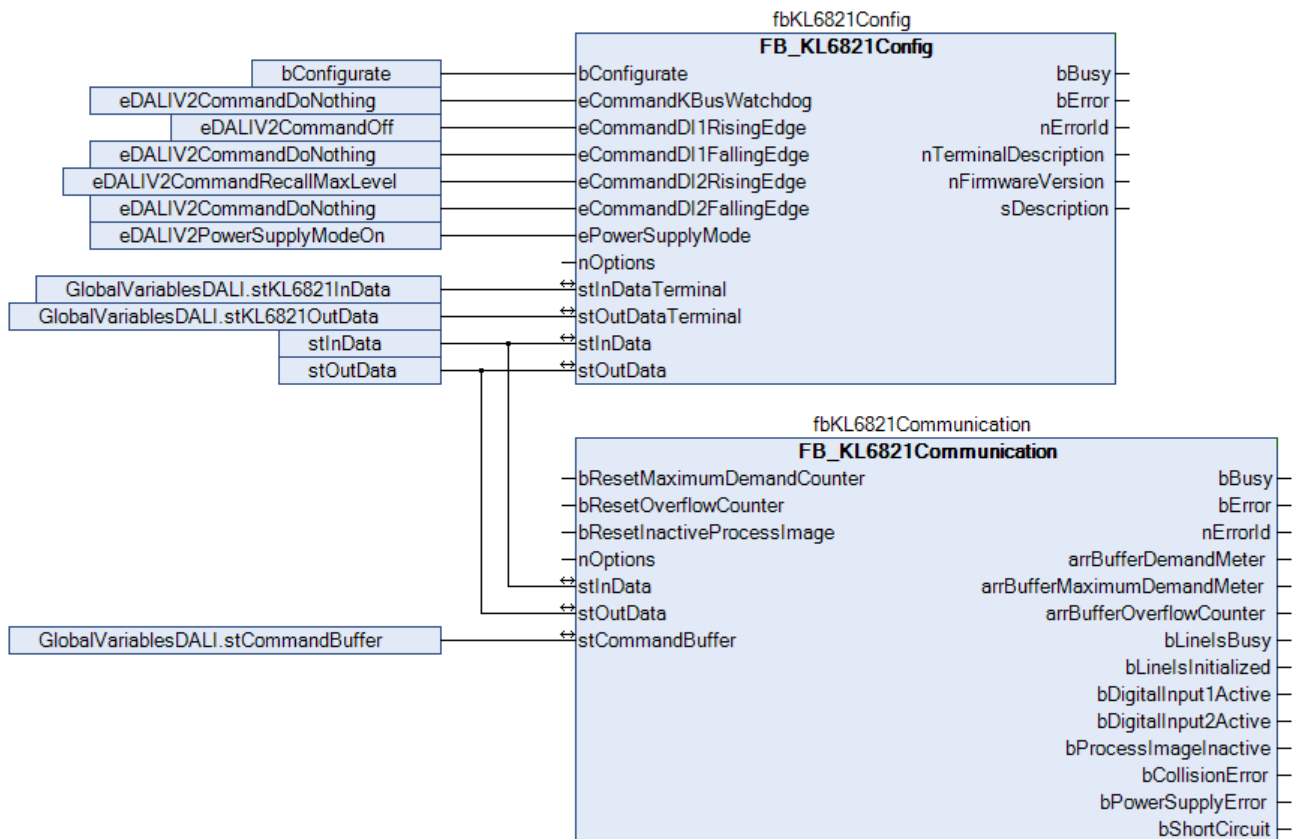
4.1.2.1.6 FB_KL6821Config



The function block **FB_KL6821Config** is used to configure the KL6821. The configuration is executed when the PLC program starts, or it can be triggered by a positive edge at the input *bConfigure*. The parameters are stored in the respective registers of the KL6821 in a fail-safe manner. In addition, some general information, such as the firmware version, is read from the KL6821.

Example

The function block is called in the same task as the function block **FB_KL6821Communication** [► 82].



The function block FB_KL6821Config is linked to the process image of the KL6821. Once the configuration is complete, the function block FB_KL6821Communication receives the process values of the KL6821. DALI commands cannot be sent during configuration.

Sample: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4420035723.zip

Inputs

```
VAR_INPUT
    bConfigure          : BOOL := FALSE;
    eCommandKBusWatchdog : E_DALIV2ConfigurationCommands := eDALIV2CommandDoNothing;
    eCommandDI1RisingEdge : E_DALIV2ConfigurationCommands := eDALIV2CommandOff;
    eCommandDI1FallingEdge : E_DALIV2ConfigurationCommands := eDALIV2CommandDoNothing;
    eCommandDI2RisingEdge : E_DALIV2ConfigurationCommands := eDALIV2CommandRecallMaxLevel;
    eCommandDI2FallingEdge : E_DALIV2ConfigurationCommands := eDALIV2CommandDoNothing;
    ePowerSupplyMode      : E_DALIV2PowerSupplyMode := eDALIV2PowerSupplyModeOn;
    nOptions               : DWORD := 0;
END_VAR
```

Name	Type	Description
bConfigure	BOOL	Configuration of the bus terminal is started by a positive edge at this input.
eCommandKBusWatchdog	E_DALIV2ConfigurationCommands ▶ 462	Defines the DALI command that is sent as soon as the bus terminal is no longer addressed via the K-bus.
eCommandDI1RisingEdge	E_DALIV2ConfigurationCommands ▶ 462	Defines the DALI command that is sent as soon as a rising edge is detected at input 1 of the bus terminal.
eCommandDI1FallingEdge	E_DALIV2ConfigurationCommands ▶ 462	Defines the DALI command that is sent as soon as a falling edge is detected at input 1 of the bus terminal.
eCommandDI2RisingEdge	E_DALIV2ConfigurationCommands ▶ 462	Defines the DALI command that is sent as soon as a rising edge is detected at input 2 of the bus terminal.
eCommandDI2FallingEdge	E_DALIV2ConfigurationCommands ▶ 462	Defines the DALI command that is sent as soon as a falling edge is detected at input 2 of the bus terminal.

Name	Type	Description
ePowerSupplyMode	E_DALIV2PowerSupplyMode [► 464]	Defines the operation mode of the internal DALI power supply.
nOptions	DWORD	Reserved for future developments.

Inputs/outputs

```
VAR_IN_OUT
    stInDataTerminal      : ST_KL6821InData;
    stOutDataTerminal     : ST_KL6821OutData;
    stInData              : ST_KL6821InData;
    stOutData             : ST_KL6821OutData;
END_VAR
```

Name	Type	Description
stInDataTerminal	ST_KL6821InData [► 467]	Reference to the structure for communication with the KL6821
stOutDataTerminal	ST_KL6821InData [► 467]	Reference to the structure for communication with the KL6821
stInData	ST_KL6821InData [► 467]	Reference to the internal structure for communication with the function block FB_KL6821Communication [► 82]
stOutData	ST_KL6821InData [► 467]	Reference to the internal structure for communication with the function block FB_KL6821Communication [► 82]

Outputs

```
VAR_OUTPUT
    bBusy                : BOOL;
    bError               : BOOL;
    nErrorId             : UDINT;
    nTerminalDescription : WORD;
    nFirmwareVersion     : WORD;
    sDescription         : STRING;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nTerminalDescription	WORD	Contains the terminal name (e.g. 6821). Corresponds to register 8 of the bus terminal.
nFirmwareVersion	WORD	Contains the firmware version. Corresponds to register 9 of the bus terminal.
sDescription	STRING	Terminal name and firmware version as string (e.g. "Terminal KL6821 / Firmware 2H").

Requirements

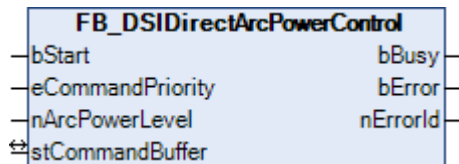
Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.2 DSI

Function blocks

Name	Description
FB_DSIDirectArcPowerControl [► 87]	Sends the control value to the DSI lamps via the KL6811.

4.1.2.2.1 FB_DSIDirectArcPowerControl



The parameter *nArcPowerLevel* specifies the brightness to which the lamp is switched.

nArcPowerLevel	Comment
0	Lamp is switched off
1	Lamp is switched to the minimum brightness
255	Lamp is switched to the maximum brightness

Control gears with a DSI interface do not have a short address. All the control gears on a DSI line receive the same value.



The KL6811 must be switched to DSI mode. Details for this can be found in the operating instructions for the [KL6811](#).

DSI control gears and DALI control gears cannot be mixed on a line. However, it is possible to operate several KL6811s on one controller, each in different operation modes (DSI/DALI).

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nArcPowerLevel : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nArcPowerLevel	BYTE	Lamp power value (0 ... 255)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77].

🚀 Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3 Part 102 (control gears)

4.1.2.3.1 Variables

Every DALI control gear has a certain number of variables (parameters) from which it is possible to read a variety of information or to modify individual parameters.

Name	Default value	Reset value	Scope	Size	Comment
ACTUAL DIM LEVEL [► 89]	?	254	0, MIN LEVEL ... MAX LEVEL	1 byte	
POWER ON LEVEL [► 89]	254	254	1 ... 254	1 byte	
SYSTEM FAILURE LEVEL [► 89]	254	254	0 ... 255	1 byte	
MIN LEVEL [► 89]	PHYSICAL MIN LEVEL	PHYSICAL MIN LEVEL	PHYSICAL MIN LEVEL ... MAX LEVEL	1 byte	
MAX LEVEL [► 89]	254	254	MIN LEVEL ... 254	1 byte	
FADE RATE [► 89]	7	7	1 ... 15	1 byte	
FADE TIME [► 90]	0	0	0 ... 15	1 byte	
SHORT ADDRESS [► 91]	255	No change	0 ... 63, 255	1 byte	
SEARCH ADDRESS [► 91]	FF FF FF	FF FF FF	00 00 00 ... FF FF FF	3 bytes	
RANDOM ADDRESS [► 91]	FF FF FF	FF FF FF	00 00 00 ... FF FF FF	3 bytes	

Name	Default value	Reset value	Scope	Size	Comment
GROUP 0-7 [► 91]	0	0	0 ... 255	1 byte	
GROUP 8-15 [► 91]	0	0	0 ... 255	1 byte	
SCENE 0 [► 91]	255	255	0 ... 255	1 byte	
...	...	...	...	...	
SCENE 15 [► 91]	255	255	0 ... 255	1 byte	
STATUS INFORMATION [► 91]	???? ?????	0?10 0???	0 ... 255	1 byte	read only
VERSION NUMBER [► 92]	Manufacturer dependent	Manufacturer dependent	0 ... 255	1 byte	read only
DEVICE TYPE [► 92]	Manufacturer dependent	Manufacturer dependent	0 ... 255	1 byte	read only
PHYSICAL MIN LEVEL [► 92]	Manufacturer dependent	Manufacturer dependent	1 ... 254	1 byte	read only

?: undetermined

ACTUAL DIM LEVEL

This variable contains the current power applied to the lamp.

The function block [FB_DALIV2QueryActualLevel \[► 128\]](#) can be used to read the value.

POWER ON LEVEL

When power is supplied to the control gear the lamp is controlled with the power value stored in the variable POWER ON LEVEL. This assumes that the DALI bus has already been supplied with power and is idle. The range of POWER ON LEVEL is limited by the two variables MIN LEVEL and MAX LEVEL.

The variable can be read with the function block [FB_DALIV2QueryPowerOnLevel \[► 150\]](#) and written with the function block [FB_DALIV2StoreDTRAsPowerOnLevel \[► 455\]](#).

SYSTEM FAILURE LEVEL

If an error occurs on the DALI bus (the open-circuit voltage remains below the specified level for longer than 500 ms) then the lamp is controlled with the power value from the variable SYSTEM FAILURE LEVEL. If the variable contains 255 (mask) the lamp power will not change. The value range is limited by MIN LEVEL and MAX LEVEL.

The variable can be read with the function block [FB_DALIV2QuerySystemFailureLevel \[► 159\]](#) and written with the function block [FB_DALIV2StoreDTRAsSystemFailureLevel \[► 459\]](#).

MIN LEVEL / MAX LEVEL

The ballast internally restricts the value of the output power to the lamp by means of the MIN LEVEL and MAX LEVEL variables. The exceptions to this are power values of 0 (off) and 255 (mask).

FADE RATE

The FADE RATE specifies the rate at which changes are made (in steps per second) in the value of the lamp's power. This variable has an effect on the commands [FB_DALIV2Up \[► 126\]](#) and [FB_DALIV2Down \[► 114\]](#). The absolute fade rate is not entered directly, but it is calculated according to the following formula:

$$T = \frac{506}{\sqrt{2^n}}$$

T = absolute fade rate

n = value that is stored in the FADE RATE variable

The following values result:

n	absolute fade rate
0	not permitted
1	357.796 steps/s
2	253.000 steps/s
3	178.898 steps/s
4	126.500 steps/s
5	89.449 steps/s
6	63.250 steps/s
7	44.725 steps/s
8	31.625 steps/s
9	22.362 steps/s
10	15.813 steps/s
11	11.181 steps/s
12	7.906 steps/s
13	5.591 steps/s
14	3.953 steps/s
15	2.795 steps/s

FADE TIME

The FADE TIME specifies the time allowed for the current lamp power to be changed to the requested value. In the case of a lamp that is switched off, the pre-heating and ignition time is not included in the fade time. The function blocks `FB_DALIV2DirectArcPowerControl` [► 113] and `FB_DALIV2GoToScene` [► 116] are affected. The absolute fade time is not entered directly, but it is calculated according to the following formula:

$$T = \frac{1}{2} \sqrt{2^n}$$

T = absolute fade time

n = value that is stored in the FADE TIME variable

The following values result:

n	absolute fade time
0	< 0.707 s
1	0.707 s
2	1.000 s
3	1.414 s
4	2.000 s
5	2.828 s
6	4.000 s
7	5.657 s
8	8.000 s
9	11.314 s
10	16.000 s
11	22.627 s

n	absolute fade time
12	32.000 s
13	45.255 s
14	64.000 s
15	90.510 s

SHORT ADDRESS

The short address is stored in this variable. A valid short address lies in the range between 0 and 63. The short address is regarded as having been deleted if 255 is written to the variable. The short address can be set with the function block [FB_DALIV2StoreDTRAsShortAddress](#) [► 458]. Calling the function block [FB_DALIV2QueryMissingShortAddress](#) [► 146] queries whether a control gear still does not have a short address.

SEARCH ADDRESS

The search address is only needed when assigning short addresses.

RANDOM ADDRESS

The random address, also called the long address, is specified by the manufacturer when the control gears are supplied. The 3-byte random address can be read using the function block [FB_DALIV2QueryRandomAddress](#) [► 151].

GROUP 0-7 / GROUP 8-15

16 groups exist within a DALI network. Each control gear can belong to one, several or no group. Commands that are to be sent to a group have an effect on all the control gears that belong to that particular group. The function block [FB_DALIV2QueryGroups](#) [► 136] reads the two 8-bit variables and combines them into a 16-bit value. Each bit indicates whether the control gear belongs to a particular group.

SCENE 0-15

Each DALI control gear can store lamp power values for 16 different scenes. There is a value of the lamp power for every scene. If the command for calling up a scene ([FB_DALIV2GoToScene](#) [► 116]) is sent to one device, a group, or to all the devices (broadcast), then each of the affected lamps is set to the saved value. The output is limited by the values of MAX LEVEL, MIN LEVEL and PHYSICAL MIN LEVEL.

STATUS INFORMATION

The status information contains the most important items describing the status of a control gear. The 8-bit value can be read with the function block [FB_DALIV2QueryStatus](#) [► 158]. The meaning of the individual bits is defined as follows:

Bit	Description
0	Status of the control gear. 0: OK.
1	Lamp failure. 0: OK.
2	Lamp power on. 0: OFF.
3	Limit value error. 0: the most recently requested lamp power was either between MIN LEVEL and MAX LEVEL or was OFF.
4	Fading completed: 0: fading finished. 1: fading active.
5	Reset status. 0: no.
6	Short address missing. 0: no.
7	Power supply fault. 0: No. A reset or a lamp power control command has been received since the last switch-on.

VERSION NUMBER

The version number corresponds to the version number of the IEC standard in accordance with which the ballast was developed and manufactured. The version number can only be read, and is specified by the manufacturer of the ballasts. The major version (*nMajorVersion*) and the minor version (*nMinorVersion*) can each have a value in the range from 0 to 15 (4 bits).

DEVICE TYPE

The value can be read with the function block `FB_DALIV2QueryDeviceType` [► 134]. The following device types are defined according to the IEC 62386 standard:

Value	Description
0	Standard device
1	Device for emergency lighting.
2	Device for discharge lamps.
3	Device for low-voltage halogen lamps.
4	Device for dimming incandescent lamps.
5	Device for converting digital signals into DC signals.
6	Device for light emitting diodes (LEDs).

PHYSICAL MIN LEVEL

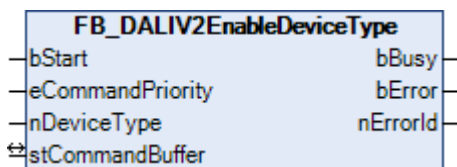
The lowest physically possible lamp power level is stored by the manufacturer in the variable `PHYSICAL MIN LEVEL`. The value can only be read, for which the function block `FB_DALIV2QueryPhysicalMinimumLevel` [► 147] is used.

4.1.2.3.2 Application-related expansion commands

Function blocks

Name	Description
<code>FB_DALIV2EnableDeviceType</code> [► 92]	Switching to application-related expansion command.
<code>FB_DALIV2QueryExtendedVersionNumber</code> [► 94]	The <code>EXTENDED VERSION NUMBER</code> [► 250] variable is read from the control gear.
<code>FB_DALIV2StartIdentification</code> [► 95]	Starts a 10-second identification procedure of the control gear.

4.1.2.3.2.1 `FB_DALIV2EnableDeviceType`



This command must be sent every time prior to an application extended command. As a result, only those control gears that belong to the corresponding `DEVICE TYPE` [► 92] respond. The command does not have to be used for device type 0. The following device types are defined according to the IEC 62386 standard:

Value	Description
0	Standard device
1	Device for <u>emergency lighting</u> [► 248]
2	Device for <u>discharge lamps</u> [► 292]
3	Device for low-voltage halogen lamps
4	Device for dimming incandescent lamps

Value	Description
5	Device for converting digital signals into DC signals
6	Device for light emitting diodes (LEDs) [► 306]
7	Device for switching functions
8	Device for controlling the color/color temperature [► 336]
9	Sequencer

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDeviceType  : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeviceType	BYTE	Identifier for the device type (see table above).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

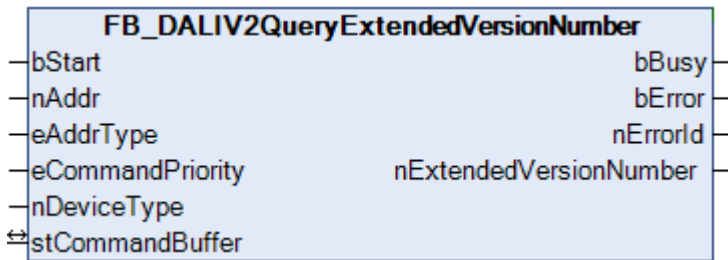
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.2.2 FB_DALIV2QueryExtendedVersionnumber



The variable EXTENDED VERSION NUMBER [► 254] is read from the control gear.

This command belongs to the application extended commands. These only work if they are preceded by the command *Enable Device Type*, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The Device Type to be activated can be set at the *nDeviceType* input.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDeviceType     : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeviceType	BYTE	Identifier for the device type (see table under <u>FB_DALIV2EnableDeviceType</u> [► 92])

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nExtendedVersionNumber : BYTE;
END_VAR

```

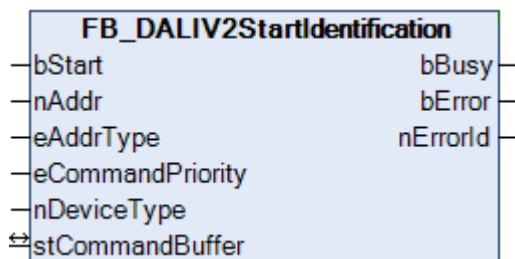
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nExtendedVersionNumber	BYTE	Extended version number of the control gear

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.2.3 FB_DALIV2StartIdentification



The function block FB_DALIV2StartIdentification is used to start a 10-second identification procedure of the control gear. The behavior is specified by the manufacturer. The lamp is usually switched on and off according to a certain pattern.

This command belongs to the application extended commands. These only work if they are preceded by the command *Enable Device Type*, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The Device Type to be activated can be set at the *nDeviceType* input.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDeviceType : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeviceType	BYTE	Identifier for the device type (see table under FB_DALIV2EnableDeviceType [► 92])

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

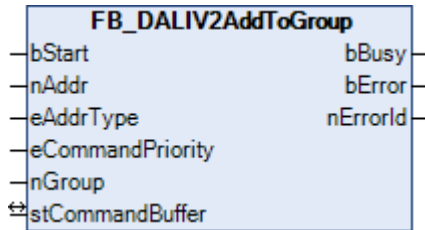
Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3 Configuration

Function blocks

Name	Description
FB_DALIV2AddToGroup [► 97]	Inserts one or more control gears into a group.
FB_DALIV2RemoveFromGroup [► 98]	Remove one or more control gears from a group.
FB_DALIV2RemoveFromScene [► 99]	Removes the control gear from the scene.
FB_DALIV2Reset [► 100]	All variables are reset to their reset values.
FB_DALIV2SetFadeRate [► 101]	Writes a value to variable FADE RATE [► 88] .
FB_DALIV2SetFadeTime [► 111]	Writes a value to variable FADE TIME [► 88] .
FB_DALIV2SetMaxLevel [► 104]	Writes a value to variable MAX LEVEL [► 88] .
FB_DALIV2SetMinLevel [► 105]	Writes a value to variable MIN LEVEL [► 88] .
FB_DALIV2SetPowerOnLevel [► 106]	Writes a value to variable POWER ON LEVEL [► 88] .
FB_DALIV2SetScene [► 107]	Writes a value as lamp power value in a scene
FB_DALIV2SetShortAddress [► 109]	Control gears receive a (new) short address.
FB_DALIV2SetSystemFailureLevel [► 110]	Writes a value to variable SYSTEM FAILURE LEVEL [► 88] .
FB_DALIV2StoreActualLevelInDTR0 [► 111]	Writes the current value of the lamp power into the DTR0.

4.1.2.3.3.1 FB_DALIV2AddToGroup



The function block FB_DALIV2AddToGroup is used to add the addressed control gears to the corresponding group (*nGroup*). A valid group number lies in the range between 0 and 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nGroup      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nGroup	BYTE	Group number (0...15)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

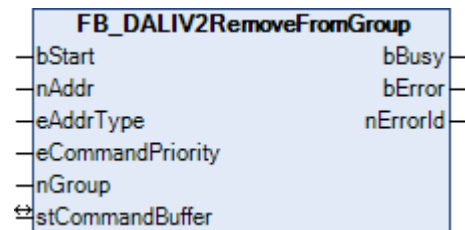
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3.2 FB_DALIV2RemoveFromGroup



The function block FB_DALIV2RemoveFromGroup is used to remove one or more control gears from a group. A valid group number lies in the range between 0 and 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nGroup      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nGroup	BYTE	The group from which the control gear is to be removed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

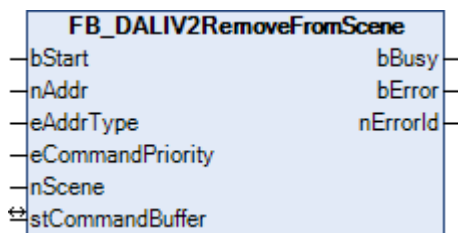
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3 FB_DALIV2RemoveFromScene



The function block FB_DALIV2RemoveFromScene is used to remove one or more control gears from a scene. A valid scene number lies in the range between 0 and 15.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nScene      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nScene	BYTE	The scene from which the control gear is to be removed.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3.4 FB_DALIV2Reset



The function block FB_DALIV2Reset resets all variables of the control gear to the reset values.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

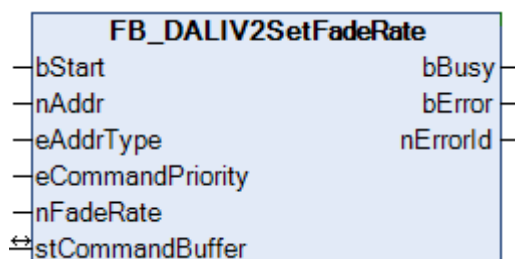
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3.5 FB_DALIV2SetFadeRate



The function block FB_DALIV2SetFadeRate writes a value to the variable [FADE RATE \[► 88\]](#). The range of possible values extends from 1 to 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nFadeRate   : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nFadeRate	BYTE	Rate of change of the lamp power value. The range of possible values extends from 1 to 15.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

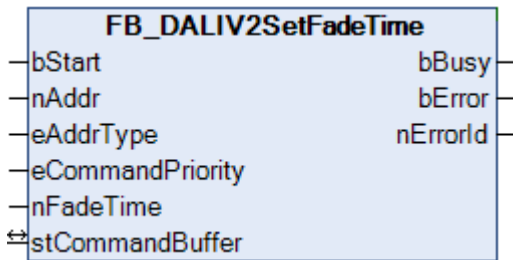
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.6 FB_DALIV2SetFadeTime



The function block FB_DALIV2SetFadeTime writes a value to the variable FADE TIME [► 88]. The range of possible values extends from 0 to 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nFadeTime   : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nFadeTime	BYTE	Time required for changing the current lamp power value to the required value. The range of possible values extends from 0 to 15.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError   : BOOL;
  nErrorId : UDINT;
END_VAR
```

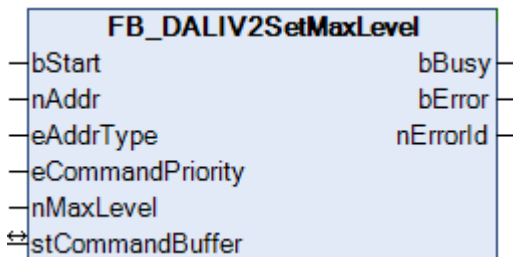
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.7 FB_DALIV2SetMaxLevel



The function block FB_DALIV2SetMaxLevel writes to the variable [MAX LEVEL](#) [► 89]. If the value provided is smaller than MIN LEVEL then the value is simply set to MIN LEVEL.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nMaxLevel   : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMaxLevel	BYTE	Maximum permitted lamp power (0 - 254)

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

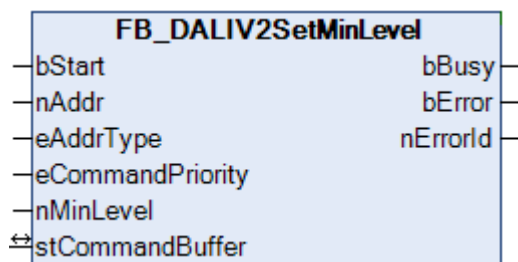
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [▶ 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.8 FB_DALIV2SetMinLevel



The function block FB_DALIV2SetMinLevel writes to the variable [MIN LEVEL](#) [[▶ 89](#)]. If the value provided is larger than MAX LEVEL then the value is simply set to MAX LEVEL.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nMinLevel   : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [▶ 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [▶ 462]	Priority (high, medium or low) with which the command is processed by the library.
nMinLevel	BYTE	Minimum permitted lamp power (0 - 254)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

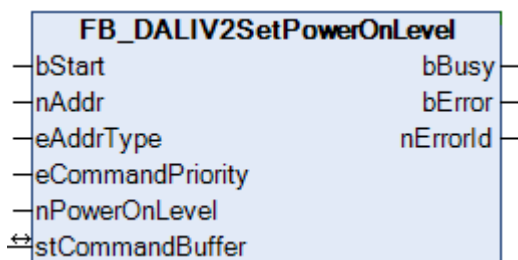
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.9 FB_DALIV2SetPowerOnLevel



With the help of the function block FB_DALIV2SetPowerOnLevel, one or more control gears receive a defined switch-on value on the variable [POWER ON LEVEL \[► 88\]](#).

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nPowerOnLevel : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nPowerOnLevel	BYTE	Switch-on value

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

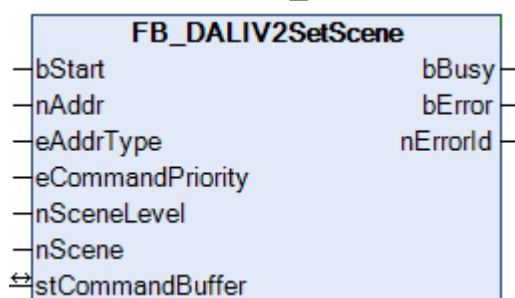
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.10 FB_DALIV2SetScene



The function block FB_DALIV2SetScene saves a lamp power value *nSceneLevel* for a specified scene *nScene*. The value range for the scene number extends from 0 to 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nSceneLevel : BYTE;
  nScene      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nSceneLevel	BYTE	Lamp power value for the desired scene
nScene	BYTE	The scene for which the value of the lamp power should be changed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

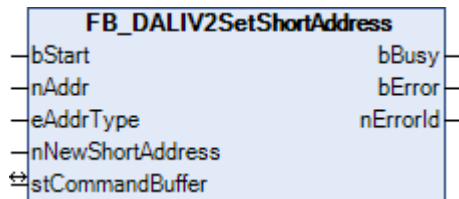
```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.11 FB_DALIV2SetShortAddress



The function block FB_DALIV2SetShortAddress is used to assign a (new) short address to one or more control gears. Valid short addresses lie in the range between 0 and 63. If 255 is specified as the short address, the short address in the control gear is deleted.

If you want to give a short address to a device that does not yet have one, you must transmit the command as a broadcast (*eAddrType* = *eDALIV2AddrTypeBroadcast*). This gives all control gears connected to the DALI terminal the short address *nNewShortAddress*. This includes the control gears that previously did not have a short address.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nNewShortAddress : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nNewShortAddress	BYTE	New short address (0-63) or mask (255)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

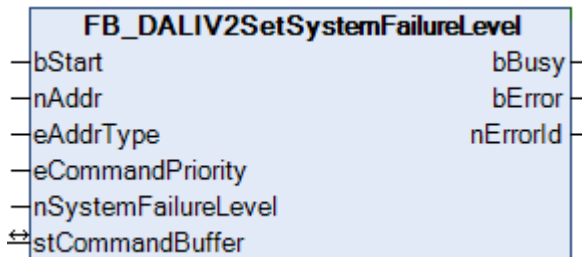
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.3.12 FB_DALIV2SetSystemFailureLevel



The variable [SYSTEM FAILURE LEVEL](#) [► 88] (lamp power value at system error) is written to the control gear. If a fault (such as the absence of the supply voltage) is detected on the DALI bus, the control gear switches the lamp to this power value.

Inputs

```

VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nSystemFailureLevel : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nSystemFailureLevel	BYTE	Lamp power value in the event of a system error

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

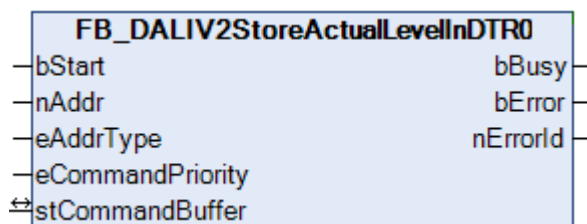
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.3.13 FB_DALIV2StoreActualLevelInDTR0



The function block writes the current lamp power value into the DTR0. This does not change the current value of the lamp power.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

🔌/🔌 Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

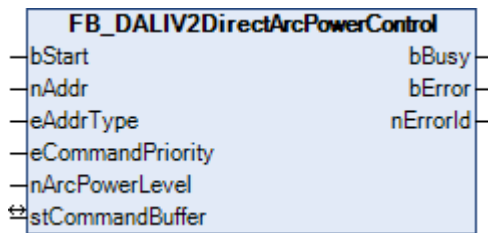
Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.4 Power control

Function blocks

Name	Description
FB_DALIV2DirectArcPowerControl [► 113]	Directly specify the lamp power.
FB_DALIV2Down [► 114]	Reduce lamp power.
FB_DALIV2EnableDAPCSequence [► 115]	Start of a Direct Arc Power Control (DAPC) sequence.
FB_DALIV2GoToScene [► 116]	Call up a scene.
FB_DALIV2Off [► 117]	Switch the lamp off.
FB_DALIV2OnAndStepUp [► 119]	Switch the lamp on if necessary, and increase the lamp power by one step.
FB_DALIV2RecallMaxLevel [► 120]	Set the lamp power to MAX LEVEL [► 88].
FB_DALIV2RecallMinLevel [► 121]	Set the lamp power to MIN LEVEL [► 88].
FB_DALIV2StepDown [► 122]	Reduce the lamp power by one step.
FB_DALIV2StepDownAndOff [► 123]	Reduce the lamp power by one step, and switch the lamp off if appropriate.
FB_DALIV2StepUp [► 124]	Increase the lamp power by one step.
FB_DALIV2Up [► 126]	Increase lamp power.

4.1.2.3.4.1 FB_DALIV2DirectArcPowerControl



If the parameter *nArcPowerLevel* is outside of MAX VALUE [► 88] or MIN VALUE [► 88], the lamp is switched to the corresponding minimum or maximum value using the function block FB_DALIV2DirectArcPowerControl. If the lamp is switched off, it is switched on by the command. The rate at which the specified setpoint is to be reached is specified by the variable FADE TIME [► 88].

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nArcPowerLevel : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nArcPowerLevel	BYTE	Lamp power value

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.2 FB_DALIV2Down



The lamp is dimmed over a period of 200 ms. If the lamp power has already reached the [MIN LEVEL](#) [► 88] value the brightness is not changed. The lamp is not switched off with this command.

The rate at which dimming is to take place within the 200 ms is specified by the variable [FADE RATE](#) [► 88].

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

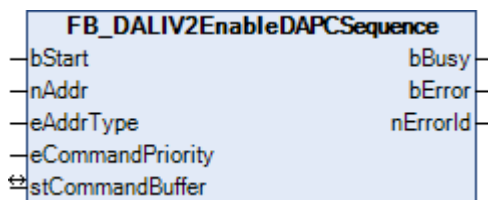
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.3 FB_DALIV2EnableDAPCSequence



This command starts a *Direct Arc Power Control* (DAPC) sequence. Following this command, *DirectArcPowerControl* commands must be sent using the function block *FB_DALIV2DirectArcPowerControl* [► 113]. There must be no more than 200 ms between the individual commands; otherwise the sequence is terminated.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.4 FB_DALIV2GoToScene



This function block sets the lamp power value to the value saved for the scene *nScene*. If the control gear does not belong to the scene, the lamp power value is not changed. If the lamp is switched off, it is switched on with the command.

The rate at which the lamp power value is to be reached is specified by the variable [FADE TIME \[► 88\]](#).

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nScene      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nScene	BYTE	Scene to be called (0 - 15).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.5 FB_DALIV2Off



The function block FB_DALIV2Off switches the DALI lamps off immediately.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

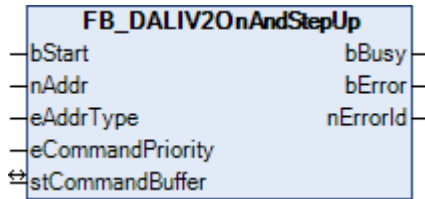
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.6 FB_DALIV2OnAndStepUp



The function block FB_DALIV2OnAndStepUp immediately sets the current lamp power value one level higher. If the lamp is switched off then it is switched on and set to MIN LEVEL [► 88].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

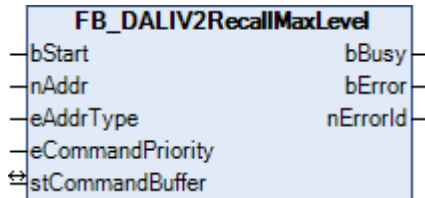
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.7 FB_DALIV2RecallMaxLevel



The function block FB_DALIV2RecallMaxLevel sets the current lamp power value continuously to MAX LEVEL [► 88]. If the lamp is switched off this command will switch it on.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

```

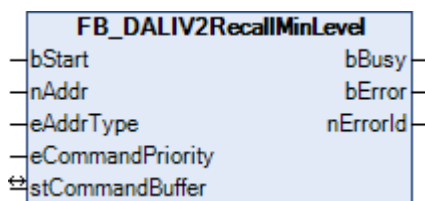
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.8 FB_DALIV2RecallMinLevel



The function block FB_DALIV2RecallMinLevel sets the current lamp power value continuously to MIN LEVEL [► 88]. If the lamp is switched off this command will switch it on.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

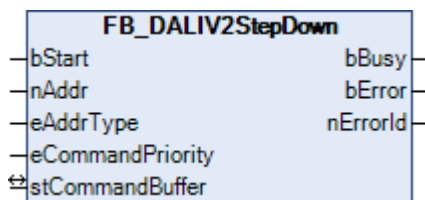
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.9 FB_DALIV2StepDown



The function block FB_DALIV2StepDown immediately sets the current lamp power value one level lower. The lamps are not switched off by this command. The power is not further reduced if the lamp power has already reached [MIN LEVEL](#) [► 88].

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

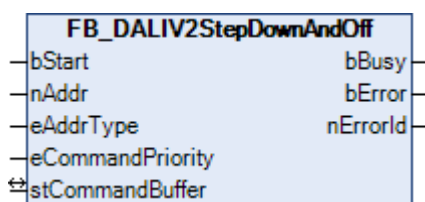
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.10 FB_DALIV2StepDownAndOff



The function block FB_DALIV2StepDownAndOff immediately sets the current lamp power value one level lower. The lamp is switched off if the power value has already reached [MIN LEVEL \[► 88\]](#).

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.11 FB_DALIV2StepUp



The function block FB_DALIV2StepUp immediately sets the current lamp power value one level higher. The lamps are not switched on by this command. The power is not further increased if the lamp power has already reached [MAX LEVEL \[► 88\]](#).

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.4.12 FB_DALIV2Up



The lamp is dimmed brighter for 200 ms with the function block FB_DALIV2Up. If the lamp power has already reached the MAX LEVEL [► 88] the brightness is not changed. The lamp is not switched on with this command.

The rate at which dimming is to take place within 200 ms is specified by the variable FADE RATE [► 88].

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

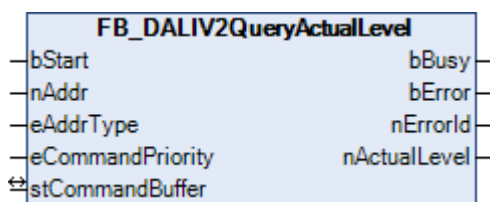
4.1.2.3.5 Queries

Function blocks

Name	Description
FB_DALIV2QueryActualLevel [► 128]	Read the ACTUAL DIM LEVEL [► 88] variable (current lamp power).
FB_DALIV2QueryContentDTR0 [► 129]	Read out the DTR0 (Data Transfer Register 0).
FB_DALIV2QueryContentDTR1 [► 130]	Read out the DTR1 (Data Transfer Register 1).
FB_DALIV2QueryContentDTR2 [► 131]	Read out the DTR2 (Data Transfer Register 2).
FB_DALIV2QueryControlGearPresent [► 133]	Query whether the control gear is ready to operate.
FB_DALIV2QueryDeviceType [► 134]	Query the device type.
FB_DALIV2QueryFadeTimeFadeRate [► 135]	Read out the variables FADE RATE [► 88] and FADE TIME [► 88].
FB_DALIV2QueryGroups [► 136]	Query the group membership.
FB_DALIV2QueryGroups0UpTo7 [► 138]	Query the group membership (groups 0 to 7).
FB_DALIV2QueryGroups8UpTo15 [► 139]	Query the group membership (groups 8 to 15).
FB_DALIV2QueryLampFailure [► 140]	Query whether a lamp has failed.
FB_DALIV2QueryLampPowerOn [► 141]	Query as to whether the lamp is switched on.
FB_DALIV2QueryLimitError [► 142]	Query whether the last lamp power value could be used or not.
FB_DALIV2QueryMaxLevel [► 144]	Read the MAX LEVEL [► 88] variable (maximum permitted lamp power).
FB_DALIV2QueryMinLevel [► 145]	Read the MIN LEVEL [► 88] variable (minimum permitted lamp power).
FB_DALIV2QueryMissingShortAddress [► 146]	Query as to whether the control gear does not have a short address.
FB_DALIV2QueryPhysicalMinLevel [► 147]	Read the PHYSICAL MIN LEVEL [► 88] variable (lowest lamp power that is physically possible).
FB_DALIV2QueryPowerFailure [► 148]	Query whether the control gear has received a reset or a lamp power control command since it was switched on or not.
FB_DALIV2QueryPowerOnLevel [► 150]	Read the POWER ON LEVEL [► 88] variable (initial lamp power when switched on).
FB_DALIV2QueryRandomAddress [► 151]	Read the RANDOM ADDRESS [► 88] variable (direct address/long address).
FB_DALIV2QueryRandomAddressH [► 152]	Read the high byte of the variable RANDOM ADDRESS [► 88] (direct address/long address).
FB_DALIV2QueryRandomAddressL [► 153]	Read the low byte of the variable RANDOM ADDRESS [► 88] (direct address/long address).

Name	Description
FB_DALIV2QueryRandomAddressM [► 154]	Read the middle byte of the variable <u>RANDOM ADDRESS</u> [► 88] (direct address/long address).
FB_DALIV2QueryResetState [► 155]	Query whether the control gear is in the reset state.
FB_DALIV2QuerySceneLevel [► 157]	Query the lamp power value of a scene.
FB_DALIV2QueryStatus [► 158]	Read the <u>STATUS INFORMATION</u> [► 88] variable.
FB_DALIV2QuerySystemFailureLevel [► 159]	Read the <u>SYSTEM FAILURE LEVEL</u> [► 88] variable (the power value for the lamp in the presence of a system error).
FB_DALIV2QueryVersionNumber [► 160]	Read the <u>VERSION NUMBER</u> [► 88] variable.
FB_DALIV2ReadMemoryLocation [► 162]	Reading an 8-bit value from the control gear memory.

4.1.2.3.5.1 FB_DALIV2QueryActualLevel



The function block FB_DALIV2QueryActualLevel reads the ACTUAL DIM LEVEL [► 88] variable (current lamp power) from the control gear.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

🔌 Outputs

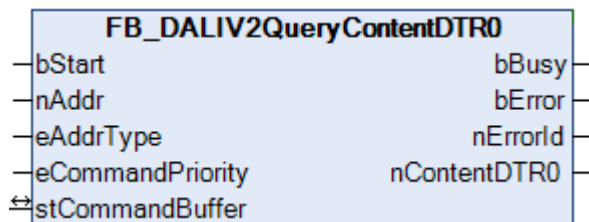
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nActualLevel : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nActualLevel	BYTE	Lamp power

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.2 FB_DALIV2QueryContentDTR0



The function block FB_DALIV2QueryContentDTR0 reads the content of DTR0 (Data Transfer Register 0) from the control gear.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

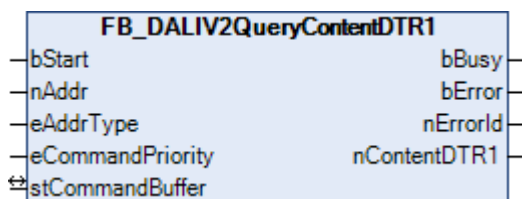
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nContentDTR0 : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR0	BYTE	Contents of DTR0 (D ata T ransfer R egister0)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.5.3 FB_DALIV2QueryContentDTR1



The function block FB_DALIV2QueryContentDTR1 reads the content of DTR1 (Data Transfer Register 1) from the control gear.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
bBusy      : BOOL;
bError     : BOOL;
nErrorId   : UDINT;
nContentDTR1 : BYTE;
END_VAR

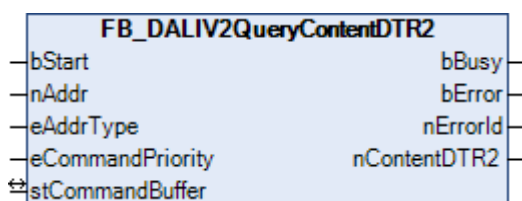
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR1	BYTE	Contents of the DTR1 (D ata T ransfer R egister)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.4 FB_DALIV2QueryContentDTR2



The function block FB_DALIV2QueryContentDTR2 reads the content of DTR2 (Data Transfer Register 2) from the control gear.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

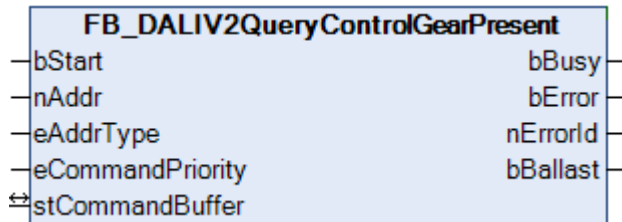
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nContentDTR2 : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR2	BYTE	Contents of DTR2 (D ata T ransfer R egister 2)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.5 FB_DALIV2QueryControlGearPresent



The function block FB_DALIV2QueryControlGearPresent provides information on whether a specific control gear is ready to operate.

Using this command, it can easily be determined whether or not any control gears at all are connected to a DALI line. To do this, the function block with the parameter `eAddrType = eDALIV2AddrTypeBroadcast` is called. If the output `bBallast` is FALSE and output `nError` is 0, there is no control gear connected to the DALI line. If the output `nError` is 0 and the output `bBallast` is TRUE, there is exactly one control gear connected to the DALI line. If several control gears are connected, `nError` will return 5 (several control gears have responded). In this case it is irrelevant whether or not the control gears have short addresses.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bBallast   : BOOL;
END_VAR

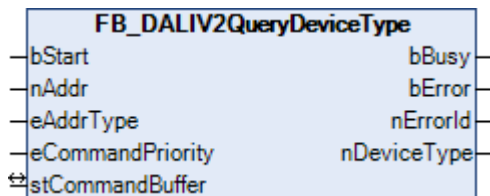
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bBallast	BOOL	If the output is active, the corresponding control gear is ready to operate.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.5.6 FB_DALIV2QueryDeviceType



The function block FB_DALIV2QueryDeviceType reads the [DEVICE TYPE](#) [► 88] from the control gear. The following device types are defined according to the IEC 62386 standard:

Value	Description
0	Standard device
1	Device for emergency lighting.
2	Device for discharge lamps.
3	Device for low-voltage halogen lamps.
4	Device for dimming incandescent lamps.
5	Device for converting digital signals into DC signals.
6	Device for light emitting diodes (LEDs).

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

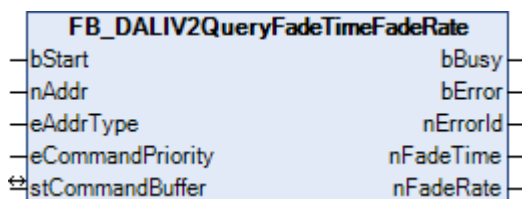
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nDeviceType : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDeviceType	BYTE	Identifier for the device type (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.7 FB_DALIV2QueryFadeTimeFadeRate



The function block FB_DALIV2QueryFadeTimeFadeRate reads the variables [FADE TIME \[► 88\]](#) and [FADE RATE \[► 88\]](#) from the control gear.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

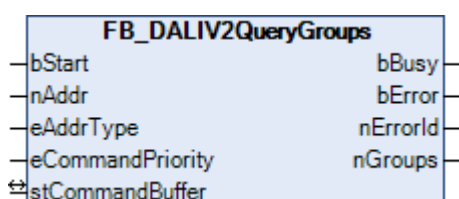
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nFadeTime  : BYTE;
    nFadeRate  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFadeTime	BYTE	Fade time (0 to 15)
nFadeRate	BYTE	Fade rate (1 to 15)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.8 FB_DALIV2QueryGroups



The function block FB_DALIV2QueryGroups reads the variables [GROUP 0-7 \[► 88\]](#) and [GROUP 8-15 \[► 88\]](#) from the control gear and links them to a 16-bit value. Each bit represents one group. Bit 0 represents group 0, while bit 15 represents group 15. If the bit is set, the control gear belongs to the corresponding group.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

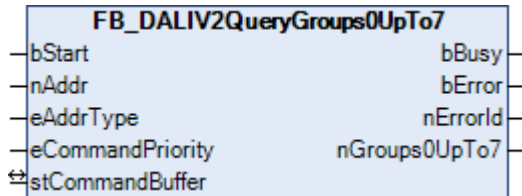
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nGroups    : WORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nGroups	WORD	Group assignment

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.9 FB_DALIV2QueryGroups0UpTo7



The function block FB_DALIV2QueryGroups0UpTo7 reads the GROUP 0-7 [► 88] variable from the control gear and links it to an 8-bit value. Each bit represents one group. Bit 0 group 0 and bit 7 group 7. If the bit is set, the control gear belongs to the corresponding group.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nGroups0UpTo7 : BYTE;
END_VAR
```

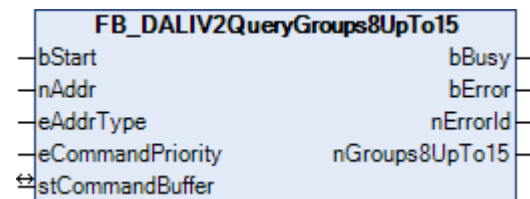
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nGroups0UpTo7	BYTE	Group assignment

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.10 FB_DALIV2QueryGroups8UpTo15



The function block FB_DALIV2QueryGroups8UpTo15 reads the [GROUP 8-15](#) [► 88] variable from the control gear and links it to an 8-bit value. Each bit represents one group. Bit 0 represents group 8, while bit 7 represents group 15. If the bit is set, the control gear belongs to the corresponding group.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
  
```

```

nErrorId      : UDINT;
nGroups8UpTo15 : BYTE;
END_VAR

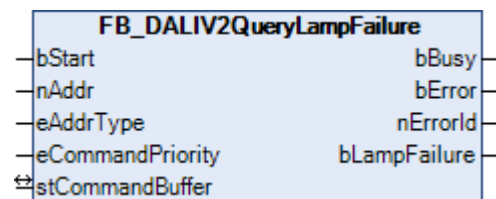
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nGroups8UpTo15	BYTE	Group assignment

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.11 FB_DALIV2QueryLampFailure



The function block FB_DALIV2QueryLampFailure provides information on whether a particular control gear has a lamp problem.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

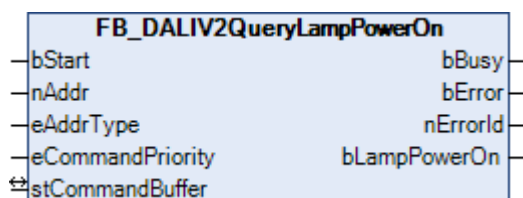
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  bLampFailure : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bLampFailure	BOOL	If the output is active there has been a lamp failure at the corresponding control gear.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.12 FB_DALIV2QueryLampPowerOn



The function block FB_DALIV2QueryLampPowerOn provides information on whether the lamp is switched on by a specific control gear.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

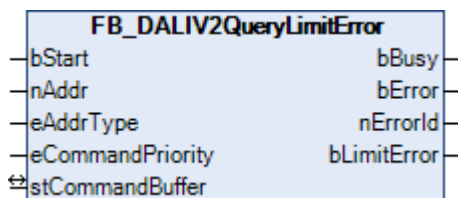
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bLampPowerOn : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bLampPowerOn	BOOL	If the output is active the lamp at the corresponding control gear is switched on.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.13 FB_DALIV2QueryLimitError



The function block FB_DALIV2QueryLimitError provides information on whether the last lamp power value on a specific control gear was not adhered to because it was above [MAX LEVEL](#) [[► 88](#)] or below [MIN LEVEL](#) [[► 88](#)].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

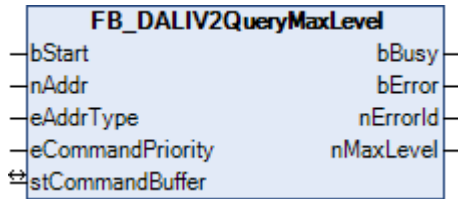
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bLimitError : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bLimitError	BOOL	If the output is active, the last lamp power value cannot be used.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.14 FB_DALIV2QueryMaxLevel



The function block FB_DALIV2QueryMaxLevel reads the variable **MAX LEVEL** [► 88] (maximum permitted lamp power) from the control gear. This value specifies the upper limit for lamp power commands.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nMaxLevel  : BYTE;
END_VAR
```

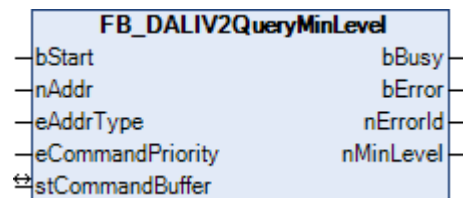
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Name	Type	Description
nMaxLevel	BYTE	Maximum permitted lamp power (0 - 254)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.15 FB_DALIV2QueryMinLevel



The variable MIN LEVEL [► 88] (minimum permissible lamp power) is read from the control gear. This value specifies the lower limit for lamp power commands.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

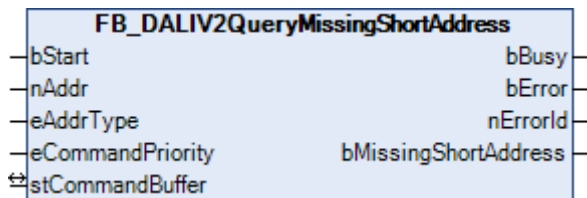
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nMinLevel  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nMinLevel	BYTE	Minimum permitted lamp power (0 - 254)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.16 FB_DALIV2QueryMissingShortAddress



The function block FB_DALIV2QueryMissingShortAddress provides information on whether a specific control gear does not have a short address.

Using this command, it can be determined whether or not any control gears without a short address are connected to a DALI line. To do this, the function block with the parameter *eAddrType* = *eDALIV2AddrTypeBroadcast* is called. If output *bMissingShortAddress* is FALSE and output *nError* is 0, all control gears have a valid short address. If the output *nError* is 0 and the output *bMissingShortAddress* is TRUE, there is exactly one control gear that has no short address. If several control gears have no short address, *nError* will return 5 (several control gears have responded).

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

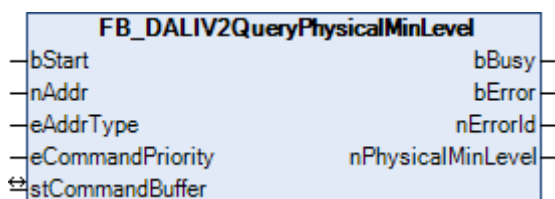
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError          : BOOL;
    nErrorId       : UDINT;
    bMissingShortAddress : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bMissingShortAddress	BOOL	If the output is active the corresponding control gear does not have a short address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.17 FB_DALIV2QueryPhysicalMinLevel



The function block FB_DALIV2QueryPhysicalMinLevel reads the variable [PHYSICAL MIN LEVEL \[► 88\]](#) (physically lowest possible lamp power) from the control gear. This value can only be read, and is specified by the manufacturer.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

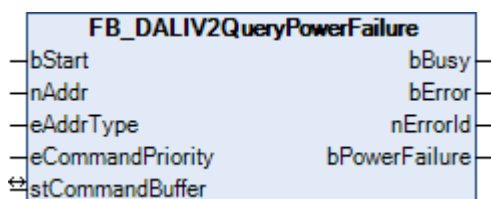
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nPhysicalMinLevel : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nPhysicalMinLevel	BYTE	Lowest physically possible lamp power (0 - 254)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.18 FB_DALIV2QueryPowerFailure



The function block FB_DALIV2QueryPowerFailure queries whether the control gear has not received a reset or lamp power control command since it was switched on.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

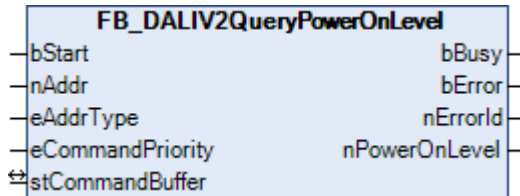
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bPowerFailure : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bPowerFailure	BOOL	If the output is active, no lamp power control command has yet been sent to the control gear.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.19 FB_DALIV2QueryPowerOnLevel



The function block FB_DALIV2QueryPowerOnLevel reads the variable POWER ON LEVEL [► 88] (switch-on lamp power) from the control gear. The lamp switches itself to this power value immediately after the power is connected.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nPowerOnLevel : BYTE;
END_VAR
```

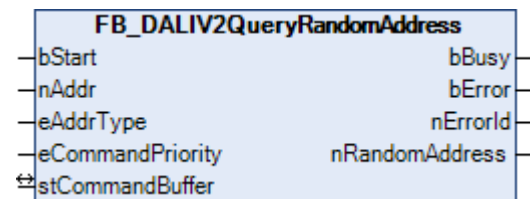
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nPowerOnLevel	BYTE	Lamp power at switch-on (0 - 254)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.20 FB_DALIV2QueryRandomAddress



The variable [RANDOM ADDRESS](#) [► 88] is read from the control gear.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

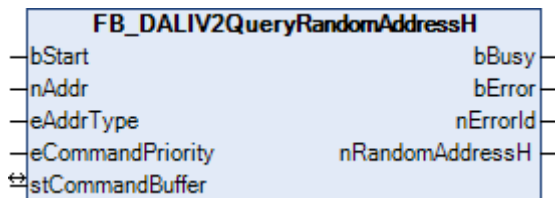
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nRandomAddress : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddress	UDINT	Random address/long address of the control gear

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.21 FB_DALIV2QueryRandomAddressH



The high-order byte of the variable [RANDOM ADDRESS](#) [► 88] is read from the control gear.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nRandomAddressH : BYTE;
END_VAR

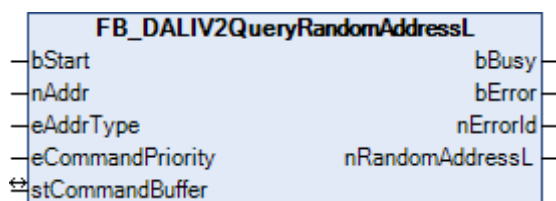
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressH	BYTE	The high-order byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.22 FB_DALIV2QueryRandomAddressL



The function block FB_DALIV2QueryRandomAddressL reads the low-order byte of the variable [RANDOM ADDRESS \[► 88\]](#) from the control gear.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

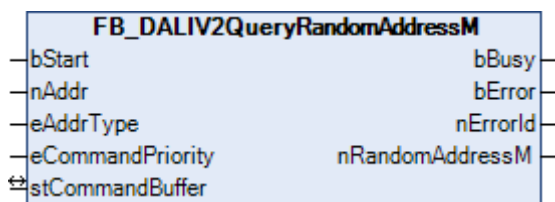
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRandomAddressL : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressL	BYTE	The low-order byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.23 FB_DALIV2QueryRandomAddressM



The function block FB_DALIV2QueryRandomAddressM reads the middle byte of the variable [RANDOM ADDRESS \[► 88\]](#) from the control gear.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

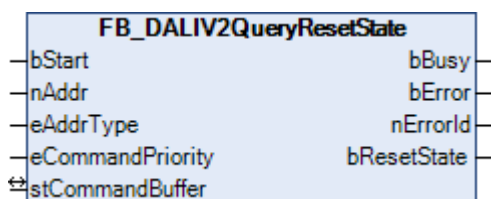
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRandomAddressM : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressM	BYTE	The middle byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.24 FB_DALIV2QueryResetState



The function block FB_DALIV2QueryResetState provides information on whether a specific control gear is in the reset state.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

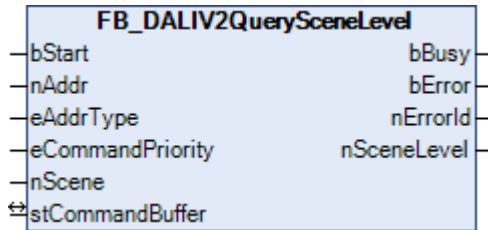
```
VAR_OUTPUT
  bBusy       : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
  bResetState : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bResetState	BOOL	If the output is active the corresponding control gear is in the reset state.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.25 FB_DALIV2QuerySceneLevel



The function block FB_DALIV2QuerySceneLevel reads the lamp power value of the corresponding scene from the control gear.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nScene      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nScene	BYTE	Scene from which the lamp power value is to be read (0 - 15).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nSceneLevel : BYTE;
END_VAR
```

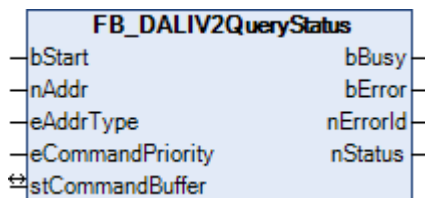
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nSceneLevel	BYTE	Lamp power value of the scene

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.26 FB_DALIV2QueryStatus



The function block FB_DALIV2QueryStatus reads the variable [STATUS INFORMATION](#) [► 88] from the control gear. The status information contains the eight most important status messages of a control gear. The meaning of the individual bits is defined as follows:

Bit	Description
0	Status of the control gear. 0: OK.
1	Lamp failure. 0: OK.
2	Lamp power on. 0: OFF.
3	Limit value error. 0: the most recently requested lamp power was either between MIN LEVEL and MAX LEVEL or was OFF.
4	Fading completed: 0: fading finished. 1: fading active.
5	Reset status. 0: no.
6	Short address missing. 0: no.
7	Power supply fault. 0: No. A reset or a lamp power control command has been received since the last switch-on.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

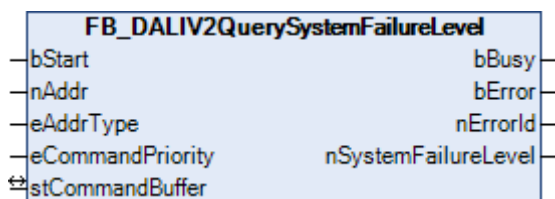
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nStatus    : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nStatus	BYTE	Status information (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.27 FB_DALIV2QuerySystemFailureLevel



The variable [SYSTEM FAILURE LEVEL \[► 88\]](#) (lamp power value on system error) is read from the control gear. If a fault (such as the absence of the supply voltage) is detected on the DALI bus, the control gear switches the lamp to this power value.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

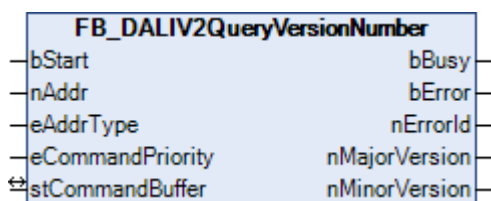
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nSystemFailureLevel : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nSystemFailureLevel	BYTE	Lamp power value in the event of a system error

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.28 FB_DALIV2QueryVersionNumber



The variable `VERSION NUMBER` [► 88] is read from the control gear. The version number corresponds to the version number of the IEC standard in accordance with which the software and hardware of the control gear has been developed and manufactured. The version number can only be read, and is specified by the manufacturer. The major version (*nMajorVersion*) and the minor version (*nMinorVersion*) can each have a value in the range from 0 to 15 (4-bit).

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

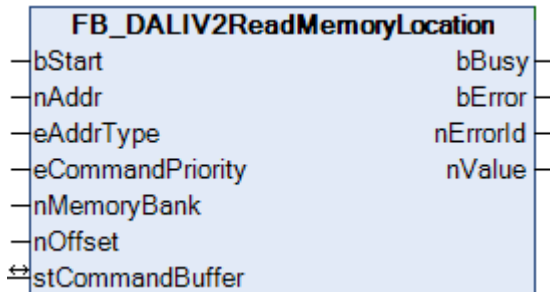
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nMajorVersion : BYTE;
  nMinorVersion : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nMajorVersion	BYTE	Major version number
nMinorVersion	BYTE	Minor version number

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.5.29 FB_DALIV2ReadMemoryLocation



The function block FB_DALIV2ReadMemoryLocation is used to read a byte from the memory of the control gear. The exact memory bank is specified by the parameter *nMemoryBank* and the address within the memory bank by the parameter *nOffset*.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nMemoryBank : BYTE;
  nOffset     : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMemoryBank	BYTE	The memory bank to be accessed.
nOffset	BYTE	The address within the memory bank to be accessed.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nValue     : BYTE;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nValue	BYTE	Byte read from the control gear memory

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

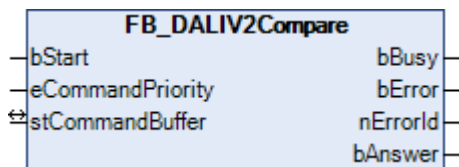
4.1.2.3.6 Special commands

Function blocks

Name	Description
FB_DALIV2Compare [► 164]	The control gear compares its RANDOM ADDRESS [► 88] with the SEARCH ADDRESS [► 88].
FB_DALIV2Initialise [► 165]	Starts the addressing of the control gears.
FB_DALIV2PhysicalSelection [► 166]	All control gears that receive this command go into <i>physical selection</i> mode.
FB_DALIV2ProgramShortAddress [► 167]	All the selected control gears save the value <i>nShortAddress</i> (SHORT ADDRESS [► 88]) as their short address.
FB_DALIV2QueryShortAddress [► 168]	If the RANDOM ADDRESS [► 88] is the same as the SEARCH ADDRESS [► 88] then the control gear sends its short address.
FB_DALIV2Randomise [► 169]	The control gears generate a new RANDOM ADDRESS [► 88].
FB_DALIV2SearchAddr [► 170]	This function block sets the SEARCH ADDRESS [► 88].
FB_DALIV2SearchAddrH [► 171]	This function block sets the upper 8 bits of the 24-bit SEARCH ADDRESS [► 88].
FB_DALIV2SearchAddrL [► 172]	This function block sets the lower 8 bits of the 24-bit SEARCH ADDRESS [► 88].
FB_DALIV2SearchAddrM [► 174]	This function block sets the middle 8 bits of the 24-bit SEARCH ADDRESS [► 88].
FB_DALIV2SetDTR0 [► 175]	Writes an 8-bit value into the DTR0 of all the control gears.
FB_DALIV2SetDTR1 [► 176]	Writes an 8-bit value into the DTR1 of all the control gears.

Name	Description
FB_DALIV2SetDTR2 [► 177]	Writes an 8-bit value into the DTR2 of all the control gears.
FB_DALIV2Terminate [► 178]	The addressing of all the control gears is terminated.
FB_DALIV2VerifyShortAddress [► 179]	If the short address in the control gear is equal to the parameter <i>nShortAddress</i> , the output <i>bAnswer</i> is set to TRUE.
FB_DALIV2Withdraw [► 180]	Control gears for which the <u>RANDOM ADDRESS</u> [► 88] is the same as the <u>SEARCH ADDRESS</u> [► 88] may no longer respond to the command <u>FB_DALIV2Compare</u> [► 164].
FB_DALIV2WriteMemoryLocation [► 181]	Writes an 8-bit value into the memory of a control gear. Access to the memory must first be enabled with the command <u>FB_DALIV2EnableWriteMemory</u> [► 443].

4.1.2.3.6.1 FB_DALIV2Compare



The control gear compares its RANDOM ADDRESS [► 88] with the SEARCH ADDRESS [► 88]. If the random address is smaller than or equal to the search address, and if the control gear is not connected, then the output *bAnswer* is set to TRUE.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
```

```

nErrorId : UDINT;
bAnswer  : BOOL;
END_VAR

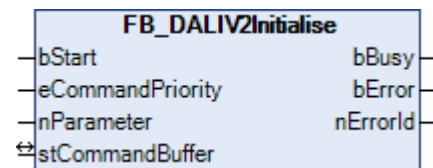
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bAnswer	BOOL	The random address is smaller than or equal to the search address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.2 FB_DALIV2Initialise



The function block FB_DALIV2Initialise is used to start the addressing of the control gears. The addressing has to be terminated again with the function block FB_DALIV2Terminate [► 178]. The maximum duration is limited to 15 minutes. Each control gear ends addressing automatically after 15 minutes. The reaction of the control gears that receive this command depends on the parameter *nParameter*:

Value (binary)	Description
0000 0000	All control gears respond.
0AAA AAA1	Control gears with the address AAA AAA respond.
1111 1111	Control gears with no short address respond.

Inputs

```

VAR INPUT
  bStart          : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nParameter      : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nParameter	BYTE	Specifies which control gears should respond to this command (see table above).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

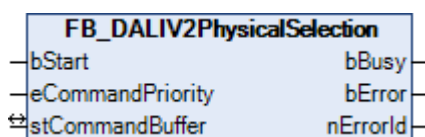
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.3 FB_DALIV2PhysicalSelection



The function block FB_DALIV2PhysicalSelection controls that all control gears that receive this command go into *physical selection* mode. In this mode, the comparison of the [RANDOM ADDRESS \[► 88\]](#) with the [SEARCH ADDRESS \[► 88\]](#) is blocked.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

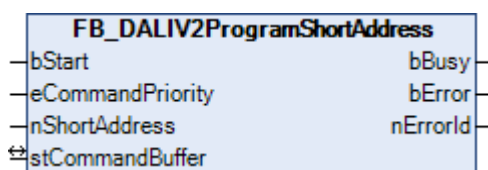
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.4 FB_DALIV2ProgramShortAddress



The function block FB_DALIV2ProgramShortAddress controls that all selected control gears save the value *nShortAddress* ([SHORT ADDRESS \[► 88\]](#)) as a short address.

Selected means:

- The [RANDOM ADDRESS \[► 88\]](#) of the control gear is the same as the [SEARCH ADDRESS \[► 88\]](#).
- Physical selection is determined by the control gear, as the lamp has been disconnected from the control gear (after receiving the command [FB_DALIV2PhysicalSelection \[► 166\]](#)).

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nShortAddress : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShortAddress	BYTE	Short address to be assigned to the selected control gears (0 - 63).

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

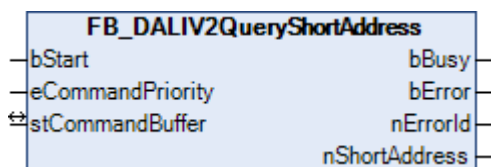
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.5 FB_DALIV2QueryShortAddress



Once the control gear has been selected, it sends its [SHORT ADDRESS](#) [► 88].

Selected means:

- The [RANDOM ADDRESS](#) [► 88] of the control gear is the same as the [SEARCH ADDRESS](#) [► 88].
- Physical selection is determined by the control gear, as the lamp has been disconnected from the control gear (after receiving the command [FB_DALIV2PhysicalSelection](#) [► 166]).

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

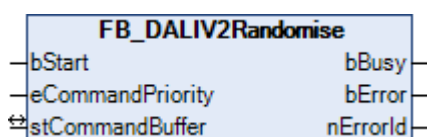
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nShortAddress : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nShortAddress	BYTE	Short address of the control gear (0 - 63)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.6 FB_DALIV2Randomise



The control gears generate a new [RANDOM ADDRESS](#) [[► 88](#)] with the function block FB_DALIV2Randomize.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

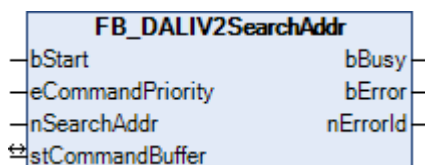
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.7 FB_DALIV2SearchAddr



The function block FB_DALIV2SearchAddr sets the [SEARCH ADDRESS](#) [[► 88](#)].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nSearchAddr : UDINT;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nSearchAddr	UDINT	Search address

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

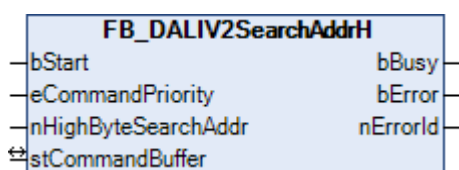
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.8 FB_DALIV2SearchAddrH



The function block FB_DALIV2SearchAddrH sets the upper 8 bits of the 24-bit [SEARCH ADDRESS](#) [[► 88](#)].

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nHighByteSearchAddr : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nHighByteSearchAddr	BYTE	The upper 8 bits of the 24-bit search address

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

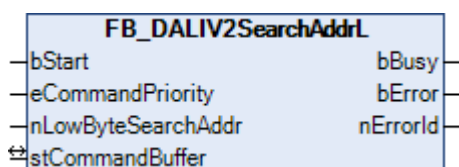
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.9 FB_DALIV2SearchAddrL



The function block FB_DALIV2SearchAddrL sets the lower 8 bits of the 24-bit SEARCH ADDRESS [► 88].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nLowByteSearchAddr : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nLowByteSearchAddr	BYTE	The lower 8 bits of the 24-bit search address

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

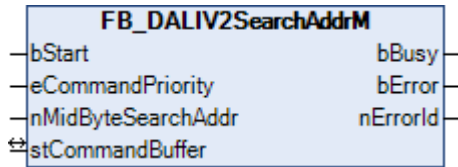
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError      : BOOL;
    nErrorId    : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.10 FB_DALIV2SearchAddrM



The function block FB_DALIV2SearchAddrM sets the middle 8 bits of the 24-bit SEARCH ADDRESS [► 88].

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nMidByteSearchAddr : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMidByteSearchAddr	BYTE	The middle 8 bits of the 24-bit search address

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB KL6811Communication [► 77] (KL6811) or FB KL6821Communication [► 82] (KL6821).

Outputs

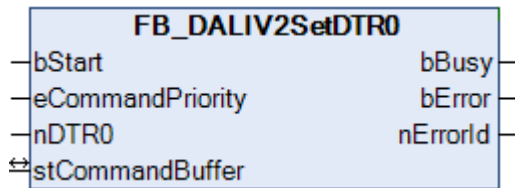
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.11 FB_DALIV2SetDTR0



This command is only available as a broadcast. Data is written to the DTR0 of all the control gears.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDTR0       : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR0	BYTE	The value that is to be written into the DTR0.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

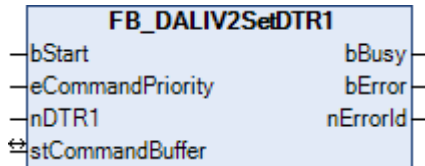
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.3.6.12 FB_DALIV2SetDTR1



This command is only available as a broadcast. Data is written to the DTR1 of all the control gears.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDTR1       : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR1	BYTE	The value that is to be written into the DTR1.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

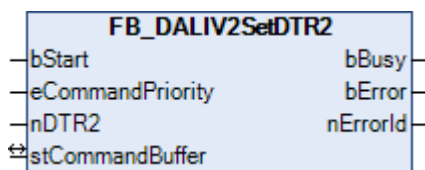
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.13 FB_DALIV2SetDTR2



This command is only available as a broadcast. Data is written to the DTR2 of all the control gears.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDTR2           : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR2	BYTE	The value that is to be written into the DTR2.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

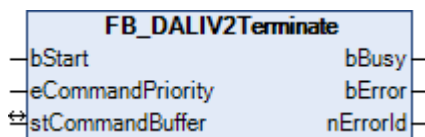
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.14 FB_DALIV2Terminate



The function block FB_DALIV2Terminate terminates addressing for all control gears.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

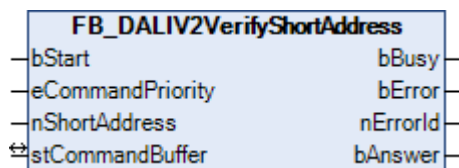
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.15 FB_DALIV2VerifyShortAddress



If the short address in the control gear is equal to the parameter *nShortAddress*, the output *bAnswer* is set to TRUE.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nShortAddress : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShortAddress	BYTE	Short address with which the own short address is to be compared.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

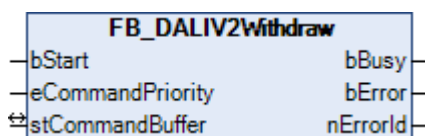
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bAnswer    : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bAnswer	BOOL	The parameter <i>nShortAddress</i> is the same as its own short address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.16 FB_DALIV2Withdraw



Control gears for which the [RANDOM ADDRESS \[► 88\]](#) is the same as the [SEARCH ADDRESS \[► 88\]](#) may no longer respond to the command [FB_DALIV2Compare \[► 164\]](#).

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

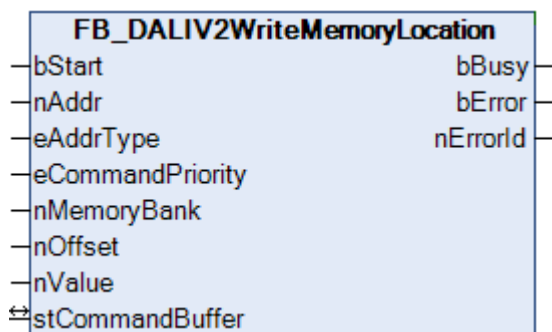
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.3.6.17 FB_DALIV2WriteMemoryLocation



The value *nValue* is written in the memory bank of the control gear. The exact memory bank is specified by *nMemoryBank* and the address within the memory bank by *nOffset*.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
```

```

eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
nMemoryBank      : BYTE
nOffset          : BYTE
nValue           : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMemoryBank	BYTE	The memory bank to be accessed.
nOffset	BYTE	The address within the memory bank to be accessed.
nValue	BYTE	Value to be written to the memory bank of the control gear.

Inputs/outputs

```

VAR_IN_OUT
stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
bBusy      : BOOL;
bError     : BOOL;
nErrorId   : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

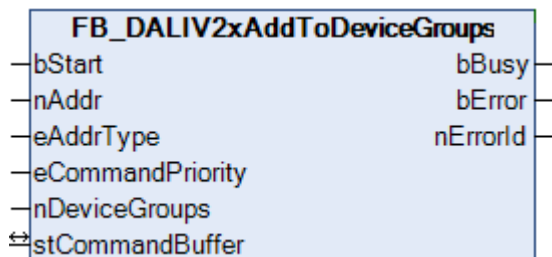
4.1.2.4 Part 103 (control units)

4.1.2.4.1 Configuration

Function blocks

Name	Description
FB_DALIV2xAddToDeviceGroups [▶ 183]	Assigns the control unit to one or more groups.
FB_DALIV2xDisableInstance [▶ 184]	The control unit instance is disabled.
FB_DALIV2xDisablePowerCycleNotification [▶ 186]	Disables the <i>Power Cycle Notification</i> event.
FB_DALIV2xEnableInstance [▶ 187]	The control unit instance is enabled.
FB_DALIV2xEnablePowerCycleNotification [▶ 188]	Enables the <i>Power Cycle Notification</i> event.
FB_DALIV2xIdentifyDevice [▶ 189]	Starts the identification routine for the control unit.
FB_DALIV2xRemoveFromDeviceGroups [▶ 190]	Removes the control unit from one or more groups.
FB_DALIV2xReset [▶ 192]	Resets all parameters to their reset values.
FB_DALIV2xSetEventFilter [▶ 193]	This function block sets the event filter for the respective control unit instance.
FB_DALIV2xSetEventScheme [▶ 193]	Sets the addressing scheme for the events of the respective control unit instance.
FB_DALIV2xSetOperatingMode [▶ 195]	Sets the <i>Operating Mode</i> for the control unit.
FB_DALIV2xSetShortAddress [▶ 197]	Sets the short address of the control unit.
FB_DALIV2xStartQuiescentMode [▶ 198]	The <i>quiescent mode</i> of the control unit is started.
FB_DALIV2xStopQuiescentMode [▶ 199]	The <i>quiescent mode</i> of the control unit is stopped.

4.1.2.4.1.1 FB_DALIV2xAddToDeviceGroups



The function block FB_DALIV2xAddToDeviceGroups assigns one or more groups to the control device.

A total of 32 groups are available to which a control device can be assigned. Each bit of the variable *nDeviceGroups* corresponds to one of these groups. If the bit is set, the control device is assigned to the respective group. Bit 0 corresponds to group 0, bit 31 to group 31.

The function block [FB_DALIV2xRemoveFromDeviceGroups \[\[▶ 190\]\(#\)\]](#) can be used to remove a control device from a group.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDeviceGroups   : DWORD;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeviceGroups	DWORD	32-bit variable where each bit represents the corresponding group to which the control device is to be assigned.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy : BOOL;
  bError : BOOL;
  nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.2 FB_DALIV2xDisableInstance



The function block FB_DALIV2xDisableInstance disables the instance of the control device.

The function block [FB_DALIV2xEnableInstance \[► 187\]](#) enables the instance of the control device.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

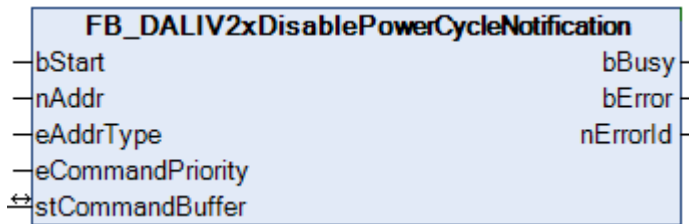
```
VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.3 FB_DALIV2xDisablePowerCycleNotification



The function block FB_DALIV2xDisablePowerCycleNotification disables the *Power Cycle Notification* event.

The function block [FB_DALIV2xEnablePowerCycleNotification](#) [► 188] can be used to enable the event.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

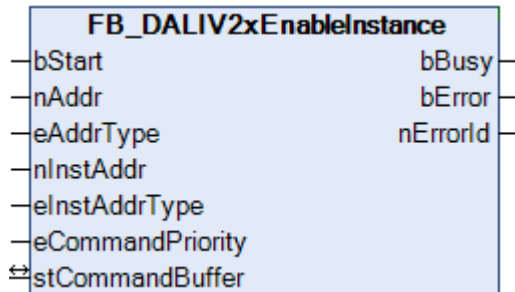
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.4 FB_DALIV2xEnableInstance



The function block FB_DALIV2xEnableInstance enables the instance of the control device.

The function block [FB_DALIV2xDisableInstance](#) [► 184] can be used to disable the instance.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr       : BYTE := 0;
  eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

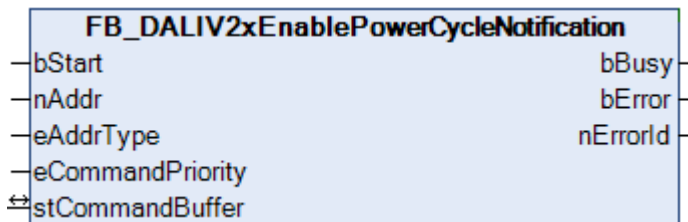
```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.5 FB_DALIV2xEnablePowerCycleNotification



The function block FB_DALIV2xEnablePowerCycleNotification enables the *Power Cycle Notification* event.

The function block [FB_DALIV2xDisablePowerCycleNotification](#) [► 186] can be used to lock the event.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

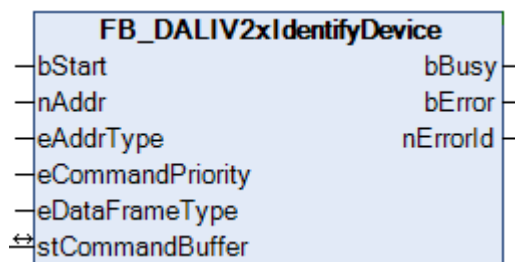
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.6 FB_DALIV2xIdentifyDevice



The function block FB_DALIV2xIdentifyDevice starts the identification routine for the control device.

It takes approx. 10 seconds and ends automatically. The exact scope of the identification routine depends on the manufacturer of the control device.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer    : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

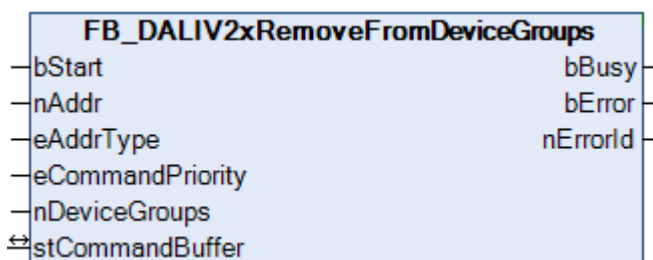
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.7 FB_DALIV2xRemoveFromDeviceGroups



The function block FB_DALIV2xRemoveFromDeviceGroups removes the control device from one or more groups.

A total of 32 groups are available to which a control device can be assigned. Each bit of the variable *nDeviceGroups* corresponds to one of these groups. If the bit is set, the control device is removed from the respective group. Bit 0 corresponds to group 0, bit 31 to group 31.

The function block [FB_DALIV2xAddToDeviceGroups](#) [► 183] can be used to assign a control device to a group.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
```

```

eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
nDeviceGroups   : DWORD;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeviceGroups	DWORD	32-bit variable where each bit represents the corresponding group from which the control device is to be removed.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.8 FB_DALIV2xReset



The function block FB_DALIV2xReset resets all parameters to the reset values.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	<u>E_DataFrameType</u> [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.9 FB_DALIV2xSetEventFilter



The function block FB_DALIV2xSetEventFilter sets the event filter for the respective instance of the control device.

Each bit in *nEventFilter* represents an event. If the bit is set, the associated event is enabled. The event is locked if the bit is not set.

The meaning of the individual bits can be found in the documentation of the respective control device.

Inputs

```

VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr       : BYTE := 0;
  eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nEventFilter    : DWORD := 0;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nEventFilter	DWORD	Each bit represents an event to be enabled or disabled.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

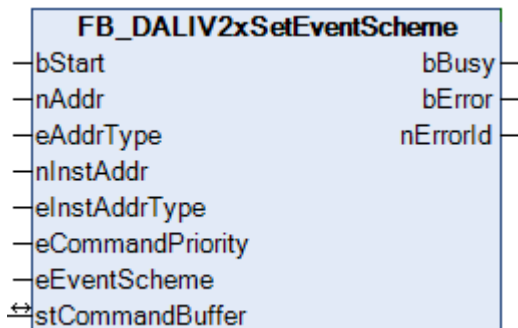
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.10 FB_DALIV2xSetEventScheme



The function block FB_DALIV2xSetEventScheme can be used to define the addressing scheme for the events of the respective instance of the control device.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eEventScheme : E_DALIV2EventScheme := eDALIV2EventSchemeInstance;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eEventScheme	E_DALIV2EventScheme [► 463]	Addressing scheme for the events

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

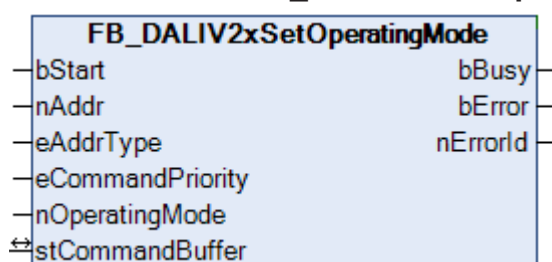
```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.11 FB_DALIV2xSetOperatingMode



The function block FB_DALIV2xSetOperatingMode sets the *Operating Mode* for the control device.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nOperatingMode : BYTE := 0;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nOperatingMode	BYTE	New Operating Mode

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

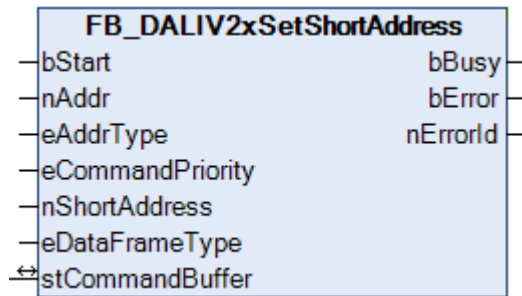
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.12 FB_DALIV2xSetShortAddress



The function block FB_DALIV2xSetShortAddress sets the short address of the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nShortAddress   : BYTE;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShortAddress	BYTE	New short address (0...63, 255)
eDataFrameType	<u>E_DALIV2DataFrameType</u> [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	<u>ST_DALIV2CommandBuffer</u>	Reference to the internal structure for communication with <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

```

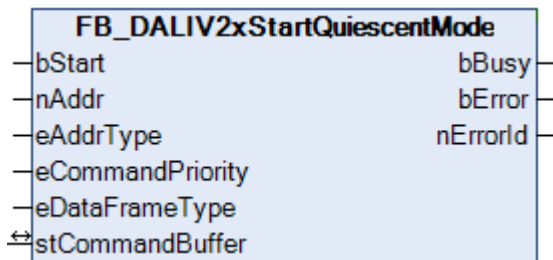
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.13 FB_DALIV2xStartQuiescentMode



The function block FB_DALIV2xStartQuiescentMode is used to start the *Quiescent Mode* of the control device.

The mode is limited to 15 min +/- 1.5 min after the last reception.

The *Quiescent Mode* can be stopped prematurely using the function block [FB_DALIV2xStopQuiescentMode](#) [► 199].

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

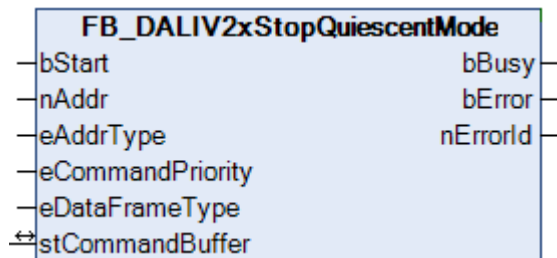
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.1.14 FB_DALIV2xStopQuiescentMode



The function block FB_DALIV2xStopQuiescentMode is used to stop the *quiescent mode* of the control device.

In *Quiescent Mode* the control device does not send commands or events. The *Quiescent Mode* is started by FB_DALIV2xStartQuiescentMode [► 198].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

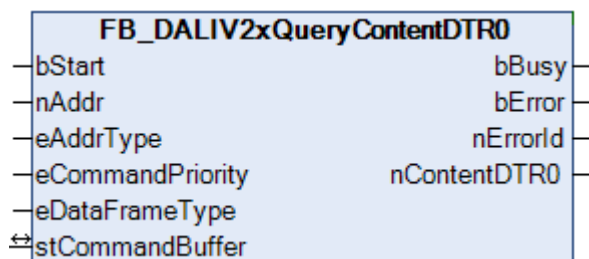
4.1.2.4.2 Query

Function blocks

Name	Description
FB_DALIV2xQueryContentDTR0 [► 201]	Read out the DTR0 (Data Transfer Register).
FB_DALIVx2QueryContentDTR1 [► 202]	Read out the DTR1 (Data Transfer Register 1).
FB_DALIV2xQueryContentDTR2 [► 204]	Read out the DTR2 (Data Transfer Register 2).
FB_DALIV2xQueryDeviceGroups [► 205]	Queries the group allocations of the control unit.
FB_DALIV2xQueryDeviceStatus [► 206]	The function block reads the <i>Device Status</i> of the control unit.
FB_DALIV2xQueryEventFilter [► 207]	Queries the event filter for the respective control unit instance.

Name	Description
FB_DALIV2xQueryEventScheme [► 209]	Queries the addressing scheme for the events of the respective control unit instance
FB_DALIV2xQueryInputDeviceError [► 210]	Queries the <i>Input Device Error</i> of the control unit.
FB_DALIV2xQueryInputValue [► 211]	Queries the first byte of the input value of the control unit instance.
FB_DALIV2xQueryInputValueLatch [► 212]	Queries the following byte of the input value of the control unit instance.
FB_DALIV2xQueryInstanceEnabled [► 214]	Queries whether the control unit instance is enabled.
FB_DALIV2xQueryInstanceError [► 215]	Queries the <i>Instance Error</i> of the control unit.
FB_DALIV2xQueryInstanceStatus [► 216]	Queries the <i>Instance Status</i> of the control unit.
FB_DALIV2xQueryMissingShortAddress [► 217]	Queries whether the control unit does not have a valid short address.
FB_DALIV2xQueryNumberOfInstances [► 219]	Queries the number of instances that the control unit has.
FB_DALIV2xQueryOperatingMode [► 220]	Queries the <i>Operating Mode</i> of the control unit.
FB_DALIV2xQueryPowerCycleNotification [► 221]	Queries whether the <i>Power Cycle Notification</i> event is enabled.
FB_DALIV2xQueryRandomAddressH [► 222]	The higher-order byte of the random address is read from the control unit.
FB_DALIV2xQueryRandomAddressL [► 223]	The lower-order byte of the random address is read from the control unit.
FB_DALIV2xQueryRandomAddressM [► 225]	The mean byte of the random address is read from the control unit.
FB_DALIV2xQueryResetState [► 226]	Queries whether the control gear parameters have their reset values.
FB_DALIV2xQueryResolution [► 227]	Queries the resolution of the input values of the control unit.
FB_DALIV2xQueryVersionNumber [► 228]	Queries the version number of the control unit.
FB_DALIV2xReadMemoryLocation [► 229]	A byte is read from the memory of the control unit.

4.1.2.4.2.1 FB_DALIV2xQueryContentDTR0



The function block FB_DALIV2xQueryContentDTR0 is used to read the content of the DTR0 (Data Transfer Register) from the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

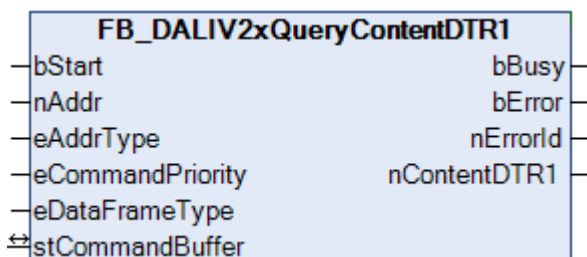
```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
    nContentDTR0 : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR0	BYTE	Contents of DTR0 (D ata T ransfer R egister 0)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.2 FB_DALIV2xQueryContentDTR1



The function block FB_DALIV2xQueryContentDTR1 is used to read the content of the DTR1 (Data Transfer Register) from the control device.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

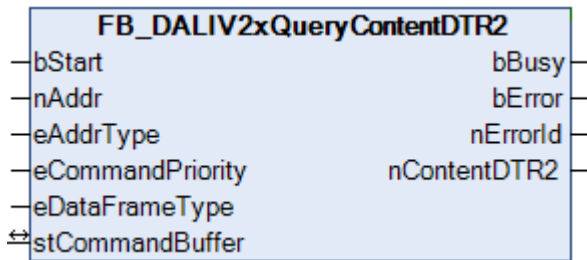
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nContentDTR1 : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR1	BYTE	Contents of the DTR1 (D ata T ransfer R egister)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.3 FB_DALIV2xQueryContentDTR2



The function block FB_DALIV2xQueryContentDTR2 is used to read the content of the DTR2 (Data Transfer Register) from the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nContentDTR2 : BYTE;
END_VAR

```

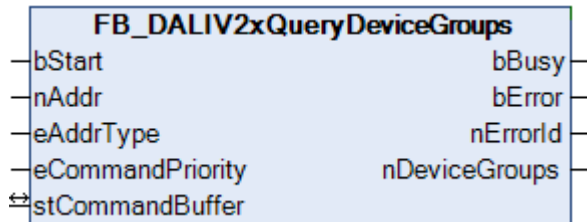
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR2	BYTE	Contents of the DTR2 (D ata T ransfer R egister)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.4 FB_DALIV2xQueryDeviceGroups



The function block FB_DALIV2xQueryDeviceGroups queries the group assignments of the control device.

A total of 32 groups are available to which a control device can be assigned. Each bit of the variable *nDeviceGroups* corresponds to one of these groups. If the bit is set, the control device is assigned to the respective group. Bit 0 corresponds to group 0, bit 31 to group 31.

The function block [FB_DALIV2xAddToDeviceGroups](#) [► 183] can be used to assign a control device to a group.

The function block [FB_DALIV2xRemoveFromDeviceGroups](#) [► 190] can be used to remove a control device from a group.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

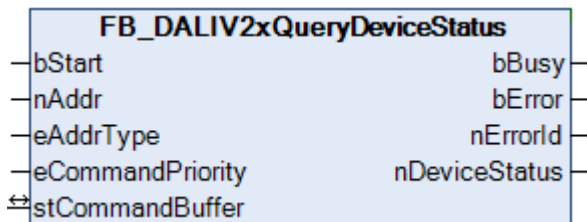
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nDeviceGroups : DWORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDeviceGroups	DWORD	32-bit variable where each bit represents the corresponding group to which the control device has been assigned.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.5 FB_DALIV2xQueryDeviceStatus



The function block FB_DALIV2xQueryDeviceStatus reads the *Device Status* of the control device.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

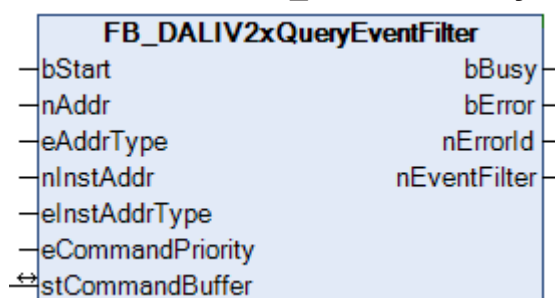
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nDeviceStatus  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDeviceStatus	BYTE	The <i>Device Status</i> of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.6 FB_DALIV2xQueryEventFilter



The function block FB_DALIV2xQueryEventFilter queries the event filter for the respective instance of the control device.

Each bit in *nEventFilter* represents an event. If the bit is set, the associated event is enabled. The event is locked if the bit is not set.

The meaning of the individual bits can be found in the documentation of the respective control device.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
```

```

nInstAddr      : BYTE := 0;
eInstAddrType  : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	<u>E_DALIV2InstAddrType</u> [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nEventFilter : DWORD;
END_VAR

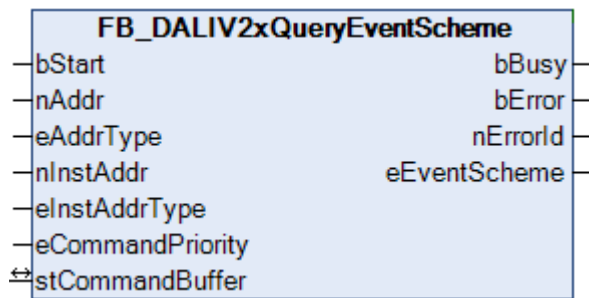
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).
nEventFilter	DWORD	Each bit represents an event that has been enabled or disabled.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.7 FB_DALIV2xQueryEventScheme



The function block FB_DALIV2xQueryEventScheme can be used to query the addressing scheme for the events of the respective instance of the control device.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	<u>E_DALIV2InstAddrType</u> [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    eEventScheme : E_DALIV2EventScheme;
END_VAR
```

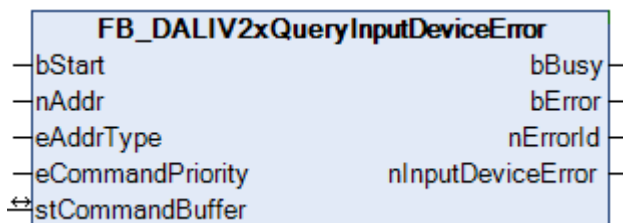
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
eEventScheme	E_DALIV2EventScheme [► 463]	Addressing scheme for the events

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.8 FB_DALIV2xQueryInputDeviceError



The function block FB_DALIV2xQueryInputDeviceError reads the *Input Device Error* of the control device.

The meaning of the *Input Device Error* depends on the manufacturer of the control device.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

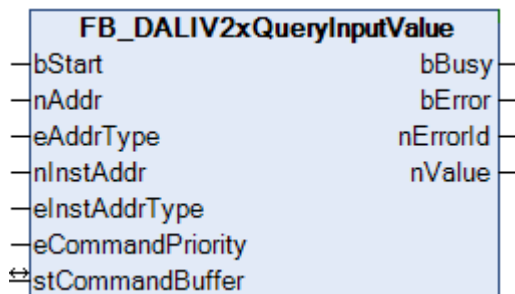
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nInputDeviceError : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nInputDeviceError	BYTE	The <i>Input Device Error</i> of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.9 FB_DALIV2xQueryInputValue



The function block FB_DALIV2xQueryInputValue queries the first byte of the input value of the instance of the control device.

The current input value is stored in memory, and the most significant byte (MSB) is returned.

All other bytes can be read with the function block [FB_DALIV2xQueryInputValueLatch](#) [► 212].

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Outputs

```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nValue         : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nValue	BYTE	The most significant byte (MSB) of the input value

Inputs/outputs

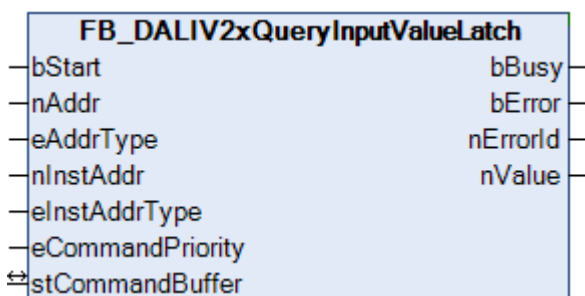
```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.10 FB_DALIV2xQueryInputValueLatch



The function block FB_DALIV2xQueryInputValueLatch queries the following byte of the input value of the instance of the control device.

The first byte is read with the function block [FB_DALIV2xQueryInputValue \[► 211\]](#).

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

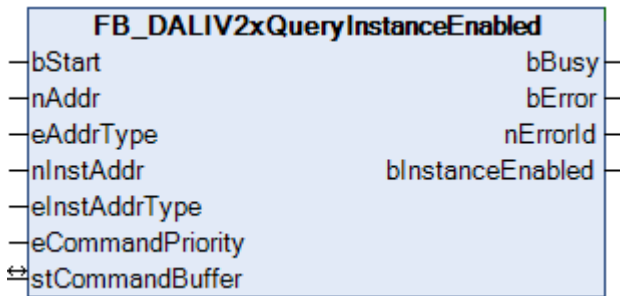
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nValue         : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nValue	BYTE	The most significant byte (MSB) of the input value

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.11 FB_DALIV2xQueryInstanceEnabled



The function block FB_DALIV2xQueryInstanceEnabled queries whether the instance of the control device is enabled.

The function block [FB_DALIV2xDisableInstance](#) [► 184] can be used to disable the instance.

The function block [FB_DALIV2xEnableInstance](#) [► 187] enables the instance of the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bInstanceEnabled : BOOL;
END_VAR

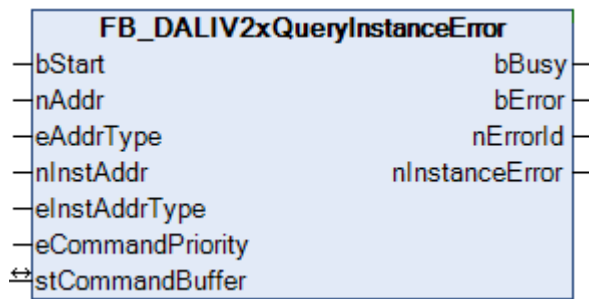
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bInstanceEnabled	BOOL	Is TRUE if the instance has been enabled.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.12 FB_DALIV2xQueryInstanceError



The function block FB_DALIV2xQueryInstanceError reads the *Instance Error* of the control device.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

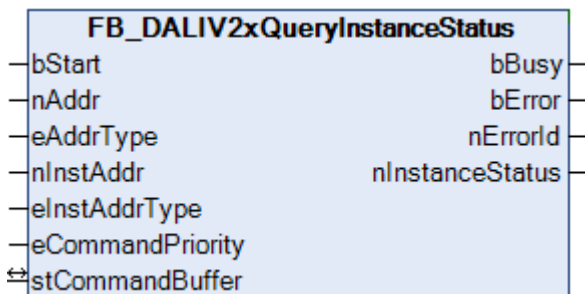
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nInstanceError : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nInstanceError	BYTE	The <i>Instance Error</i> of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.13 FB_DALIV2xQueryInstanceStatus



The function block FB_DALIV2xQueryInstanceStatus reads the *Instance Status* of the control device.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr       : BYTE := 0;
  eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

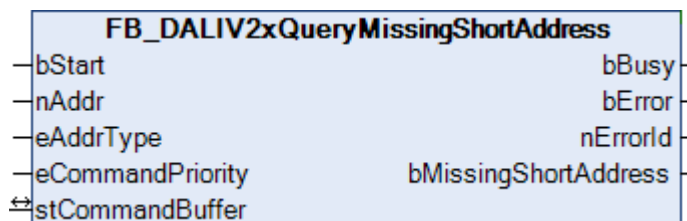
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nInstanceStatus : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nInstanceStatus	BYTE	The <i>Instance Status</i> of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.14 FB_DALIV2xQueryMissingShortAddress



The function block FB_DALIV2xQueryMissingShortAddress queries whether the control device does not have a valid short address.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

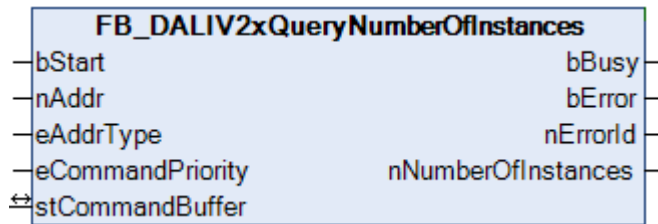
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bMissingShortAddress : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bMissingShortAddress	BOOL	Is TRUE if the control device does not have a valid short address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.15 FB_DALIV2xQueryNumberOfInstances



The function block FB_DALIV2xQueryNumberOfInstances queries the number of instances that the control device has.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nNumberOfInstances: BYTE;
END_VAR

```

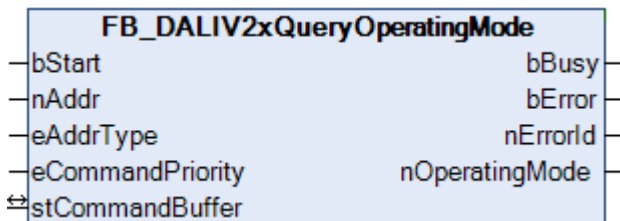
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Name	Type	Description
nNumberOfInstances	BYTE	Number of instances of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.16 FB_DALIV2xQueryOperatingMode



The function block FB_DALIV2xQueryOperatingMode queries the *Operating Mode* of the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nOperatingMode : BYTE;
END_VAR

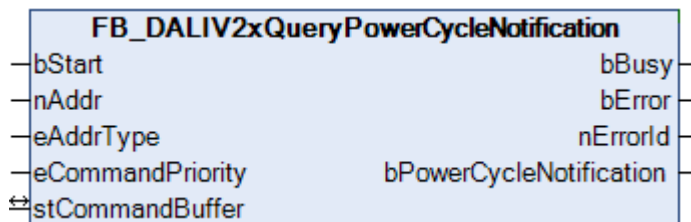
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nOperatingMode	BYTE	Value of OPERATING MODE

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.17 FB_DALIV2xQueryPowerCycleNotification



The function block FB_DALIV2xQueryPowerCycleNotification queries whether the *Power Cycle Notification* event has been enabled.

The function block [FB_DALIV2xDisablePowerCycleNotification](#) [► 186] can be used to lock the event.

The function block [FB_DALIV2xEnablePowerCycleNotification](#) [► 188] can be used to enable the event.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

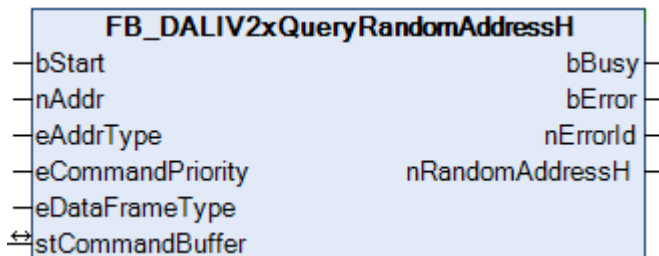
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  bPowerCycleNotification : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bPowerCycleNotification	BOOL	Is TRUE if the <i>Power Cycle Notification</i> event is enabled.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.18 FB_DALIV2xQueryRandomAddressH



The function block FB_DALIV2xQueryRandomAddressH reads the high-order byte of the random address from the control device.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

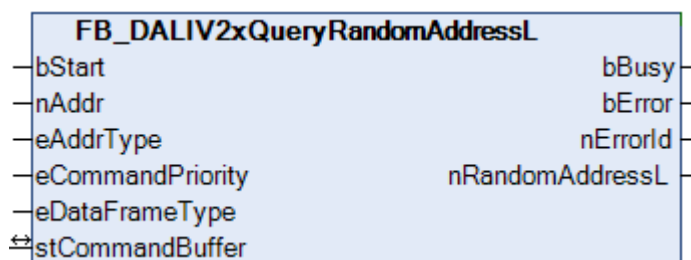
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRandomAddressH : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressH	BYTE	The high-order byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.19 FB_DALIV2xQueryRandomAddressL



The function block FB_DALIV2xQueryRandomAddressL reads the low-order byte of the random address from the control device.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

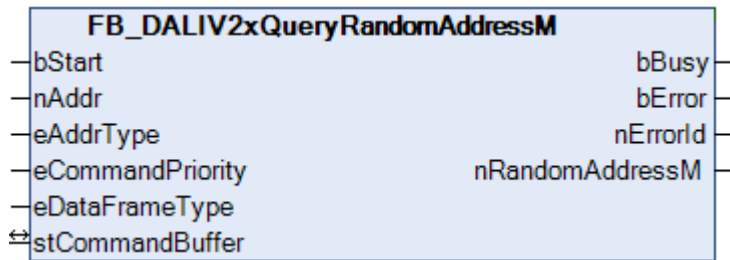
```
VAR_OUTPUT
  bBusy       : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
  nRandomAddressL : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressL	BYTE	The low-order byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.20 FB_DALIV2xQueryRandomAddressM



The function block FB_DALIV2xQueryRandomAddressM reads the middle byte of the random address from the control device.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DataFrameType [► 463]	Output format of the DALI command (eDALIV2DataFrameType24Bit or eDALIV2DataFrameTypeOsram)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRandomAddressM : BYTE;
END_VAR

```

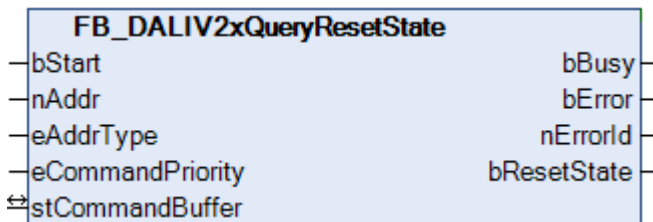
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRandomAddressM	BYTE	The middle byte of the random address/long address

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.21 FB_DALIV2xQueryResetState



The function block FB_DALIV2xQueryResetState queries whether the parameters of the control device have their reset values.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

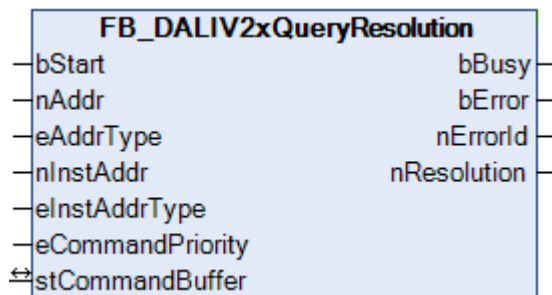
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  bResetState : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bResetState	BOOL	Is TRUE if the control device parameters have the reset values.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.22 FB_DALIV2xQueryResolution



The function block FB_DALIV2xQueryResolution queries the resolution of the input values of the control device.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

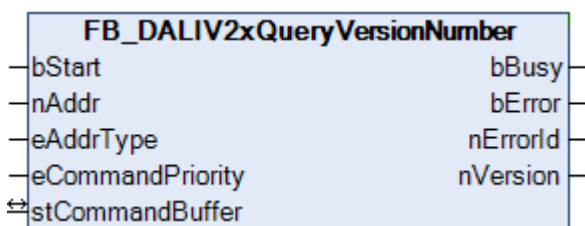
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nResolution    : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nResolution	BYTE	Resolution of the input values

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.23 FB_DALIV2xQueryVersionNumber



The function block FB_DALIV2xQueryVersionNumber queries the version number of the control device.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

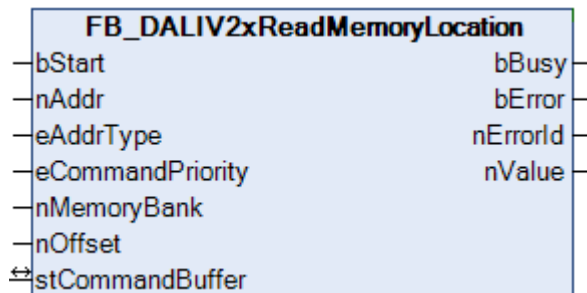
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nVersion   : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nVersion	BYTE	The version number of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.2.24 FB_DALIV2xReadMemoryLocation



The function block FB_DALIV2xReadMemoryLocation is used to read a byte from the control device's memory. The exact memory bank is specified by the parameter *nMemoryBank* and the address within the memory bank by the parameter *nOffset*.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nMemoryBank : BYTE := 0;
  nOffset     : BYTE := 0;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMemoryBank	BYTE	The memory bank to be accessed.
nOffset	BYTE	The address within the memory bank to be accessed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
  nValue  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nValue	BYTE	Byte read from the control gear memory

Requirements

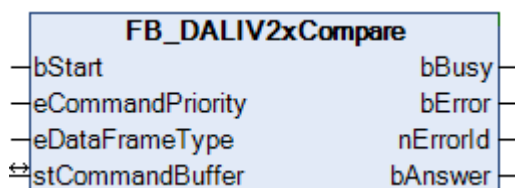
Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3 Special commands

Function blocks

Name	Description
FB_DALIV2xCompare [► 231]	The control device compares its random address with the search address.
FB_DALIV2xDTR0 [► 232]	Writes an 8-bit value to the DTR0 of all control devices.
FB_DALIV2xDTR1 [► 234]	Writes an 8-bit value to the DTR1 of all control devices.
FB_DALIV2xDTR2 [► 235]	Writes an 8-bit value to the DTR2 of all control devices.
FB_DALIV2xInitialise [► 236]	Starts the addressing of the control devices.
FB_DALIV2xProgramShortAddress [► 237]	All selected control devices save the short address.
FB_DALIV2xQueryShortAddress [► 238]	If the random address is the same as the search address, the control device sends its short address.
FB_DALIV2xRandomise [► 239]	The control devices generate a new random address.
FB_DALIV2xSearchAddrH [► 240]	This function block sets the upper 8 bits of the 24-bit search address.
FB_DALIV2xSearchAddrL [► 242]	This function block sets the lower 8 bits of the 24-bit search address.
FB_DALIV2xSearchAddrM [► 243]	This function block sets the middle 8 bits of the 24-bit search address.
FB_DALIV2xTerminate [► 244]	Addressing is terminated for all control devices.
FB_DALIV2xVerifyShortAddress [► 245]	If the short address of the control device is equal to the parameter <i>nShortAddress</i> , the output <i>bAnswer</i> is set to TRUE.
FB_DALIV2xWithdraw [► 246]	Control devices whose random address is the same as the search address may no longer respond to the command FB_DALIV2xCompare.
FB_DALIV2xWriteMemoryLocation [► 247]	Writes an 8-bit value into the memory of a control gear.

4.1.2.4.3.1 FB_DALIV2xCompare



The control gear compares its random address with the search address. If the random address is less than or equal to the search address and the control device is not excluded, then the output *bAnswer* is set to TRUE.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
    bAnswer : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bAnswer	BOOL	The random address is smaller than or equal to the search address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.2 FB_DALIV2xDTR0



This command is only available as a broadcast. The DTR0 of all control devices is described.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDTR0       : BYTE;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR0	BYTE	The value that is to be written into the DTR0.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.3 FB_DALIV2xDTR1



This command is only available as a broadcast. The DTR1 of all control devices is described.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDTR1       : BYTE;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR1	BYTE	The value that is to be written into the DTR1.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

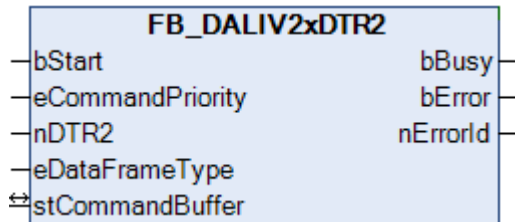
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.4 FB_DALIV2xDTR2



This command is only available as a broadcast. The DTR2 of all control devices is described.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDTR2       : BYTE;
    eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR2	BYTE	The value that is to be written into the DTR2.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

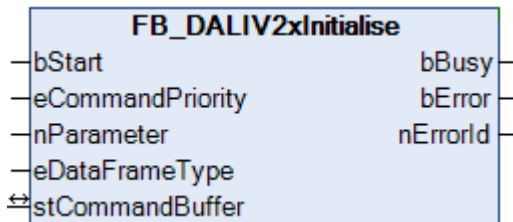
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.5 FB_DALIV2xInitialise



This command starts the addressing procedure for the control devices. Addressing must be terminated again using the function block [FB_DALIV2xTerminate](#) [► 244]. The maximum duration is limited to 15 minutes. Each control device automatically terminates addressing after 15 minutes. The response of the control devices receiving this command depends on the parameter *nParameter*:

eDataFrameType = eDataFrameTypeOsram:

Value (binary)	Description
0000 0000	All control devices respond.
0AAA AAA1	Control devices with the address AAA AAA respond.
1111 1111	Control devices without a short address respond.

eDataFrameType = eDataFrameType24Bit:

Value (binary)	Description
0111 1111	Control devices without a short address respond.
00AA AAAA	Control devices with the address AAA AAA respond.
1111 1111	All control devices respond.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nParameter      : BYTE;
  eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nParameter	BYTE	Specifies which control gears should respond to this command (see table above).
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer    : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

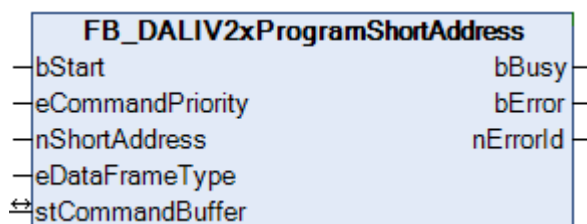
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.6 FB_DALIV2xProgramShortAddress



All selected control devices save the value *nShortAddress* as a short address.

Selected means:

- The random address of the control device matches the search address.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nShortAddress : BYTE;
    eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShortAddress	BYTE	Short address to be assigned to the selected control devices (0 - 63).
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

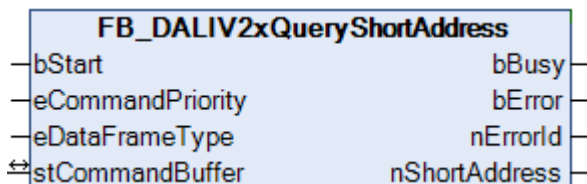
```
VAR_OUTPUT
  bBusy : BOOL;
  bError : BOOL;
  nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.7 FB_DALIV2xQueryShortAddress



If the control device is selected, it sends its short address.

Selected means:

- The random address of the control device matches the search address.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [▶ 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DALIV2DataFrameType [▶ 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [▶ 82] (KL6821).

Outputs

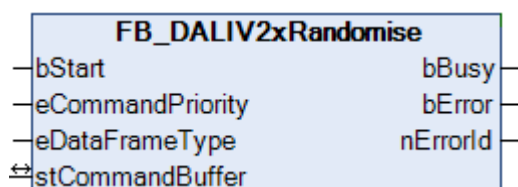
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nShortAddress : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [▶ 438]).
nShortAddress	BYTE	Short address of the control gear (0 - 63)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.8 FB_DALIV2xRandomise



The control devices generate a new random address.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

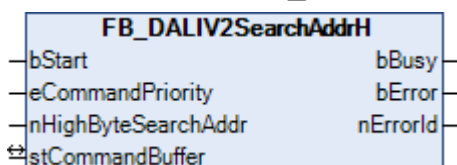
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.9 FB_DALIV2xSearchAddressH



The function block FB_DALIV2xSearchAddressH sets the upper 8 bits of the 24-bit search address.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nHighByteSearchAddr : BYTE;
    eDataFrameType   : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nHighByteSearchAddr	BYTE	The upper 8 bits of the 24-bit search address
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <i>FB_KL6821Communication</i> [► 82] (KL6821).

Outputs

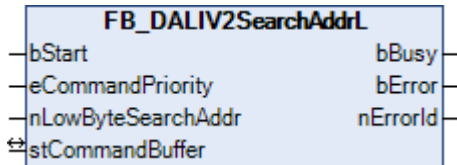
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.10 FB_DALIV2xSearchAddressL



The function block FB_DALIV2xSearchAddressL sets the lower 8 bits of the 24-bit search address.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nLowByteSearchAddr : BYTE;
    eDataFrameType   : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nLowByteSearchAddr	BYTE	The lower 8 bits of the 24-bit search address
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

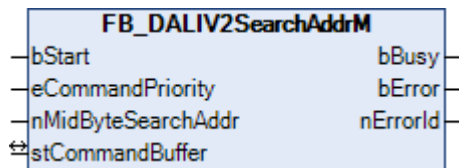
```
VAR_OUTPUT
    bBusy   : BOOL;
    bError   : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.11 FB_DALIV2xSearchAddressM



The function block FB_DALIV2xSearchAddressM sets the middle 8 bits of the 24-bit search address.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nMidByteSearchAddr : BYTE;
    eDataFrameType   : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMidByteSearchAddr	BYTE	The middle 8 bits of the 24-bit search address
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Inputs/outputs

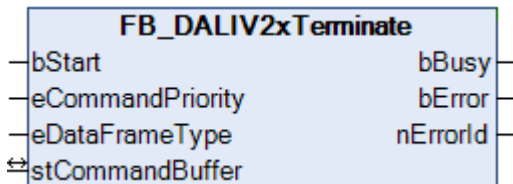
```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.12 FB_DALIV2xTerminate



The function block FB_DALIV2xTerminate terminates addressing for all control devices.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

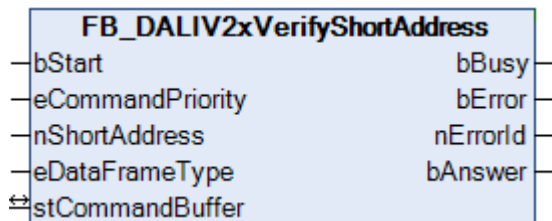
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.13 FB_DALIV2xVerifyShortAddress



If the short address of the control device is equal to the parameter *nShortAddress*, the output *bAnswer* is set to TRUE.

Inputs

```

VAR_INPUT
  bStart          : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nShortAddress   : BYTE;
  eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShortAddress	BYTE	Short address with which the own short address is to be compared.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

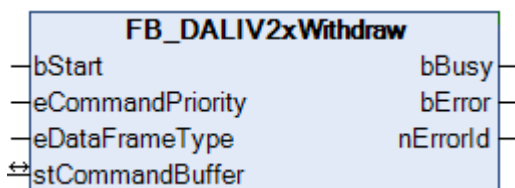
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  bAnswer    : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bAnswer	BOOL	The parameter <i>nShortAddress</i> is the same as its own short address.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.14 FB_DALIV2xWithdraw



Control devices whose random address is the same as the search address may no longer respond to the command `FB_DALIV2xCompare` [► 231].

🔌 Inputs

```
VAR_INPUT
  bStart          : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDataFrameType  : E_DALIV2DataFrameType := eDALIV2DataFrameType24Bit;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDataFrameType	E_DALIV2DataFrameType [► 463]	Output format of the DALI command (<i>eDALIV2DataFrameType24Bit</i> or <i>eDALIV2DataFrameTypeOsram</i>)

🔌/🔌 Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

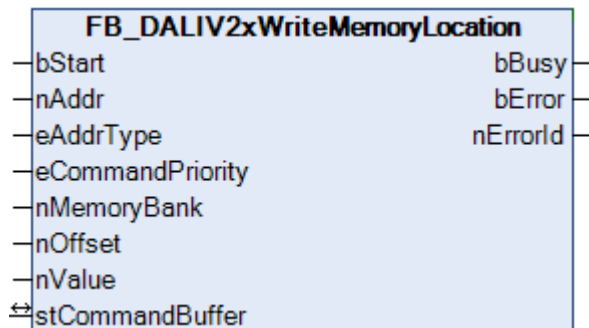
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.4.3.15 FB_DALIV2xWriteMemoryLocation



The value *nValue* is written to the memory bank of the control device. The exact memory bank is specified by *nMemoryBank* and the address within the memory bank by *nOffset*.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nMemoryBank : BYTE;
  nOffset     : BYTE;
  nValue      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nMemoryBank	BYTE	The memory bank to be accessed.
nOffset	BYTE	The address within the memory bank to be accessed.
nValue	BYTE	Value to be written to the memory bank of the control gear.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.5 Part 202 (emergency lighting)

The function blocks and variables for emergency lighting supply units with DALI interface are described below. All function blocks described below call "application extended commands". According to the DALI standard (IEC 62386) these commands are within the range 224 to 255. Because of the existence of a variety of application extended commands, it is necessary to use the function block FB_DALIV2EnableDeviceType [► 92] to specify which type of control gears (emergency lighting, discharge lamps, ...) should respond to these commands. A detailed description of the individual DALI commands and the variables for emergency lighting supply units can be found in Part 202 of the IEC 62386 standard.



Name	Description
FB_DALIV2Inhibit [► 255]	Prevents the control gear from switching to emergency mode for 15 minutes.
FB_DALIV2QueryBatteryCharge [► 256]	The variable <u>BATTERY CHARGE</u> [► 250] (state of battery charge) is read from the control gear.
FB_DALIV2QueryDurationTestResult [► 257]	The variable <u>DURATION TEST RESULT</u> [► 250] is read from the control gear.
FB_DALIV2QueryEmergencyLevel [► 258]	The variable <u>EMERGENCY LEVEL</u> [► 250] (emergency illuminance) is read from the control gear.
FB_DALIV2QueryEmergencyMaxLevel [► 260]	The variable <u>EMERGENCY MAX LEVEL</u> [► 250] (maximum emergency illuminance) is read from the control gear.
FB_DALIV2QueryEmergencyMinLevel [► 261]	The variable <u>EMERGENCY MIN LEVEL</u> [► 250] (minimum emergency illuminance) is read from the control gear.
FB_DALIV2QueryEmergencyMode [► 262]	The variable <u>EMERGENCY MODE</u> [► 250] is read from the control gear.
FB_DALIV2QueryEmergencyStatus [► 264]	The variable <u>EMERGENCY STATUS</u> [► 250] is read from the control gear.
FB_DALIV2QueryFailureStatus [► 265]	The variable <u>FAILURE STATUS</u> [► 250] is read from the control gear.
FB_DALIV2QueryFeatures [► 266]	The variable <u>FEATURES</u> [► 250] is read from the control gear.
FB_DALIV2QueryLampEmergencyTime [► 268]	The variable <u>LAMP EMERGENCY TIME</u> [► 250] is read from the control gear.
FB_DALIV2QueryLampTotalOperationTime [► 269]	The variable <u>LAMP TOTAL OPERATION TIME</u> [► 250] is read from the control gear.
FB_DALIV2QueryRatedDuration [► 270]	The variable <u>RATED DURATION</u> [► 250] is read from the control gear.
FB_DALIV2QueryTestTiming [► 272]	Depending on the content of the DTR (data transfer register) the variables <u>FUNCTION TEST DELAY TIME</u> [► 250], <u>DURATION TEST DELAY TIME</u> [► 250], <u>FUNCTION TEST INTERVAL</u> [► 250], <u>DURATION TEST INTERVAL</u> [► 250], <u>TEST EXECUTION TIMEOUT</u> [► 250] or <u>PROLONG TIME</u> [► 250] are read from the control gear.
FB_DALIV2ReLightResetInhibit [► 273]	The control gear is switched back to emergency mode (in the absence of mains voltage).
FB_DALIV2ResetDurationTestDoneFlag [► 275]	The 'Duration test completed and result is valid' flag is reset.
FB_DALIV2ResetFunctionTestDoneFlag [► 276]	The 'Function test completed and result is valid' flag is reset.
FB_DALIV2ResetLampTime [► 277]	The variables <u>LAMP EMERGENCY TIME</u> [► 250] und <u>LAMP TOTAL OPERATION TIME</u> [► 250] are reset.
FB_DALIV2Rest [► 278]	Switches the lamp off when emergency mode is active.
FB_DALIV2StartDurationTest [► 280]	Starts the duration test.
FB_DALIV2StartFunctionTest [► 281]	Starts the function test.
FB_DALIV2StopTest [► 282]	Stops any type of function test or duration test.
FB_DALIV2StoreDTRAsDurationTestInterval [► 283]	Writes the value of the DTR (data transfer register) into the variable <u>DURATION TEST INTERVAL</u> [► 250].

Name	Description
FB_DALIV2StoreDTRAsEmergencyLevel [► 284]	Writes the value of the DTR (data transfer register) into the variable EMERGENCY LEVEL [► 250].
FB_DALIV2StoreDTRAsFunctionTestInterval [► 286]	Writes the value of the DTR (data transfer register) into the variable FUNCTION TEST INTERVAL [► 250].
FB_DALIV2StoreDTRAsProlongTime [► 287]	Writes the value of the DTR (data transfer register) into the variable PROLONG TIME [► 250].
FB_DALIV2StoreDTRAsTestDelayTimeHighByte [► 288]	Writes the value of the DTR (data transfer register) into the high-order byte of variable TEST DELAY TIME [► 250].
FB_DALIV2StoreDTRAsTestDelayTimeLowByte [► 289]	Writes the value of the DTR (data transfer register) into the low-order byte of the variable TEST DELAY TIME [► 250].
FB_DALIV2StoreDTRAsTestExecutionTimeout [► 290]	Writes the value of the DTR (data transfer register) into the variable TEST EXECUTION TIMEOUT [► 250].



These commands belong to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

4.1.2.5.1 Variables

Each DALI emergency lighting supply unit has a certain number of variables (parameters) from which various information can be read or individual parameters be modified.

Name	Default value	Reset value	Scope	Size	Comment
EMERGENCY LEVEL [► 251]	EMERGENCY MAX LEVEL	No change	EMERGENCY MIN LEVEL ... EMERGENCY MAX LEVEL or MASK	1 byte	
EMERGENCY MIN LEVEL [► 251]	Manufacturer dependent	No change	1 ... EMERGENCY MAX LEVEL or MASK	1 byte	read only
EMERGENCY MAX LEVEL [► 251]	Manufacturer dependent	No change	EMERGENCY MIN LEVEL ... 254 or MASK	1 byte	read only
PROLONG TIME [► 251]	4	No change	0 ... 255	1 byte	
TEST DELAY TIME [► 252]	0	0	00 00 ... FF FF	2 bytes	
FUNCTION TEST DELAY TIME [► 252]	0	No change	00 00 ... FF FF	2 bytes	
DURATION TEST DELAY TIME [► 252]	0	No change	00 00 ... FF FF	2 bytes	
FUNCTION TEST INTERVAL [► 252]	7	No change	0, 1 ... 255	1 byte	
DURATION TEST INTERVAL [► 253]	13	No change	0, 1 ... 97	1 byte	

Name	Default value	Reset value	Scope	Size	Comment
TEST EXECUTION TIMEOUT [► 253]	7	No change	0 ... 255	1 byte	
BATTERY CHARGE [► 253]	???? ????	No change	0 ... 255	1 byte	
DURATION TEST RESULT [► 253]	0	No change	0 ... 255	1 byte	
LAMP EMERGENCY TIME [► 253]	0	No change	0 ... 255	1 byte	
LAMP TOTAL OPERATION TIME [► 253]	0	No change	0 ... 255	1 byte	
RATED DURATION [► 253]	Manufacturer dependent	No change	0 ... 255	1 byte	read only
EMERGENCY MODE [► 253]	???? ????	No change	0 ... 255	1 byte	
FEATURES [► 254]	Manufacturer dependent	No change	0 ... 255	1 byte	read only
FAILURE STATUS [► 254]	???? ????	No change	0 ... 255	1 byte	
EMERGENCY STATUS [► 254]	???? ????	No change	0 ... 255	1 byte	
EXTENDED VERSION NUMBER [► 254]	1	No change	0 ... 255	1 byte	read only

?: undetermined

EMERGENCY LEVEL

This variable contains the emergency illuminance of the lamp. This value is limited via the variables EMERGENCY MAX LEVEL and EMERGENCY MIN LEVEL. The function block [FB_DALIV2QueryEmergencyLevel \[► 258\]](#) can be used to read the value.

EMERGENCY MIN LEVEL/ EMERGENCY MAX LEVEL

The emergency illuminance is limited via the variables EMERGENCY MIN LEVEL and EMERGENCY MAX LEVEL within the control gear. The exceptions to this are power values of 0 (off) and 255 (mask). The values EMERGENCY MIN LEVEL and EMERGENCY MAX LEVEL are specified by the manufacturer of the control gear. The function blocks [FB_DALIV2QueryEmergencyMinLevel \[► 261\]](#) and [FB_DALIV2QueryEmergencyMaxLevel \[► 260\]](#) can be used to read the two variables from the control gear.

PROLONG TIME

The prolong time defines how long emergency mode is extended after mains voltage is available again. The unit is 30 seconds per step. The value can be read from the control gear via the function block [FB_DALIV2QueryTestTiming \[► 272\]](#). The function block [FB_DALIV2StoreDTRAsProlongTime \[► 287\]](#) is used to write to this variable.

TEST DELAY TIME

The variables FUNCTION TEST DELAY TIME, DURATION TEST DELAY TIME FUNCTION TEST INTERVAL and DURATION TEST INTERVAL are set by means of the TEST DELAY TIME variable. This specifies the time behavior associated with the function test and the duration test as follows:

Function test:

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the high-order byte for the variable FUNCTION TEST DELAY TIME to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsTestDelayTimeHighByte \[► 288\]](#) to write the content of the DTR to the high-order byte of the 16-bit variable TEST DELAY TIME.

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the low-order byte for the variable FUNCTION TEST DELAY TIME to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsTestDelayTimeLowByte \[► 289\]](#) to write the content of the DTR to the low-order byte of the 16-bit variable TEST DELAY TIME.

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the value for the variable FUNCTION TEST INTERVAL to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsFunctionTestInterval \[► 286\]](#) to write the content of the DTR to the variable FUNCTION TEST INTERVAL. The content of the variable TEST DELAY TIME is also copied into the variable FUNCTION TEST DELAY TIME.

Duration test:

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the high-order byte for the variable DURATION TEST DELAY TIME to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsTestDelayTimeHighByte \[► 288\]](#) to write the content of the DTR to the high-order byte of the 16-bit variable TEST DELAY TIME.

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the low-order byte for the variable DURATION TEST DELAY TIME to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsTestDelayTimeLowByte \[► 289\]](#) to write the content of the DTR to the low-order byte of the 16-bit variable TEST DELAY TIME.

Use [FB_DALIV2SetDTR \[► 448\]](#) to write the value for the FUNCTION TEST INTERVAL variable (interval time for the function test) to the DTR (Data Transfer Register).

Use [FB_DALIV2StoreDTRAsDurationTestInterval \[► 283\]](#) to write the content of the DTR to the variable DURATION TEST INTERVAL. The content of the variable TEST DELAY TIME is also copied into the variable DURATION TEST DELAY TIME.

FUNCTION TEST DELAY TIME

This variable is used to specify the delay time for the function test. Once this time has elapsed, the function test is executed for the first time. The unit of this variable is 15 minutes per step. This variable can be queried via the function block [FB_DALIV2QueryTestTiming \[► 272\]](#). TEST DELAY TIME is used to write to this variable (see above).

DURATION TEST DELAY TIME

This variable is used to specify the delay time for the duration test. Once this time has elapsed, the duration test is executed for the first time. The unit of this variable is 15 minutes per step. This variable can be queried via the function block [FB_DALIV2QueryTestTiming \[► 272\]](#). TEST DELAY TIME is used to write to this variable (see above).

FUNCTION TEST INTERVAL

This variable is used to specify the interval time for the function test. The function test is executed periodically at these intervals. The unit of this variable is 1 day per step. This variable can be queried via the function block [FB_DALIV2QueryTestTiming \[► 272\]](#). TEST DELAY TIME is used to write to this variable (see above).

DURATION TEST INTERVAL

This variable is used to specify the interval time for the duration test. The duration test is executed periodically at these intervals. The unit of this variable is 1 week per step. This variable can be queried via the function block [FB_DALIV2QueryTestTiming](#) [► 272]. TEST DELAY TIME is used to write to this variable (see above).

TEST EXECUTION TIMEOUT

The function test or duration test can be interrupted through various events. The variable TEST EXECUTION TIMEOUT can be used to specify the maximum execution time within which the respective test must be completed. The unit of this variable is 1 day per step. This variable can be queried via the function block [FB_DALIV2QueryTestTiming](#) [► 272]. The function block [FB_DALIV2StoreDTRAsTestExecutionTimeout](#) [► 290] is used to write to this variable.

BATTERY CHARGE

The current state of battery charge can be retrieved via this variable. 0 means minimum load, 254 means maximum load. If the control gear is unable to determine the state of charge, this variable contains the value 255. This variable can be read with the function block [FB_DALI2QueryBatteryCharge](#) [► 256].

DURATION TEST RESULT

The result of a duration test is stored in this variable. The unit is 2 minutes per step. The value is only valid if bit 2 is set in the variable EMERGENCY STATUS (see below). The variable DURATION TEST RESULT can be queried with the function [FB_DALIV2QueryDurationTestResult](#) [► 257].

LAMP EMERGENCY TIME

The emergency mode operating period of the lamp (supply via rechargeable batteries) is stored in this variable. The unit is 1 hour per step. This variable can be queried with the function block [FB_DALIV2QueryLampEmergencyTime](#) [► 268] and reset with the function block [FB_DALIV2ResetLampTime](#) [► 277].

LAMP TOTAL OPERATION TIME

The total lamp operation time is stored in this variable. The unit is 4 hours per step. This variable is queried with the function block [FB_DALIV2QueryLampTotalOperationTime](#) [► 269] and reset with the function block [FB_DALIV2ResetLampTime](#) [► 277].

RATED DURATION

The nominal operation time of the rechargeable battery is stored in this variable. The unit is 2 minutes per step. The value is specified by the manufacturer of the control gear and can be read with the function block [FB_DALIV2QueryRatedDuration](#) [► 270].

EMERGENCY MODE

In EMERGENCY MODE the control gear stores the current mode. The variable can be read with the function block [FB_DALIV2QueryEmergencyMode](#) [► 262].

Bit	Description
0	Reset mode. 0: no.
1	Emergency mode readiness (normal operation). 0: no.
2	Emergency mode. 0: no.
3	Extended emergency mode once mains voltage is available again. 0: no.
4	Function test active. 0: no.
5	Duration test active. 0: no.
6	Connected suppress push button is active. 0: not active or not available.
7	Connected mains voltage is active. 0: OFF.

FEATURES

The supported features of the control gear can be read from this variable using the function block [FB_DALIV2QueryFeatures](#) [► 266]. The content of this variable is specified by the manufacturer of the control gear and cannot be modified.

Bit	Description
0	Integrated emergency lighting supply unit. 0: no.
1	Emergency lighting supply unit in continuous mode. 0: no.
2	Switchable emergency lighting supply unit in continuous mode. 0: no.
3	Auto test capability. 0: no.
4	Adjustable emergency lighting illuminance. 0: no.
5	Connected suppress push button is supported. 0: no.
6	Physical selection is supported. 0: no.
7	reserve

FAILURE STATUS

Possible failure states are displayed in this variable and can be read with the function block [FB_DALIV2QueryFailureStatus](#) [► 265].

Bit	Description
0	Error in the control gear circuit. 0: no.
1	Battery operation time fault. 0: no.
2	Battery fault. 0: no.
3	Emergency lamp fault. 0: no.
4	Timeout during function test. 0: no.
5	Timeout during duration test. 0: no.
6	Function test failed. 0: no.
7	Duration test failed. 0: no

EMERGENCY STATUS

The current state of the control gear is displayed. The function block [FB_DALIV2QueryEmergencyStatus](#) [► 264] can be used to read the content of the variable.

Bit	Description
0	Inhibit mode. 0: no.
1	Function test is completed and result is valid. 0: no.
2	Duration test is completed and result is valid. 0: no.
3	Battery charger ready for operation. 0: running.
4	Start of function test delayed. 0: no.
5	Start of duration test delayed. 0: no.
6	Identification active. 0: no.
7	Selected. 0: no

EXTENDED VERSION NUMBER

The extended version number can be read with the function block [FB_DALIV2QueryExtendedVersionNumber](#). The version number can only be read, and is specified by the manufacturer of the control gears.

4.1.2.5.2 FB_DALIV2Inhibit



Prevents the control gear from switching to emergency mode for 15 minutes. The function block FB_DALIV2Inhibit can be used to disable inhibition of emergency mode.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

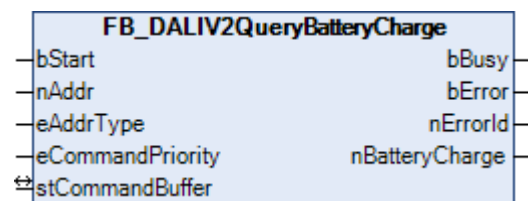
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.3 FB_DALIV2QueryBatteryCharge



The variable [BATTERY CHARGE](#) [► 250] (state of battery charge) is read from the control gear. 255 is returned if the control gear is unable to determine the value.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

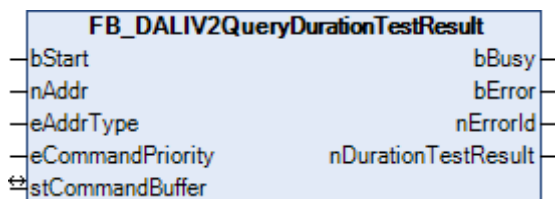
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nBatteryCharge : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nBatteryCharge	BYTE	Battery charge status. 0: empty / 254: full

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.4 FB_DALIV2QueryDurationTestResult



The variable [DURATION TEST RESULT](#) [► 250] is read from the control gear. The unit is 2 minutes per step. 255 means a maximum value of 8.5 hours or more. The value is only valid if bit 2 is set in the variable [EMERGENCY STATUS](#) [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

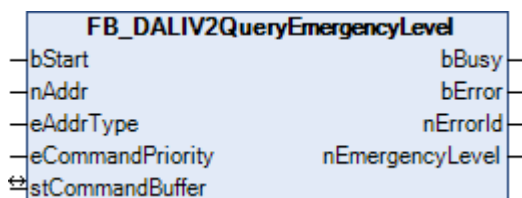
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nDurationTestResult : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDurationTestResult	BYTE	The result of the duration test in steps of 2 minutes

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.5 FB_DALIV2QueryEmergencyLevel



The variable [EMERGENCY LEVEL \[► 250\]](#) (emergency illuminance) is read from the control gear. 255 is returned if the control gear is unable to determine the value.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

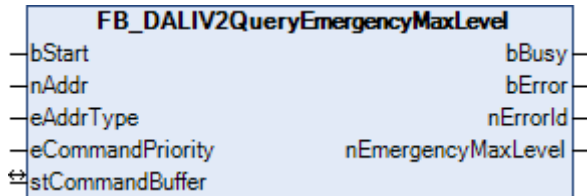
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nEmergencyLevel : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nEmergencyLevel	BYTE	Emergency illuminance of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.6 FB_DALIV2QueryEmergencyMaxLevel



The variable EMERGENCY MAX LEVEL [► 250] is read from the control gear. 255 is returned if the control gear is unable to determine the value.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nEmergencyMaxLevel : BYTE;
END_VAR
```

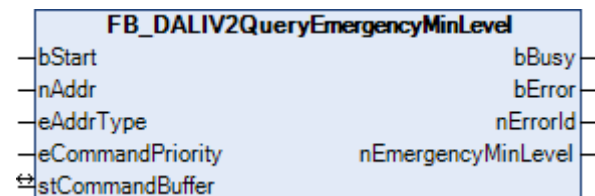
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nEmergencyMaxLevel	BYTE	Maximum emergency illuminance of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.7 FB_DALIV2QueryEmergencyMinLevel



The variable [EMERGENCY MIN LEVEL](#) [► 250] is read from the control gear. 255 is returned if the control gear is unable to determine the value.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nEmergencyMinLevel : BYTE;
END_VAR

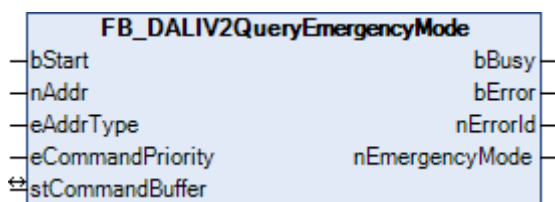
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nEmergencyMinLevel	BYTE	Minimum emergency illuminance of the control device

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.8 FB_DALIV2QueryEmergencyMode



The [EMERGENCY MODE \[► 250\]](#) variable is read from the control gear.

Bit	Description
0	Reset mode. 0: no.
1	Emergency mode readiness (normal operation). 0: no.
2	Emergency mode. 0: no.
3	Extended emergency mode once mains voltage is available again. 0: no.
4	Function test active. 0: no.
5	Duration test active. 0: no.
6	Connected suppress push button is active. 0: not active or not available.
7	Connected mains voltage is active. 0: OFF.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

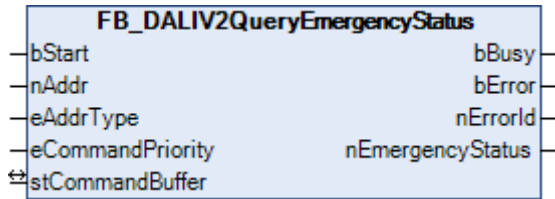
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nEmergencyMode : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nEmergencyMode	BYTE	Emergency mode (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.9 FB_DALIV2QueryEmergencyStatus



The variable EMERGENCY STATUS [► 250] is read from the control gear.

Bit	Description
0	Inhibit mode. 0: no.
1	Function test is completed and result is valid. 0: no.
2	Duration test is completed and result is valid. 0: no.
3	Battery charger ready for operation. 0: running.
4	Start of function test delayed. 0: no.
5	Start of duration test delayed. 0: no.
6	Identification active. 0: no.
7	Selected. 0: no



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

🔌 Outputs

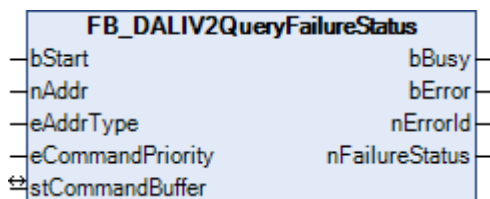
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nEmergencyStatus : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nEmergencyStatus	BYTE	Emergency status (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.10 FB_DALIV2QueryFailureStatus



The variable `FAILURE STATUS` [► 250] is read from the control gear.

Bit	Description
0	Error in the control gear circuit. 0: no.
1	Battery operation time fault. 0: no.
2	Battery fault. 0: no.
3	Emergency lamp fault. 0: no.
4	Timeout during function test. 0: no.
5	Timeout during duration test. 0: no.
6	Function test failed. 0: no.
7	Duration test failed. 0: no



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nFailureStatus : BYTE;
END_VAR

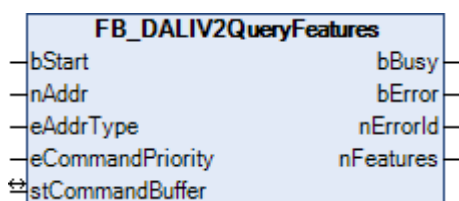
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFailureStatus	BYTE	Control gear failure status (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.11 FB_DALIV2QueryFeatures



The variable `FEATURES` [► 250] is read from the control gear.

Bit	Description
0	Integrated emergency lighting supply unit. 0: no.
1	Emergency lighting supply unit in continuous mode. 0: no.
2	Switchable emergency lighting supply unit in continuous mode. 0: no.
3	Auto test capability. 0: no.
4	Adjustable emergency lighting illuminance. 0: no.
5	Connected suppress push button is supported. 0: no.
6	Physical selection is supported. 0: no.
7	Reserve



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nFeatures  : BYTE;
END_VAR
```

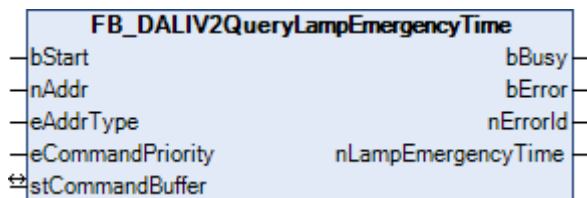
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFeatures	BYTE	Features of the control gear (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.12 FB_DALIV2QueryLampEmergencyTime



The variable LAMP EMERGENCY TIME [► 250] is read from the control gear. The unit is 1 hour per step. 255 means a maximum value of 254 hours or more. The variable is always incremented at the start of the 1-hour interval. Once the maximum value of 255 is reached, it is not increased further. The variable is reset via the command FB_DALIV2ResetLampTime [► 277].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

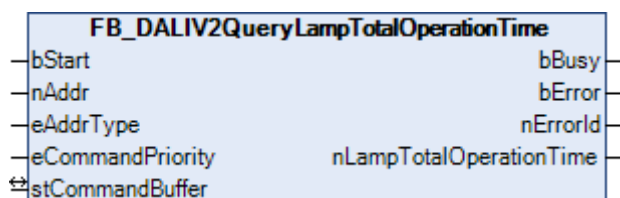
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nLampEmergencyTime : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nLampEmergencyTime	BYTE	Emergency operation time of the lamp from the control gear

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.13 FB_DALIV2QueryLampTotalOperationTime



The variable LAMP TOTAL OPERATION TIME [► 250] is read from the control gear. The unit is 4 hours per step. 255 means a maximum value of 1016 hours or more. The variable is always incremented at the start of the 4-hour interval. Once the maximum value of 255 is reached, it is not increased further. The variable is reset via the command FB_DALIV2ResetLampTime [► 277].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

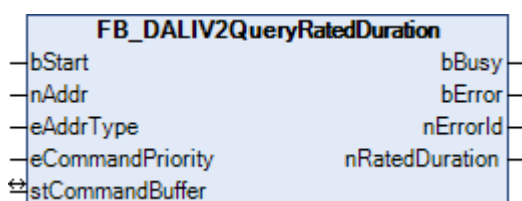
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nLampTotalOperationTime : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nLampTotalOperationTime	BYTE	Total operation time of the lamp from the control gear

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.14 FB_DALIV2QueryRatedDuration



The variable RATED DURATION [► 250] is read from the control gear. The unit is 2 minutes per step.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

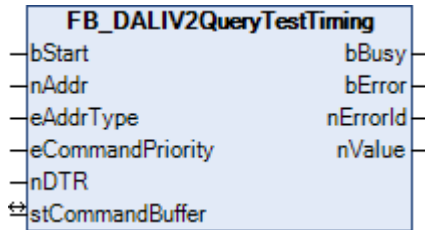
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRatedDuration : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRatedDuration	BYTE	Rated operation time from the control gear

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.15 FB_DALIV2QueryTestTiming



The function block FB_DALIV2QueryTestTiming reads the test times (intervals, duration until the next event, etc.) from the control gear. This takes place depending on the value applied at the *nDTR* input. The background to this is that the DALI basic command 242 “Query test timing” works together with the contents of the Data Transfer Register (DTR), which must be written to accordingly beforehand. The function block FB_DALIV2QueryTestTiming combines these two actions. The following data are read from the device, depending on the *nDTR* value:

nDTR	read value
0 (2#0000 0000)	If automatic test is activated: time until next function test (high-byte) in quarter hours If automatic test is not activated: MASK (255)
1 (2#0000 0001)	If automatic test is activated: time until next function test (low-byte) in quarter hours If automatic test is not activated: MASK (255)
2 (2#0000 0010)	If automatic test is activated: time until next duration test (high-byte) in quarter hours If automatic test is not activated: MASK (255)
3 (2#0000 0011)	If automatic test is activated: time until next duration test (low-byte) in quarter hours If automatic test is not activated: MASK (255)
4 (2#0000 0100)	If automatic test is activated: test interval of the function test in days If automatic test is not activated: MASK (255)
5 (2#0000 0101)	If automatic test is activated: test interval of the duration test in weeks If automatic test is not activated: MASK (255)
6 (2#0000 0110)	Test execution timeout in days (maximum execution period for one test). Applies only to the automatic test!
7 (2#0000 0111)	Lamp-on extension time after exiting from emergency operating mode, measured in 0.5-min steps



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType;
    eCommandPriority : E_DALIV2CommandPriority;
    nDTR        : BYTE;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority_ [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR	BYTE	The corresponding values are read in accordance to this input, see above.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

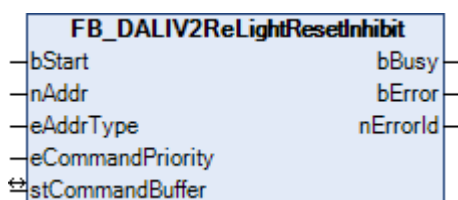
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nValue     : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nValue	BYTE	Result

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.16 FB_DALIV2ReLightResetInhibit



The control gear is switched back to emergency mode (in the absence of mains voltage). This deactivates the function of the function block [FB_DALIV2Inhibit \[► 255\]](#).



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

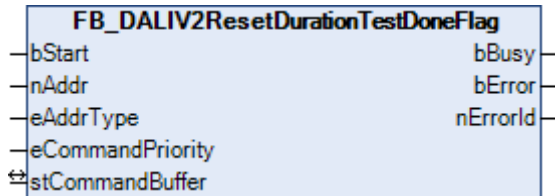
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.17 FB_DALIV2ResetDurationTestDoneFlag



The 'Duration test completed and result is valid' flag is reset. The flag is bit 2 of the variable EMERGENCY STATUS [► 250] and can be queried with the function block FB_DALIQueryEmergencyStatus [► 264].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

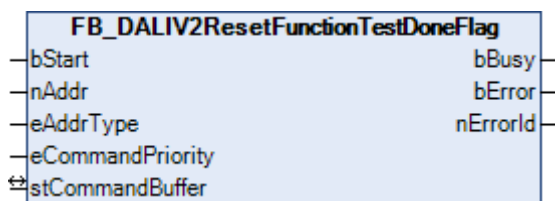
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.18 FB_DALIV2ResetFunctionTestDoneFlag



The 'Function test completed and result is valid' flag is reset. The flag is bit 1 of the variable [EMERGENCY STATUS](#) [► 250] and can be queried with the function block [FB_DALIQueryEmergencyStatus](#) [► 264].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

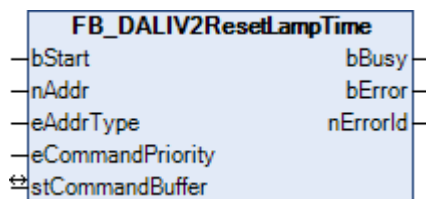
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.19 FB_DALIV2ResetLampTime



The function block FB_DALIV2ResetLampTime resets the variable [LAMP EMERGENCY TIME \[► 250\]](#) and [LAMP TOTAL OPERATION TIME \[► 250\]](#).



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.20 FB_DALIV2Rest



The function block FB_DALIV2Rest is used to switch off the lamp when emergency operation is active. Otherwise the system switches to normal operation if mains voltage is available again, or if the function block FB_DALIV2ReLightResetInhibit [► 273] was called.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

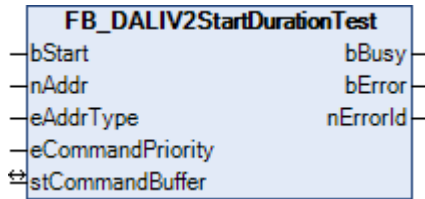
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.21 FB_DALIV2StartDurationTest



The function block FB_DALIV2StartDurationTest is used to start the duration test. If the duration test is started with a delay, this is indicated in bit 5 of the variable [EMERGENCY STATUS](#) [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

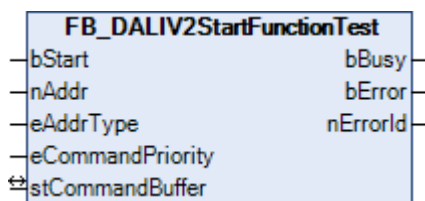
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.22 FB_DALIV2StartFunctionTest



The function block FB_DALIV2StartFunctionTest is used to start the function test. If the function test is started with a delay, this is indicated in bit 4 of the variable [EMERGENCY STATUS](#) [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.23 FB_DALIV2StopTest



The function block FB_DALIV2StopTest stops any type of function test or duration test.



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

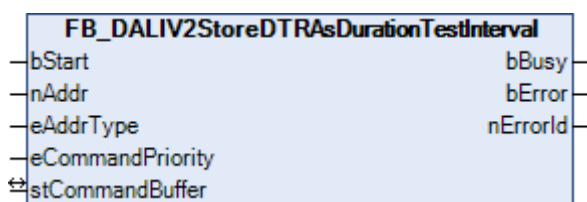
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.24 FB_DALIV2StoreDTRAsDurationTestInterval



The function block FB_DALIV2StoreDTRAsDurationTestInterval writes the value of the DTR (Data Transfer Register) to the variable DURATION TEST INTERVAL [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

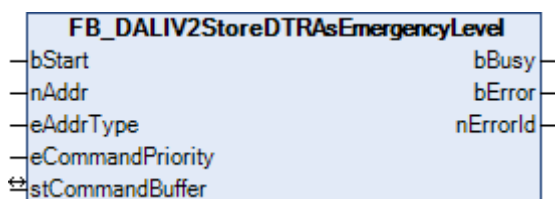
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.25 FB_DALIV2StoreDTRAsEmergencyLevel



The function block FB_DALIV2StoreDTRAsEmergencyLevel writes the value of the DTR (Data Transfer Register) to the variable [EMERGENCY_LEVEL \[► 250\]](#).



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

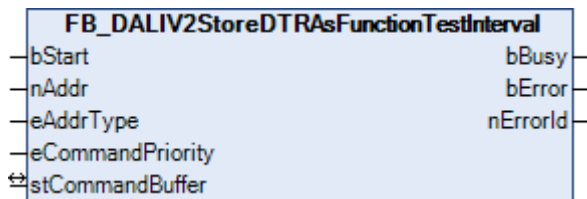
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.26 FB_DALIV2StoreDTRAsFunctionTestInterval



The function block FB_DALIV2StoreDTRAsFunctionTestInterval writes the value of the DTR (Data Transfer Register) to the variable `FUNCTION TEST INTERVAL` [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

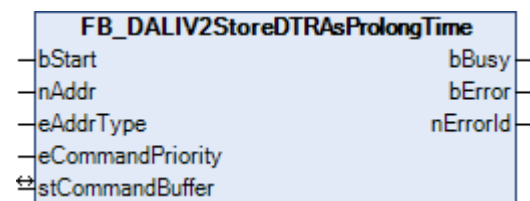
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.27 FB_DALIV2StoreDTRAsProlongTime



The function block FB_DALIV2StoreDTRAsProlongTime writes the value of the DTR (Data Transfer Register) to the variable [PROLONG TIME](#) [► 250].

i This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

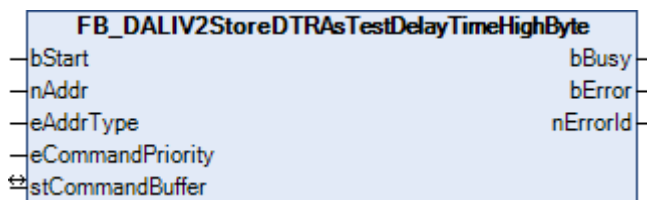
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.28 FB_DALIV2StoreDTRAsTestDelayTimeHighByte



The function block FB_DALIV2StoreDTRAsTestDelayTimeHighByte writes the value of the DTR (Data Transfer Register) to the high-order byte of the variable [TEST DELAY TIME](#) [► 250].



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

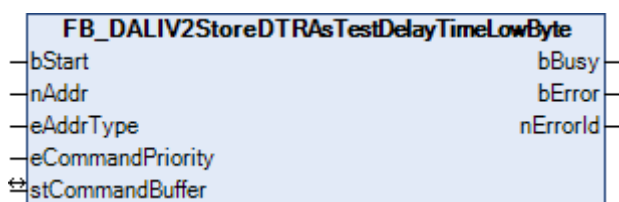
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.29 FB_DALIV2StoreDTRAsTestDelayTimeLowByte



The function block FB_DALIV2StoreDTRAsTestDelayTimeLowByte writes the value of the DTR (Data Transfer Register) to the low-order byte of the variable [TEST_DELAY_TIME \[► 250\]](#).



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

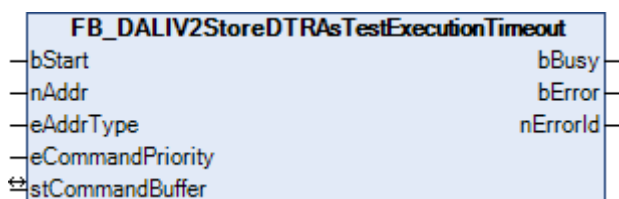
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.5.30 FB_DALIV2StoreDTRAsTestExecutionTimeout



The function block FB_DALIV2StoreDTRAsTestExecutionTimeout writes the value of the DTR (Data Transfer Register) to the variable [TEST EXECUTION TIMEOUT \[► 250\]](#) (maximum execution time for a test).



This command belongs to the application extended commands for DALI emergency lighting. These only work if they are preceded by the *Enable Device Type 1* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 1* command is internally placed automatically before all application extended commands for DALI emergency lighting.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6 Part 203 (discharge lamps)

The function blocks and variables for discharge lamps with DALI interface are described below. All function blocks described below call "application extended commands". According to the DALI standard (IEC 62386) these commands are within the range 224 to 255. Because of the existence of a variety of application extended commands, it is necessary to use the function block `FB_DALIV2EnableDeviceType` [► 92] to specify which type of control gears (emergency lighting, discharge lamps, ...) should respond to these commands. A precise description of the individual DALI commands and the variables for discharge lamps with DALI interface will be found in Part 203 of the IEC 62386 standard.



Function blocks

Name	Description
<code>FB_DALIV2QueryActualHIDFailure</code> [► 294]	The variable <code>ACTUAL HID FAILURE</code> [► 292] (current failure status) is read from the control gear.
<code>FB_DALIV2QueryHIDFeatures</code> [► 296]	The variable <code>HID FEATURES</code> [► 292] (performance characteristics) is read from the control gear.
<code>FB_DALIV2QueryHIDStatus</code> [► 297]	The variable <code>HID STATUS</code> [► 292] is read from the control gear.
<code>FB_DALIV2QueryStoredHIDFailure</code> [► 299]	The variable <code>STORED HID FAILURE</code> [► 292] (stored failure status) is read from the control gear.
<code>FB_DALIV2QueryThermalLoad</code> [► 300]	The variable <code>THERMAL LOAD</code> [► 292] is read.
<code>FB_DALIV2QueryThermalOverloadTime</code> [► 301]	The 16-bit variable <code>THERMAL OVERLOAD TIME</code> [► 292] is read.
<code>FB_DALIV2QueryThermalOverloadTimeHB</code> [► 303]	The high-order byte of the 16-bit variable <code>THERMAL OVERLOAD TIME</code> [► 292] is read.
<code>FB_DALIV2QueryThermalOverloadTimeLB</code> [► 304]	The low-order byte of the 16-bit variable <code>THERMAL OVERLOAD TIME</code> [► 292] is read.
<code>FB_DALIV2ResetStoredHIDFailure</code> [► 305]	The variable <code>STORED HID FAILURE</code> [► 292] (stored lamp faults) is reset.



These commands belong to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

4.1.2.6.1 Variables

Every DALI ballast for discharge lamps has a certain number of variables (parameters) from which it is possible to read a variety of information or to modify individual parameters.

Name	Default value	Reset value	Valid range	Size	Comment
<code>HID STATUS</code> [► 293]	0	0	0 ... 255	1 byte	
<code>ACTUAL HID FAILURE</code> [► 293]	???? ?????	No change	0 ... 255	1 byte	
<code>STORED HID FAILURE</code> [► 293]	???? ?????	No change	0 ... 255	1 byte	
<code>HID FEATURES</code> [► 294]	Manufacturer-dependent	No change	0 ... 255	1 byte	read only

Name	Default value	Reset value	Valid range	Size	Comment
THERMAL OVERLOAD TIME [► 294]	0	No change	00 00 ... FF FF	2 bytes	
THERMAL LOAD [► 294]	???? ????	No change	0 ... 255	1 byte	
EXTENDED VERSION NUMBER [► 294]	1	No change	0 ... 255	1 byte	read only

?: not specified

HID STATUS

The current status of the control gear is stored in HID STATUS. The value can be read with the function block `FB_DALIV2QueryHIDStatus` [► 297].

Bit	Description
0	Start-up time, ready for operation. 0: no.
1	The lamp power has reached its required setpoint. 0: no.
2	Control gear is waiting for the lamp to ignite. 0: no.
3	reserve
4	reserve
5	reserve
6	Identification active. 0: no.
7	reserve

ACTUAL HID FAILURE

This variable contains all the information about the failure status of the control gear. The variable is read with the function block `FB_DALIV2QueryActualHIDFailure` [► 294]. The respective bits are set as soon as an error occurs and automatically reset again as soon as the error has been reset.

As long as bit 4 or bit 7 are set, bit 1 in the variable `STATUS INFORMATION` [► 88] is also set. In this case, the function block `FB_DALIV2QueryLampFailure` [► 140] returns a TRUE at output `bLampFailure`.

Bit	Description
0	Supply voltage too low. 0: no.
1	Supply voltage too high. 0: no.
2	Converter too hot. 0: no.
3	reserve
4	Time for lamp ignition exceeded. 0: no.
5	reserve
6	The lamp voltage outside specification. 0: no.
7	Lamp cycle error. 0: no.

STORED HID FAILURE

This variable contains all the information about the failure status of the control gear. The variable is read with the function block `FB_DALIV2QueryStoredHIDFailure` [► 299]. The error messages are reset by switching off the control gear, or by the function block `FB_DALIV2ResetStoredHIDFailure` [► 305].

Bit	Description
0	Supply voltage too low. 0: no.
1	Supply voltage too high. 0: no.
2	Converter too hot. 0: no.

Bit	Description
3	reserve
4	Time for lamp ignition exceeded. 0: no.
5	reserve
6	The lamp voltage outside specification. 0: no.
7	Lamp cycle error. 0: no.

HID FEATURES

The performance characteristics supported by the control gear can be read from this variable via the function block [FB_DALIV2QueryHIDFeatures](#) [► 296]. The content of this variable is specified by the manufacturer of the control gear and cannot be modified.

Bit	Description
0	"Supply voltage too low" can be queried. 0: no.
1	"Supply voltage too high" can be queried. 0: no.
2	"Transformer too hot" can be queried. 0: no.
3	reserve
4	reserve
5	reserve
6	"Lamp voltage outside specification" can be queried. 0: no.
7	Physical selection is supported. 0: no.

THERMAL OVERLOAD TIME

As soon as thermal overload is detected, the variable THERMAL OVERLOAD TIME is incremented in steps of 15 minutes. This variable cannot be reset. Reaching 65535 (0xFFFF) here corresponds to a time of 16,383 hours and 45 minutes or more. The function blocks [FB_DALIV2QueryThermalOverloadTimeHB](#) [► 303] and [FB_DALIV2QueryThermalOverloadTimeLB](#) [► 304] can be used to read the variable THERMAL OVERLOAD TIME.

The threshold value for detecting the thermal overload is defined by the variable THERMAL LOAD (see below).

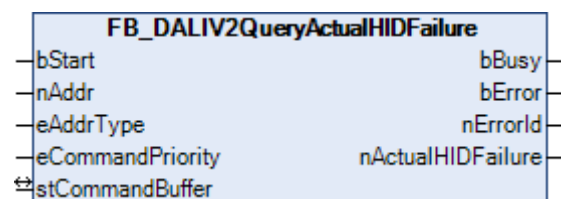
THERMAL LOAD

A percentage value in the range between 0 % and 127.5 % is specified in steps of 0.5 % in the variable THERMAL LOAD. 255 corresponds here to a value of 127.5 %. The variable can be read with the function block [FB_DALIV2QueryThermalLoad](#) [► 300].

EXTENDED VERSION NUMBER

The extended version number can be read with the function block [FB_QueryV2ExtendedVersionNumber](#). The version number can only be read, and is specified by the manufacturer of the control gears.

4.1.2.6.2 FB_DALIV2QueryActualHIDFailure



The variable [ACTUAL HID FAILURE](#) [► 292] (current failure status) is read from the control gear.

Bit	Description
0	Supply voltage too low. 0: no.

Bit	Description
1	Supply voltage too high. 0: no.
2	Converter too hot. 0: no.
3	Reserve
4	Time for lamp ignition exceeded. 0: no.
5	Reserve
6	The lamp voltage outside specification. 0: no.
7	Lamp cycle error. 0: no.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nActualHIDFailure : BYTE;
END_VAR
```

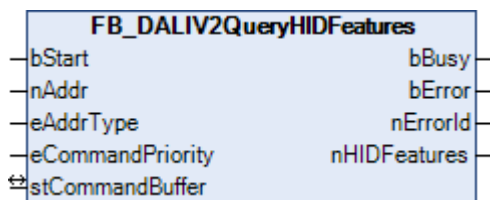
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nActualHIDFailure	BYTE	Content of the variables (see ACTUAL HID FAILURE [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.3 FB_DALIV2QueryHIDFeatures



The variable [HID FEATURES](#) [► 292] (performance characteristics) is read from the control gear.

Bit	Description
0	"Supply voltage too low" can be queried. 0: no.
1	"Supply voltage too high" can be queried. 0: no.
2	"Transformer too hot" can be queried. 0: no.
3	Reserve
4	Reserve
5	Reserve
6	"Lamp voltage outside specification" can be queried. 0: no.
7	Physical selection is supported. 0: no.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

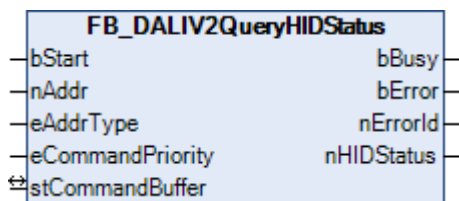
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nHIDFeatures : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nHIDFeatures	BYTE	Content of the variable (see HID FEATURES [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.4 FB_DALIV2QueryHIDStatus



The variable [HID STATUS \[► 292\]](#) is read from the control gear.

Bit	Description
0	Start-up time, ready for operation. 0: no.
1	The lamp power has reached its required setpoint. 0: no.
2	Control gear is waiting for the lamp to ignite. 0: no.
3	Reserve
4	Reserve
5	Reserve
6	Identification active. 0: no.
7	Reserve



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

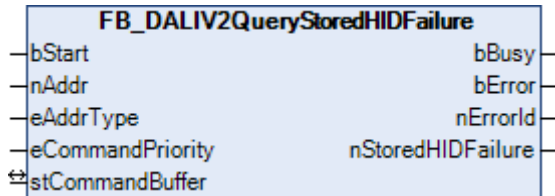
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nHIDStatus : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nHIDStatus	BYTE	Content of the variable (see HID FEATURES [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.5 FB_DALIV2QueryStoredHIDFailure



The variable STORED HID FAILURE [► 292] (stored failure status) is read from the control gear.

Bit	Description
0	Supply voltage too low. 0: no.
1	Supply voltage too high. 0: no.
2	Converter too hot. 0: no.
3	Reserve
4	Time for lamp ignition exceeded. 0: no.
5	Reserve
6	The lamp voltage outside specification. 0: no.
7	Lamp cycle error. 0: no.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

🔌 Outputs

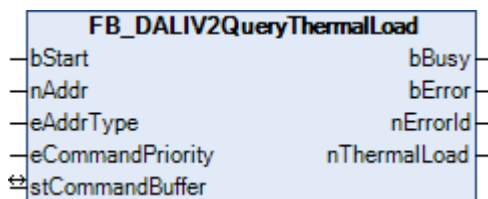
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nStoredHIDFailure : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nStoredHIDFailure	BYTE	Content of the variable (see STORED HID FAILURE [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.6 FB_DALIV2QueryThermalLoad



The variable [THERMAL LOAD](#) [► 292] is read. This contains a percentage figure in the range from 0 % to 127.5 % in steps of 0.5 %.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [▸ 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [▸ 77] (KL6811) or FB_KL6821Communication [▸ 82] (KL6821).

Outputs

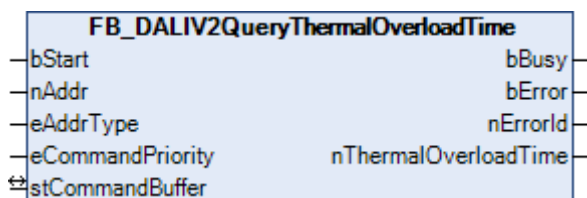
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nThermalLoad : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [▸ 438]).
nThermalLoad	BYTE	Content of the variable (see THERMAL LOAD [▸ 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.7 FB_DALIV2QueryThermalOverloadTime



The 16-bit variable [THERMAL OVERLOAD TIME](#) [[▸ 292](#)] is read.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [[▸ 92](#)]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

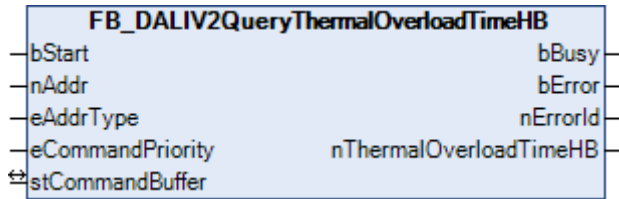
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nThermalOverloadTime : WORD;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nThermalOverloadTime	WORD	The value of the 16-bit variable (see THERMAL OVERLOAD TIME [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.8 FB_DALIV2QueryThermalOverloadTimeHB



The high-order byte of the 16-bit variable THERMAL OVERLOAD TIME [► 292] is read.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6811Communication</u> [► 77] (KL6811) or <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nThermalOverloadTimeHB : BYTE;
END_VAR

```

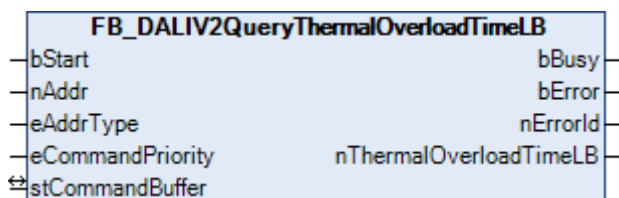
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nThermalOverloadTimeHB	BYTE	The high-order byte of the variable (see THERMAL OVERLOAD TIME [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.9 FB_DALIV2QueryThermalOverloadTimeLB



The function block FB_DALIV2QueryThermalOverloadTimeLB reads the low-order byte of the 16-bit variable [THERMAL OVERLOAD TIME](#) [► 292].



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```


Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nThermalOverloadTimeLB : BYTE;
END_VAR

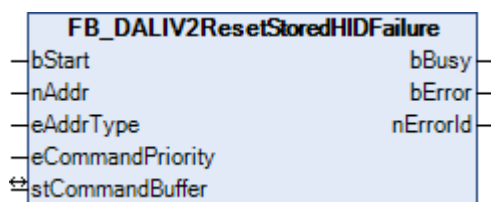
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nThermalOverloadTimeLB	BYTE	The low-order byte of the variable (see THERMAL OVERLOAD TIME [► 292])

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.6.10 FB_DALIV2ResetStoredHIDFailure



The variable [STORED HID FAILURE \[► 292\]](#) (stored lamp faults) is reset.



This command belongs to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The *Enable Device Type 2* command is internally placed automatically before all application extended commands for DALI discharge lamps.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.7 Part 207 (LED modules)

Function blocks

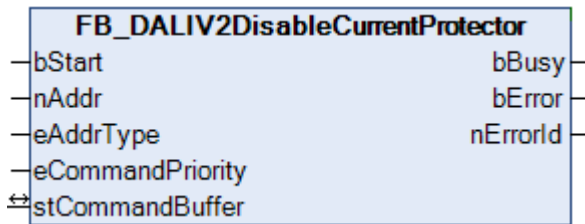
The function blocks and variables for LED modules with DALI interface are described below. All function blocks described below call "application extended commands". According to the DALI standard (IEC 62386) these commands are within the range 224 to 255. Because of the existence of a variety of application extended commands, it is necessary to use the function block [FB_DALIV2EnableDeviceType \[► 92\]](#) to specify which type of control gears (emergency lighting, discharge lamps, ...) should respond to these commands. A detailed description of the individual DALI commands and the variables for LED modules with DALI interface can be found in standard IEC 62386 Part 207.

Name	Description
FB_DALIV2DisableCurrentProtector [► 308]	The command disables the current protection device of the control gear.
FB_DALIV2EnableCurrentProtector [► 309]	The command enables the current protection device of the control gear.
FB_DALIV2QueryCurrentProtectorActive [► 310]	The system queries whether the current protection device is active.
FB_DALIV2QueryCurrentProtectorEnabled [► 311]	The system queries whether the current protection device is enabled.
FB_DALIV2QueryDimmingCurve [► 313]	The dimming curve of the control gear is read.
FB_DALIV2QueryFastFadeTime [► 314]	Queries the value of FAST FADE TIME.
FB_DALIV2QueryGearType [► 315]	Queries the value of GEAR TYPE.
FB_DALIV2QueryLedFailureStatus [► 316]	Queries the value of FAILURE STATUS.
FB_DALIV2QueryLedFeatures [► 317]	Queries the value of FEATURES.
FB_DALIV2QueryLoadDecrease [► 319]	The system queries whether a significant decrease in load (compared to the reference power of the system) has been detected.
FB_DALIV2QueryLoadIncrease [► 320]	The system queries whether a significant increase in load (compared to the reference power of the system) has been detected.
FB_DALIV2QueryMinFastFadeTime [► 321]	Queries the value of MIN FAST FADE TIME.
FB_DALIV2QueryOpenCircuit [► 322]	The system queries whether an idle mode has been detected.
FB_DALIV2QueryOperatingMode [► 324]	Queries the value of OPERATING MODE.
FB_DALIV2QueryPossibleOperatingModes [► 325]	Queries the value of POSSIBLE OPERATING MODE.
FB_DALIV2QueryReferenceMeasurementFailed [► 326]	The system queries whether a started reference measurement has failed.
FB_DALIV2QueryReferenceRunning [► 327]	The system queries whether a reference measurement of the system performance is active.
FB_DALIV2QueryShortCircuit [► 329]	The system queries whether a short circuit has been detected.
FB_DALIV2QueryThermalOverload [► 330]	The system queries whether there is a thermal overload with reduction of the luminous flux.
FB_DALIV2QueryThermalShutDown [► 331]	The system queries whether a thermal shutdown occurred.
FB_DALIV2ReferenceSystemPower [► 332]	The control gear measures and stores the performance level of the system, in order to detect load increase and decrease.
FB_DALIV2SelectDimmingCurve [► 334]	The dimming curve of the control gear is selected.
FB_DALIV2SetFastFadeTime [► 335]	Sets the FAST FADE TIME in the control gear.



These commands belong to the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 6* is already automatically internally prefixed to all application extended commands for LED modules with DALI interface.

4.1.2.7.1 FB_DALIV2DisableCurrentProtector



The function block FB_DALIV2DisableCurrentProtector disables the current protection device of the control gear.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

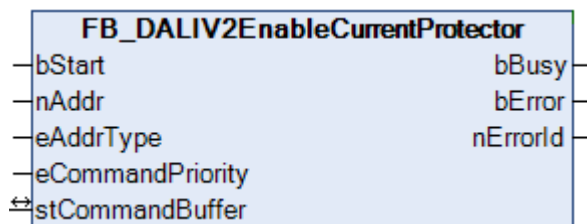
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.2 FB_DALIV2EnableCurrentProtector



The function block FB_DALIV2EnableCurrentProtector enables the current protection device of the control gear.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

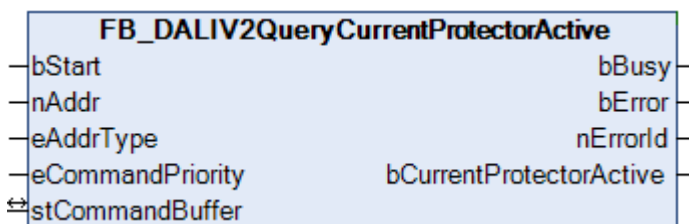
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.3 FB_DALIV2QueryCurrentProtectorActive



The function block FB_DALIV2QueryCurrentProtectorActive queries whether the current protection device is active.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

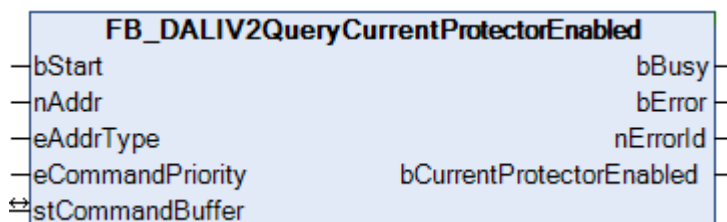
```
VAR_OUTPUT
    bBusy           : BOOL;
    bError          : BOOL;
    nErrorId        : UDINT;
    bCurrentProtectorActive : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bCurrentProtectorActive	BOOL	Current protection device active

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.4 FB_DALIV2QueryCurrentProtectorEnabled



The function block FB_DALIV2QueryCurrentProtectorEnabled queries whether the current protection device is enabled.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy           : BOOL;
  bError          : BOOL;
  nErrorId        : UDINT;
  bCurrentProtectorEnabled : BOOL;
END_VAR

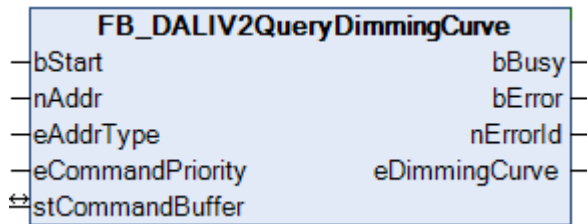
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bCurrentProtectorEnabled	BOOL	Current protection device enabled

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.5 FB_DALIV2QueryDimmingCurve



The function block FB_DALIV2QueryDimmingCurve reads the dimming curve of the control gear.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    eDimmingCurve : E_DALIV2DimmingCurve;
END_VAR
```

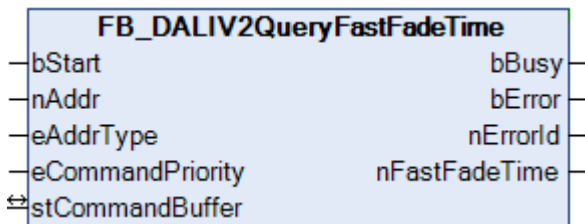
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
eDimmingCurve	E_DALIV2DimmingCurve [► 463]	Dimming curve (linear or logarithmic)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.6 FB_DALIV2QueryFastFadeTime



The function block FB_DALIV2QueryFastFadeTime queries the value of FAST FADE TIME.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

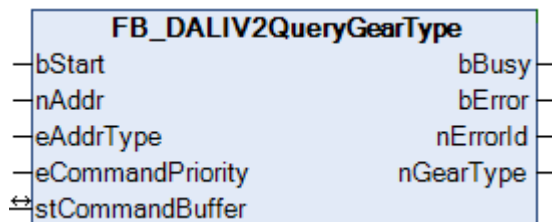
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nFastFadeTime  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFastFadeTime	BYTE	Value of FAST FADE TIME

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.7 FB_DALIV2QueryGearType



The function block FB_DALIV2QueryGearType queries the value of GEAR TYPE.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

🔌 Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

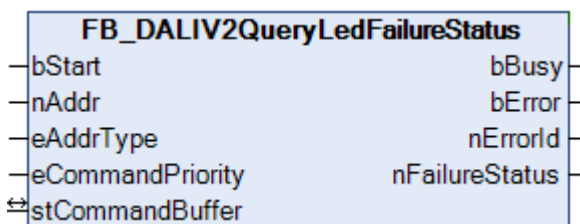
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nGearType  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nGearType	BYTE	Value of GEAR TYPE

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.8 FB_DALIV2QueryLedFailureStatus



The function block FB_DALIV2QueryLedFailureStatus queries the value of FAILURE STATUS.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

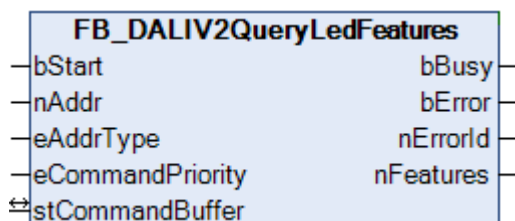
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError          : BOOL;
    nErrorId        : UDINT;
    nFailureStatus  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFailureStatus	BYTE	Value of FAILURE STATUS

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.9 FB_DALIV2QueryLedFeatures



The function block FB_DALIV2QueryLedFeatures queries the value of FEATURES.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

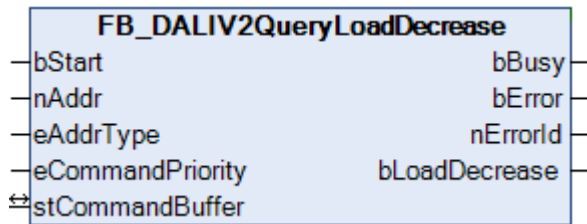
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nFeatures  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nFeatures	BYTE	Value of FEATURES

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.10 FB_DALIV2QueryLoadDecrease



The function block FB_DALIV2QueryLoadDecrease queries whether a significant load decrease (in comparison with the reference power of the system) has been detected.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bLoadDecrease : BOOL;
END_VAR

```

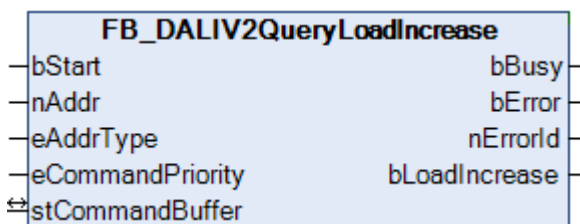
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bLoadDecrease	BOOL	Load decrease

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.11 FB_DALIV2QueryLoadIncrease



The function block FB_DALIV2QueryLoadIncrease queries whether a significant load increase (in comparison with the reference power of the system) has been detected.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```


Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

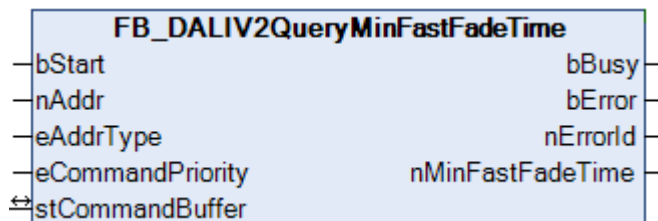
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bLoadIncrease  : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bLoadIncrease	BOOL	Load increase

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.12 FB_DALIV2QueryMinFastFadeTime



The function block FB_DALIV2QueryMinFastFadeTime queries the value of MIN FAST FADE TIME.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.

Name	Type	Description
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

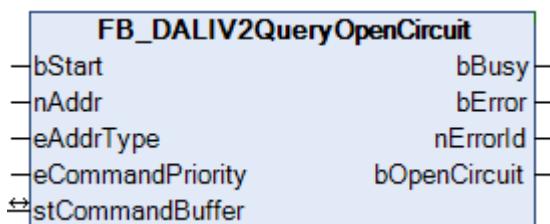
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nMinFastFadeTime : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nMinFastFadeTime	BYTE	Value of MIN FAST FADE TIME

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.13 FB_DALIV2QueryOpenCircuit



The function block FB_DALIV2QueryOpenCircuit queries whether an open circuit has been detected.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

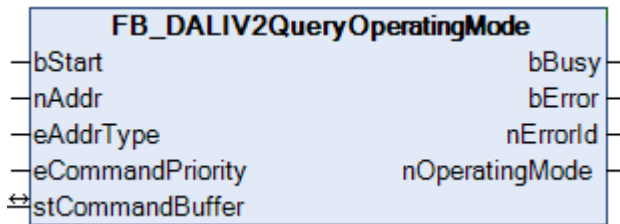
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bOpenCircuit   : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bOpenCircuit	BOOL	Open circuit

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.14 FB_DALIV2QueryOperatingMode



The function block FB_DALIV2QueryOperatingMode queries the value of OPERATING MODE.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nOperatingMode : BYTE;
END_VAR
```

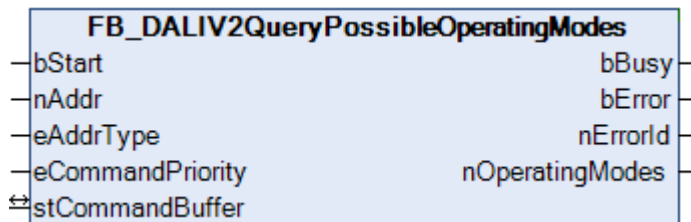
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nOperatingMode	BYTE	Value of OPERATING MODE

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.15 FB_DALIV2QueryPossibleOperatingModes



The function block FB_DALIV2QueryPossibleOperatingModes queries the value of OPERATING MODE.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔧 Outputs

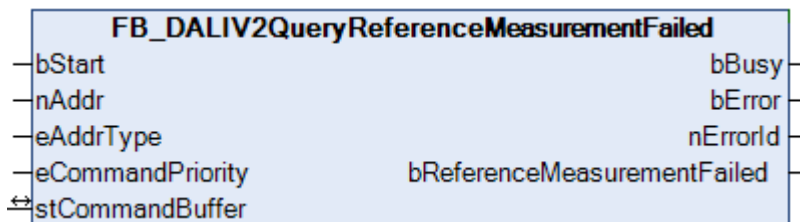
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  nOperatingModes : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nOperatingModes	BYTE	Value of OPERATING MODE

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.16 FB_DALIV2QueryReferenceMeasurementFailed



The function block FB_DALIV2QueryReferenceMeasurementFailed queries whether a started reference measurement has failed.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

🔧 Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

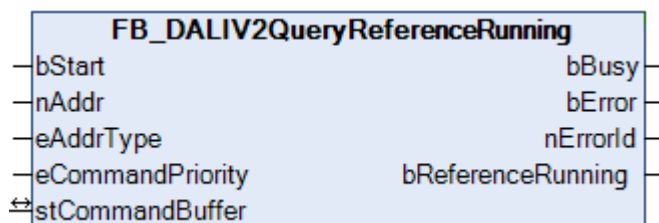
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bReferenceMeasurementFailed : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bReferenceMeasurementFailed	BOOL	Reference measurement failed

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.17 FB_DALIV2QueryReferenceRunning



The function block FB_DALIV2QueryReferenceRunning queries whether a reference measurement of the system power is active.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [[► 92](#)]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

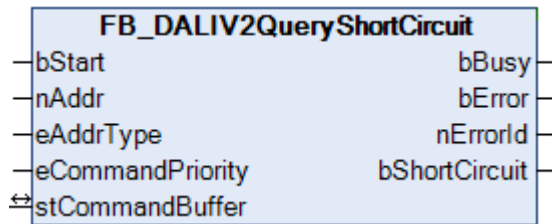
```
VAR_OUTPUT
  bBusy          : BOOL;
  bError         : BOOL;
  nErrorId       : UDINT;
  bReferenceRunning : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bReferenceRunning	BOOL	Reference measurement of system power is active

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.18 FB_DALIV2QueryShortCircuit



The function block FB_DALIV2QueryShortCircuit queries whether a short circuit has been detected.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bShortCircuit  : BOOL;
END_VAR

```

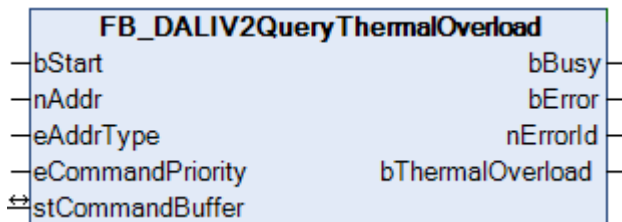
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bShortCircuit	BOOL	Short circuit

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.19 FB_DALIV2QueryThermalOverload



The function block FB_DALIV2QueryThermalOverload queries whether there is a thermal overload with a reduction in luminous flux.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

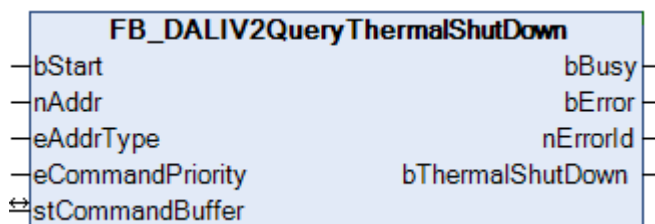
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    bThermalOverload : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bThermalOverload	BOOL	Thermal overload

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.20 FB_DALIV2QueryThermalShutDown



The function block FB_DALIV2QueryThermalShutDown queries whether a thermal shutdown has taken place.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

🔌 Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

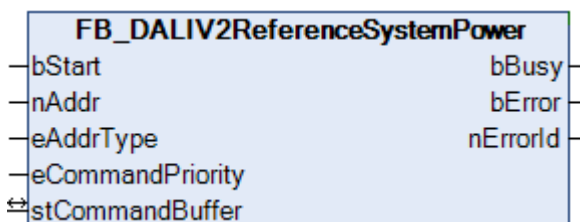
```
VAR_OUTPUT
    bBusy           : BOOL;
    bError          : BOOL;
    nErrorId        : UDINT;
    bThermalShutdown : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bThermalShutdown	BOOL	Thermal shutdown

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.21 FB_DALIV2ReferenceSystemPower



The control gear measures and stores the performance level of the system, in order to detect load increase and load decrease.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

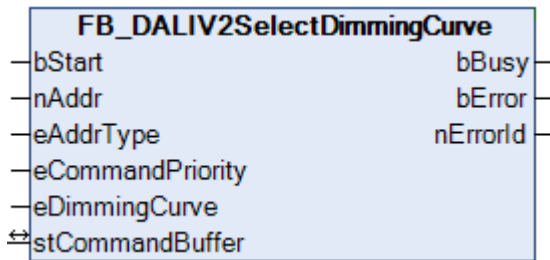
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.22 FB_DALIV2SelectDimmingCurve



The function block FB_DALIV2SelectDimmingCurve selects the dimming curve of the control gear.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  eDimmingCurve : E_DALIV2DimmingCurve := eDALIV2DimmingCurveLogarithmic;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
eDimmingCurve	<u>E_DALIV2DimmingCurve</u> [► 463]	Linear or logarithmic dimming curve

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

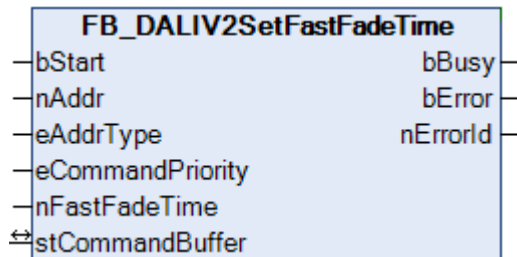
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.7.23 FB_DALIV2SetFastFadeTime



The function block FB_DALIV2SetFastFadeTime sets the FAST FADE TIME in the control gear.



This command is one of the application extended commands for LED modules with DALI interface. These only work if they are preceded by the *Enable Device Type 6* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 6* is automatically internally prefixed to all application extended commands for DALI LED modules.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nFastFadeTime : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nFastFadeTime	BYTE	The new value for the FAST FADE TIME (0 - 27)

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🚀 Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.8 Part 209 (color/color temperature control)

The function blocks and variables for lamps for color/color temperature control with DALI interface are described below. All function blocks described below call "application extended commands". According to the DALI standard (IEC 62386) these commands are within the range 224 to 255. Because of the existence of a variety of application extended commands, it is necessary to use the function block [FB_DALIV2EnableDeviceType \[► 92\]](#) to specify which type of control gears (emergency lighting, discharge lamps, ...) should respond to these commands. A precise description of the individual DALI commands and the variables for lamps for color/color temperature control with DALI interface can be found in IEC 62386 part 209.



Function blocks

Name	Description
FB_DALIV2Activate [► 342]	Starts a new cross-fade. A running cross-fade will be ended beforehand.
FB_DALIV2AssignColourToLinkedChannel [► 344]	Linked output channels are assigned to the defined color.
FB_DALIV2ColourTemperatureTcStepCooler [► 345]	The value COLOUR TEMPERATURE Tc [► 338] is decremented by 1 Mirek.
FB_DALIV2ColourTemperatureTcStepWarmer [► 347]	The value COLOUR TEMPERATURE Tc [► 338] is incremented by 1 Mirek.
FB_DALIV2CopyReportToTemporary [► 348]	The color settings report is copied to the temporary color settings.
FB_DALIV2QueryAssignedColour [► 349]	Reads the assigned color of the specified output channel.
FB_DALIV2QueryColourStatus [► 351]	The variable COLOUR STATUS [► 341] is read from the control gear.

Name	Description
FB_DALIV2QueryColourTypeFeatures [► 353]	The color representations supported by the control gear are read.
FB_DALIV2QueryColourValue [► 354]	The specified color value is read from the control gear.
FB_DALIV2QueryGearFeaturesStatus [► 357]	The variable <u>GEAR FEATURES/STATUS</u> [► 341] is read from the control gear.
FB_DALIV2QueryRGBWAFControl [► 359]	The variable <u>RGBWAF CONTROL</u> [► 342] is read from the control gear.
FB_DALIV2SetTemporaryColourTemperatureTc [► 360]	Saves the value in the variable <u>TEMPORARY COLOUR TEMPERATURE Tc</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryPrimaryNDimlevel [► 362]	Saves the value in the variable <u>TEMPORARY PRIMARY N DIMLEVEL</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryRGBDimlevel [► 363]	Saves the values in the variables <u>TEMPORARY RED DIMLEVEL</u> [► 338], <u>TEMPORARY GREEN DIMLEVEL</u> [► 338] and <u>TEMPORARY BLUE DIMLEVEL</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryRGBWAFControl [► 365]	Saves the value in the variable <u>TEMPORARY RGBWAF CONTROL</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryWAFDimlevel [► 367]	Saves the values in the variables <u>TEMPORARY WHITE DIMLEVEL</u> [► 338], <u>TEMPORARY AMBER DIMLEVEL</u> [► 338] and <u>TEMPORARY FREECOLOUR DIMLEVEL</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryXCoordinate [► 368]	Saves the value in the variable <u>TEMPORARY x-COORDINATE</u> [► 338] of the control gear.
FB_DALIV2SetTemporaryYCoordinate [► 370]	Saves the value in the variable <u>TEMPORARY y-COORDINATE</u> [► 338] of the control gear.
FB_DALIV2StartAutoCalibration [► 371]	The calibration procedure is started in order to measure the x-coordinate, the y-coordinate and the TY value of all supported primary colors.
FB_DALIV2StoreColourTemperatureTcLimit [► 373]	Saves the value in the variable <u>COLOUR TEMPERATURE Tc COOLEST</u> [► 338], <u>COLOUR TEMPERATURE Tc WARMEST</u> [► 338], <u>COLOUR TEMPERATURE Tc PHYSICAL COOLEST</u> [► 338] or <u>COLOUR TEMPERATURE Tc PHYSICAL WARMEST</u> [► 338] of the control gear.
FB_DALIV2StoreGearFeaturesStatus [► 374]	Saves the value in the variable <u>GEAR FEATURES/STATUS</u> [► 341] of the control gear.
FB_DALIV2StoreTYPrimaryN [► 376]	Saves the value in the variable <u>TY PRIMARY N</u> [► 338] of the control gear.
FB_DALIV2StoreXyCoordinatePrimaryN [► 377]	Copies the value from the variables <u>TEMPORARY x-COORDINATE</u> [► 338] and <u>TEMPORARY y-COORDINATE</u> [► 338] to the variables <u>x-COORDINATE PRIMARY N</u> [► 338] and <u>y-COORDINATE PRIMARY N</u> [► 338].
FB_DALIV2XCoordinateStepDown [► 379]	The variable x-COORDINATE is reduced by 256 steps (256 / 65536) without cross-fading.
FB_DALIV2XCoordinateStepUp [► 380]	The variable x-COORDINATE is increased by 256 steps (256 / 65536) without cross-fading.
FB_DALIV2YCoordinateStepDown [► 381]	The variable y-COORDINATE is reduced by 256 steps (256 / 65536) without cross-fading.
FB_DALIV2YCoordinateStepUp [► 383]	The variable y-COORDINATE is increased by 256 steps (256 / 65536) without cross-fading.



These commands belong to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

4.1.2.8.1 Variables

Every DALI control gear for color/color temperature control has a certain number of variables (parameters) from which it is possible to read a variety of information or to modify individual parameters.

Some variables can be read directly via DALI commands (e.g. [FB_DALIV2QueryColourStatus \[► 351\]](#) or [FB_DALIV2QueryRGBWAFControl \[► 359\]](#)). The function block [FB_DALIV2QueryColourValue \[► 354\]](#) can be used to read additional variables.

Name	Default value	Reset value	Scope	Size	necessary color representation (1) [► 340]	Comment
TEMPORARY x-COORDINATE	65535	65535	0 ...65535	2 bytes	0, 2	
REPORT x-COORDINATE	65535	65535	0 ...65535	2 bytes	0	
x-COORDINATE	?	No change	0 ...65535	2 bytes	0	
TEMPORARY y-COORDINATE	65535	65535	0 ...65535	2 bytes	0.2	
REPORT y-COORDINATE	65535	65535	0 ...65535	2 bytes	0	
y-COORDINATE	?	No change	0 ...65535	2 bytes	0	
TEMPORARY COLOUR TEMPERATURE T _c	65535	65535	1 ... 65535	2 bytes	1	
REPORT COLOUR TEMPERATURE T _c	65535	65535	1 ... 65535	2 bytes	1	
COLOUR TEMPERATURE T _c	?	No change	1 ... 65535	2 bytes	1	
COLOUR TEMPERATURE T _c COOLEST	?	COLOUR TEMPERATURE T _c PHYSICAL COOLEST	COLOUR TEMPERATURE T _c PHYSICAL COOLEST ... COLOUR TEMPERATURE T _c WARMEST, 65535	2 bytes	1	read only
COLOUR TEMPERATURE T _c WARMEST	?	COLOUR TEMPERATURE T _c PHYSICAL WARMEST	COLOUR TEMPERATURE T _c COOLEST ... COLOUR TEMPERATURE T _c PHYSICAL WARMEST, 65535	2 bytes	1	read only
COLOUR TEMPERATURE T _c PHYSICAL COOLEST	?	No change	1 - COLOUR TEMPERATURE T _c PHYSICAL WARMEST, 65535	2 bytes	1	read only

Name	Default value	Reset value	Scope	Size	necessary color representation (1) [► 340]	Comment
COLOUR TEMPERATURE Tc PHYSICAL WARMEST	?	No change	COLOUR TEMPERATURE Tc PHYSICAL COOLEST - 65534, 65535	2 bytes	1	read only
TEMPORARY PRIMARY N DIMLEVEL	65535	65535	0 ...65535	up to 12 bytes	2	
REPORT PRIMARY N DIMLEVEL	65535	65535	0 ...65535	up to 12 bytes	2	
PRIMARY N DIMLEVEL	?	No change	0 ...65535	up to 12 bytes	2	
x-COORDINATE PRIMARY N	?	No change	0 ...65535	up to 12 bytes	0.2	read only
y-COORDINATE PRIMARY N	?	No change	0 ...65535	up to 12 bytes	0.2	read only
TY PRIMARY N	?	No change	0 ...65535	up to 12 bytes	0.2	read only
TEMPORARY RED DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT RED DIMLEVEL	255	255	0 ... 255	1 byte	3	
RED DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY GREEN DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT GREEN DIMLEVEL	255	255	0 ... 255	1 byte	3	
GREEN DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY BLUE DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT BLUE DIMLEVEL	255	255	0 ... 255	1 byte	3	
BLUE DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY WHITE DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT WHITE DIMLEVEL	255	255	0 ... 255	1 byte	3	
WHITE DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY AMBER DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT AMBER DIMLEVEL	255	255	0 ... 255	1 byte	3	
AMBER DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY FREECOLOUR DIMLEVEL	255	255	0 ... 255	1 byte	3	
REPORT FREECOLOUR DIMLEVEL	255	255	0 ... 255	1 byte	3	
FREECOLOUR DIMLEVEL	?	No change	0 ... 255	1 byte	3	
TEMPORARY RGBWAF CONTROL	255	255	0 ... 255	1 byte	3	
REPORT RGBWAF CONTROL	255	255	0 ... 255	1 byte	3	

Name	Default value	Reset value	Scope	Size	necessary color representation (1) [► 340]	Comment
RGBWAF CONTROL [► 342]	63	No change	0 ... 255	1 byte	3	
ASSIGNED COLOUR [► 341]	0x0102 0304 0506	0x0102 0304 0506	0x0000 0000 0000 ... 0x0606 0606 0606	6 bytes	3	read only MSB: channel 0 LSB: channel 5
TEMPORARY COLOUR TYPE [► 341]	255	255	0x10, 0x20, 0x40, 0x80, 0xFF	1 byte	0, 1, 2, 3	
REPORT COLOUR TYPE [► 341]	255	255	0x10, 0x20, 0x40, 0x80, 0xFF	1 byte	0, 1, 2, 3	
SCENE 0–15 COLOUR TYPE [► 341]	65535	65535	0x10, 0x20, 0x40, 0x80, 0xFF	16 bytes	0, 1, 2, 3	read only
SCENE 0–15 COLOUR VALUE	65535	65535	0 ... 65535	32 bytes ... 192 bytes	0, 1, 2, 3	read only
POWER ON COLOUR TYPE [► 341]	Manufacturer dependent	Manufacturer dependent	0x10, 0x20, 0x40, 0x80, 0xFF	1 byte	0, 1, 2, 3	read only
POWER ON COLOUR VALUE	Manufacturer dependent	Manufacturer dependent	0 ...65535	2 bytes ... 12 bytes	0, 1, 2, 3	read only
SYSTEM FAILURE COLOUR TYPE [► 341]	Manufacturer dependent	Manufacturer dependent	0x10, 0x20, 0x40, 0x80, 0xFF	1 byte	0, 1, 2, 3	read only
SYSTEM FAILURE COLOUR VALUE	Manufacturer dependent	Manufacturer dependent	0 ...65535	2 bytes ... 12 bytes	0, 1, 2, 3	read only
GEAR FEATURES/STATUS [► 341]	??00 0001b	??00 0001b	??00 0000b, ??00 0001b	1 byte	0, 1, 2, 3	
COLOUR STATUS [► 341]	?	No change	0 ... 255	1 byte	0, 1, 2, 3	
COLOUR TYPE FEATURES [► 342]	?	No change	0 ... 255	1 byte	0, 1, 2, 3	read only

?: undetermined

In the case of 1-byte values the value 255 is also called MASK.

In the case of 2-byte values the value 65535 is also called MASK.

(1): Specifies the color representation that the DALI control gear must support so that it contains the appropriate variable:

Value	Description
0	xy coordinates
1	Color temperature Tc
2	Primary (color) N
3	RGBWAF

ASSIGNED COLOUR

The assignment between output channel and color is defined in ASSIGNED COLOR. Each byte contains the color of the corresponding channel.

The function block [FB_DALIV2QueryAssignedColour](#) [► 349] can be used to read the value.

Value	Description
0	No color assigned
1	Red
2	Green
3	Blue
4	White
5	Amber
6	Freely selectable color

COLOUR TYPE

COLOR TYPE defines the color representations supported by the DALI control gear.

The values can be read using the function block [FB_DALIV2QueryColorValue](#) [► 354].

Values	Description
0x10	xy coordinates
0x20	Color temperature Tc
0x40	Primary (color) N
0x80	RGBWAF
0xFF	no color change

COLOUR STATUS

COLOUR STATUS contains information about the current status of the DALI control gear.

The values can be read using the function block [FB_DALIV2QueryColorStatus](#) [► 351].

Bit	Description
0	xy-coordinate color point lies outside of the valid range.
1	Color temperature Tc lies outside of the valid range.
2	Automatic calibration is active.
3	Automatic calibration was successful.
4	Color representation xy-coordinate active.
5	Color representation colour temperature Tc active.
6	Color representation primary N active.
7	Color representation RGBWAF active.

GEAR FEATURES/STATUS

GEAR FEATURES/STATUS contains information about the current status of the DALI control gear.

The values can be read using the function block [FB_DALIV2QueryGearFeaturesStatus](#) [► 357] and written using the function block [FB_DALIV2StoreGearFeaturesStatus](#) [► 374].

Bit	Description
0	Automatic activation.
1 - 5	Reserved.
6	Automatic calibration is supported.
7	Restoration of the automatic calibration is supported.

RGBWAF CONTROL

RGBWAF CONTROL contains further information about the assignment between output channel and color.

The values can be read using the function block `FB_DALIV2QueryColorValue` [► 354].

Bit	Description
0	Output channel 0 / red
1	Output channel 1 / green
2	Output channel 2 / blue
3	Output channel 3 / white
4	Output channel 4 / amber
5	Output channel 5 / free selectable color
6 - 7	00 = channel control 01 = color control 10 = standardized color control 11 = reserved

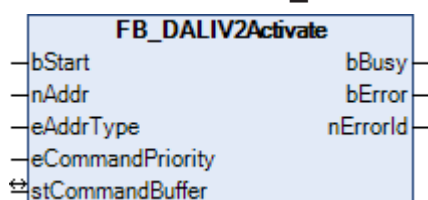
COLOUR TYPE FEATURES

COLOUR TYPE FEATURES contains the color representations supported by the DALI control gear.

The values can be read using the function block `FB_DALIV2QueryColourTypeFeatures` [► 353].

Bit	Description
0	The control gear supports the color representation by xy coordinates.
1	The control gear supports the color representation by color temperature Tc.
2 - 4	The number of primary colors supported by the control gear. A value of 0 means that this color representation by primary colors is not supported.
5 - 7	The number of RGBWAF channels supported by the control gear. A value of 0 means that this color representation by RGBWAF is not supported.

4.1.2.8.2 FB_DALIV2Activate



A current cross-fade is ended and a new cross-fade is started. Only the color is changed here.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

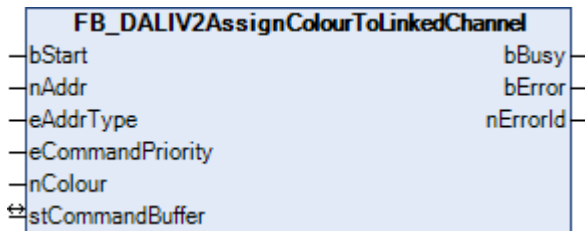
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.3 FB_DALIV2AssignColourToLinkedChannel



Linked output channels are assigned to the defined color (see table). The linked channels are specified by bit 0 to bit 5 of the **TEMPORARY RGBWAF CONTROL** [► 338] variable. The channel assignment is not changed if **TEMPORARY RGBWAF CONTROL** contains the value 255 (MASK). All **TEMPORARY COLOUR SETTINGS** are set to MASK after the use of this command.

Value	Description
0	No color assigned
1	Red
2	Green
3	Blue
4	White
5	Amber
6	Freely selectable color

The function block changes the DTR (Data Transfer Register) for all DALI control gears of the DALI line.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block **FB_DALIV2EnableDeviceType** [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nColour     : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nColour	BYTE	Color that is assigned to the output channels (see table).

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```


Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

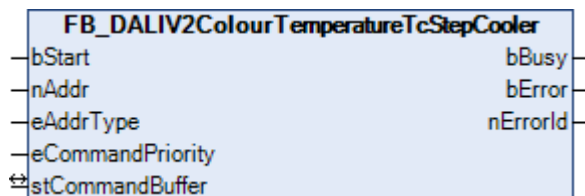
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.4 FB_DALIV2ColourTemperatureTcStepCooler



The COLOUR TEMPERATURE Tc [► 338] value is decremented by 1 Mirek without cross-fading. If the value COLOUR TEMPERATURE Tc [► 338] already has the value COLOUR TEMPERATURE Tc COOLEST [► 338], no change is made.

Bit 1 (Color temperature Tc out of range) is set in COLOR STATUS [► 338] if the color temperature cannot be reached by the DALI control gear. This command is executed by the DALI control gear only if bit 5 (Color type color temperature Tc active) is set in the variable COLOR STATUS [► 338].

The functions KELVIN TO MIREK [► 384] and MIREK TO KELVIN [► 385] are available for converting from or to Kelvin.

The function block supports the color representations:

- Color temperature Tc



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError      : BOOL;
  nErrorId    : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.5 FB_DALIV2ColourTemperatureTcStepWarmer



The COLOUR TEMPERATURE Tc [► 338] value is incremented by 1 Mirek without cross-fading. If the value COLOUR TEMPERATURE Tc [► 338] already has the value COLOUR TEMPERATURE Tc WARMEST [► 338], no change is made.

Bit 1 (Color temperature Tc out of range) is set in COLOR STATUS [► 338] if the color temperature cannot be reached by the DALI control gear. This command is executed by the DALI control gear only if bit 5 (Color type color temperature Tc active) is set in the variable COLOR STATUS [► 338].

The functions KELVIN TO MIREK [► 384] and MIREK TO KELVIN [► 385] are available for converting from or to Kelvin.

The function block supports the color representations:

- Color temperature Tc



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

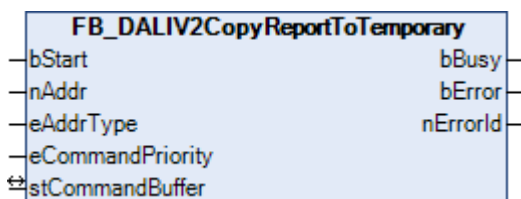
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.6 FB_DALIV2CopyReportToTemporary



The color settings report is copied to the temporary color settings.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

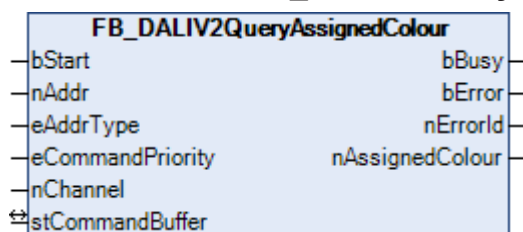
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.7 FB_DALIV2QueryAssignedColour



The variable ASSIGNED COLOUR [► 338] is read from the DALI control gear. This contains the color (see table) assigned to the specified output channel (0 - 5). 255 (MASK) is returned if a non-existent channel number is specified.

Value	Description
0	No color assigned
1	Red

Value	Description
2	Green
3	Blue
4	White
5	Amber
6	Freely selectable color

The function block changes the DTR (Data Transfer Register) for all DALI control gears of the DALI line.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nChannel        : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nChannel	BYTE	Channel number (0 - 5)

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

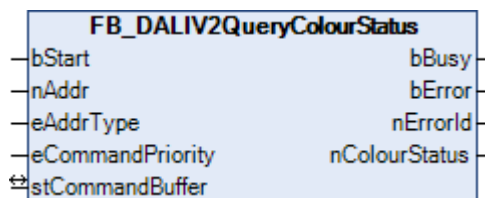
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nAssignedColour : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nAssignedColour	BYTE	Assigned color of the channel (see table)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.8 FB_DALIV2QueryColourStatus



The variable [COLOUR STATUS](#) [► 338] is read from the DALI control gear.

Bit	Description
0	xy-coordinate color point lies outside of the valid range.
1	Color temperature Tc lies outside of the valid range.
2	Automatic calibration is active.
3	Automatic calibration was successful.
4	Color representation xy-coordinate active.
5	Color representation colour temperature Tc active.
6	Color representation primary N active.
7	Color representation RGBWAF active.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nColourStatus : BYTE;
END_VAR

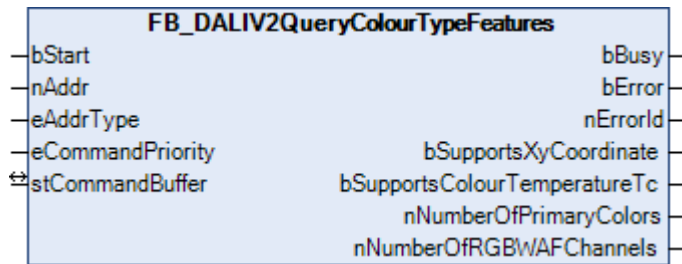
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nColourStatus	BYTE	Color status (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.9 FB_DALIV2QueryColourTypeFeatures



The variable `COLOUR TYPE FEATURES` [► 338] is read from the DALI control gear. This contains the color representations supported by the DALI control gear.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;

```

```

bSupportsXyCoordinate      : BOOL;
bSupportsColourTemperatureTc : BOOL;
nNumberOfPrimaryColors     : BYTE;
nNumberOfRGBWAFChannels    : BYTE;
END_VAR

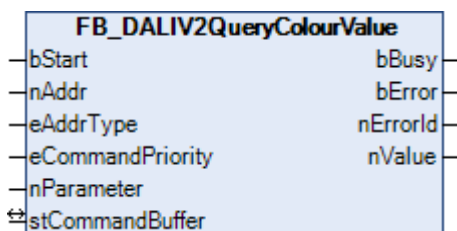
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bSupportsXyCoordinate	BOOL	The control gear supports xy-coordinate.
bSupportsColourTemperatureTc	BOOL	The control gear supports Color temperature Tc.
nNumberOfPrimaryColors	BYTE	The number of primary colors supported by the control gear. A value of 0 means that this color representation is not supported.
nNumberOfRGBWAFChannels	BYTE	The number of RGBWAF channels supported by the control gear. A value of 0 means that this color representation is not supported.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.10 FB_DALIV2QueryColourValue



The specified variable (color value) is read from the DALI control gear. The value to be read is defined by *nParameter* (see table below).

Certain variables can be read directly via DALI commands (e.g. [FB_QueryColourStatus](#) [► 351] or [FB_QueryRGBWAFControl](#) [► 359]). Further details on the variables can be found in section [Variables](#) [► 338].

Value	Description
0	x-COORDINATE
1	y-COORDINATE
2	COLOUR TEMPERATURE Tc
3	PRIMARY N DIMLEVEL 0
4	PRIMARY N DIMLEVEL 1
5	PRIMARY N DIMLEVEL 2
6	PRIMARY N DIMLEVEL 3
7	PRIMARY N DIMLEVEL 4
8	PRIMARY N DIMLEVEL 5

Value	Description
9	RED DIMLEVEL
10	GREEN DIMLEVEL
11	BLUE DIMLEVEL
12	WHITE DIMLEVEL
13	AMBER DIMLEVEL
14	FREECOLOUR DIMLEVEL
15	RGBWAF CONTROL
64	x-COORDINATE PRIMARY N 0
65	y-COORDINATE PRIMARY N 0
66	TY PRIMARY N 0
67	x-COORDINATE PRIMARY N 1
68	y-COORDINATE PRIMARY N 1
69	TY PRIMARY N 1
70	x-COORDINATE PRIMARY N 2
71	y-COORDINATE PRIMARY N 2
72	TY PRIMARY N 2
73	x-COORDINATE PRIMARY N 3
74	y-COORDINATE PRIMARY N 3
75	TY PRIMARY N 3
76	x-COORDINATE PRIMARY N 4
77	y-COORDINATE PRIMARY N 4
78	TY PRIMARY N 4
79	x-COORDINATE PRIMARY N 5
80	y-COORDINATE PRIMARY N 5
81	TY PRIMARY N 5
82	NUMBER OF PRIMARIES
128	COLOUR TEMPERATURE T _c COOLEST
129	COLOUR TEMPERATURE T _c PHYSICAL COOLEST
130	COLOUR TEMPERATURE T _c WARMEST
131	COLOUR TEMPERATURE T _c PHYSICAL WARMEST
192	TEMPORARY x-COORDINATE
193	TEMPORARY y-COORDINATE
194	TEMPORARY COLOUR TEMPERATURE T _c
195	TEMPORARY PRIMARY N DIMLEVEL 0
196	TEMPORARY PRIMARY N DIMLEVEL 1
197	TEMPORARY PRIMARY N DIMLEVEL 2
198	TEMPORARY PRIMARY N DIMLEVEL 3
199	TEMPORARY PRIMARY N DIMLEVEL 4
200	TEMPORARY PRIMARY N DIMLEVEL 5
201	TEMPORARY RED DIMLEVEL
202	TEMPORARY GREEN DIMLEVEL
203	TEMPORARY BLUE DIMLEVEL
204	TEMPORARY WHITE DIMLEVEL
205	TEMPORARY AMBER DIMLEVEL
206	TEMPORARY FREECOLOUR DIMLEVEL
207	TEMPORARY RGBWAF CONTROL
208	TEMPORARY COLOUR TYPE
224	REPORT x-COORDINATE

Value	Description
225	REPORT y-COORDINATE
226	REPORT COLOUR TEMPERATURE T _c
227	REPORT PRIMARY N DIMLEVEL 0
228	REPORT PRIMARY N DIMLEVEL 1
229	REPORT PRIMARY N DIMLEVEL 2
230	REPORT PRIMARY N DIMLEVEL 3
231	REPORT PRIMARY N DIMLEVEL 4
232	REPORT PRIMARY N DIMLEVEL 5
233	REPORT RED DIMLEVEL
234	REPORT GREEN DIMLEVEL
235	REPORT BLUE DIMLEVEL
236	REPORT WHITE DIMLEVEL
237	REPORT AMBER DIMLEVEL
238	REPORT FREECOLOUR DIMLEVEL
239	REPORT RGBWAF CONTROL
240	REPORT COLOUR TYPE

Responses that concern an active color representation are valid only if the color representation of the requested color value is active (see [FB_DALIV2QueryColourStatus](#) [► 351]) or if the control gear is able to perform a recalculation of the demanded color value from the active color representation to a color value of another color representation.

The response must be 255 (MASK) if the control gear does not know the coordinates or if the primary color is not present.

The function block changes the DTR (Data Transfer Register) and DTR1 for all DALI control gears of the DALI line.

The function block supports the color representations:

- xy coordinates
- Color temperature T_c
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nParameter  : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [462]	Priority (high, medium or low) with which the command is processed by the library.
nParameter	BYTE	Color value to be read (see table above).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [77] (KL6811) or FB_KL6821Communication [82] (KL6821).

Outputs

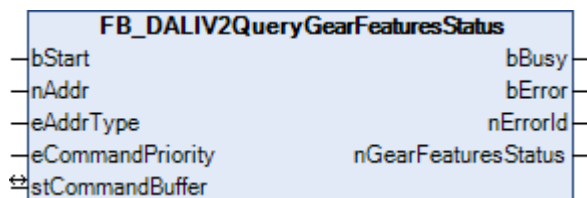
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nValue     : UINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [438]).
nValue	UINT	Contains the read value.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.11 FB_DALIV2QueryGearFeaturesStatus



The variable [GEAR FEATURES/STATUS](#) [[357](#)] is read from the DALI control gear.

Bit	Description
0	Automatic activation.
1 - 5	reserved.
6	Automatic calibration is supported.
7	Restoration of the automatic calibration is supported.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nGearFeaturesStatus : BYTE;
END_VAR
```

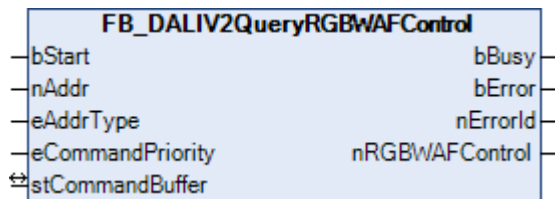
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nGearFeaturesStatus	BYTE	Status information (see table above).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.12 FB_DALIV2QueryRGBWAFControl



The variable [RGBWAF CONTROL](#) [► 338] is read from the DALI control gear.

Bit	Description
0	Output channel 0 / red
1	Output channel 1 / green
2	Output channel 2 / blue
3	Output channel 3 / white
4	Output channel 4 / amber
5	Output channel 5 / free selectable color
6 - 7	00 = channel control 01 = color control 10 = standardized color control 11 = reserved

If an output channel or a color is not supported, then the corresponding bit is FALSE.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

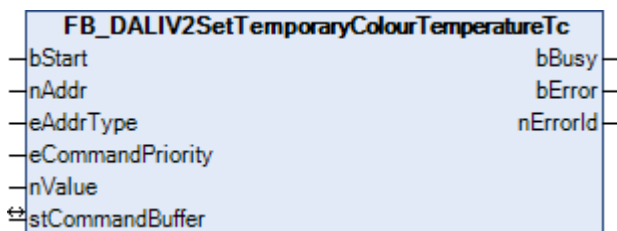
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nRGBWAFControl : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRGBWAFControl	BYTE	Information about the channel assignment (see table above)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.13 FB_DALIV2SetTemporaryColourTemperatureTc



Saves the value in the variable [TEMPORARY COLOUR TEMPERATURE Tc](#) [► 338] of the DALI control gear. The value can be read with the function block [FB_DALIV2QueryColourValue](#) [► 354].

The value is expressed in units of 1 Mirek. A value of 0 is ignored and therefore not saved. The color temperature Tc can vary from 1 Mirek (1000000 K) to 65534 Mirek (15.26 K).

The functions [KELVIN TO MIREK \[► 384\]](#) and [MIREK TO KELVIN \[► 385\]](#) are available for converting from or to Kelvin.

The function block changes the DTR (Data Transfer Register) and DTR1 for all DALI control gears of the DALI line.

The function block supports the color representations:

- Color temperature Tc



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nValue      : UINT;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nValue	UINT	The value that is written to the variable TEMPORARY COLOUR TEMPERATURE Tc.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

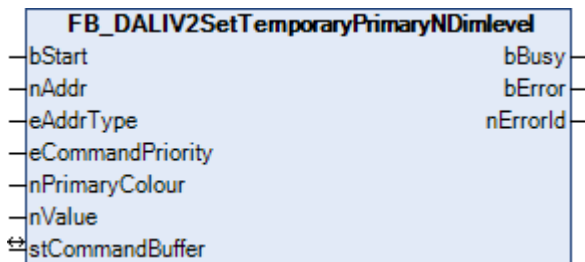
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.14 FB_DALIV2SetTemporaryPrimaryNDimlevel



Saves the value in the variable [TEMPORARY PRIMARY N DIMLEVEL](#) [► 338] of the control gear. The value can be read with the function block [FB_DALIV2QueryColourValue](#) [► 354].

The value is expressed in units of 1 / 65536. The maximum value of the PRIMARY N DIMLEVEL is 0.99997 and is interpreted on a linear scale.

The function block changes the DTR (Data Transfer Register), DTR1 and DTR2 for all DALI control gears of the DALI line.

The function block supports the color representations:

- Primary (color) N



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nPrimaryColour : BYTE;
  nValue      : UINT;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority_ [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nValue	UINT	The value that is written to the variable TEMPORARY PRIMARY N DIMLEVEL.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

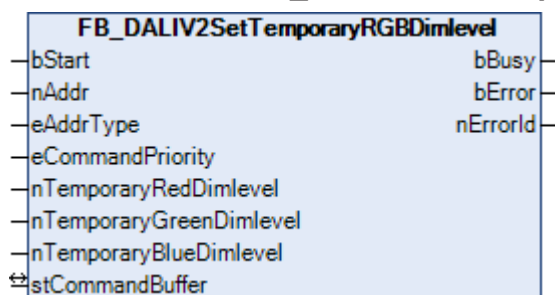
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.15 FB_DALIV2SetTemporaryRGBDimlevel



Saves the values in the variables [TEMPORARY RED DIMLEVEL \[► 338\]](#), [TEMPORARY GREEN DIMLEVEL \[► 338\]](#) and [TEMPORARY BLUE DIMLEVEL \[► 338\]](#) of the DALI control gear. The values can be read with the function block [FB_DALIV2QueryColourValue \[► 354\]](#).

The function block changes the DTR (Data Transfer Register), DTR1 and DTR2 for all DALI control gears of the DALI line.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nTemporaryRedDimlevel : BYTE;
  nTemporaryGreenDimlevel : BYTE;
  nTemporaryBlueDimlevel : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nTemporaryRedDimlevel	BYTE	The new value for TEMPORARY RED DIMLEVEL
nTemporaryGreenDimlevel	BYTE	The new value for TEMPORARY GREEN DIMLEVEL
nTemporaryBlueDimlevel	BYTE	The new value for TEMPORARY BLUE DIMLEVEL

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy   : BOOL;
  bError  : BOOL;
  nErrorId : UDINT;
END_VAR
```

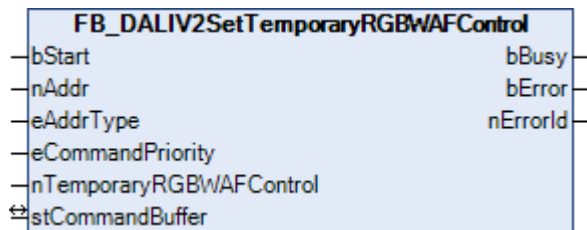
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.16 FB_DALIV2SetTemporaryRGBWAFControl



Saves the value in the variable [TEMPORARY RGBWAF CONTROL](#) [► 338] of the DALI control gear. The value can be read with the function block [FB_DALIV2QueryColourValue](#) [► 354]. The input *nTemporaryRGBWAFControl* contains the new assignment (see table).

Bit	Description
0	Output channel 0 / red
1	Output channel 1 / green
2	Output channel 2 / blue
3	Output channel 3 / white
4	Output channel 4 / amber
5	Output channel 5 / free selectable color
6 - 7	00 = channel control 01 = color control 10 = standardized color control 11 = reserved

The function block changes the DTR (Data Transfer Register) for all DALI control gears of the DALI line.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;

```

```

eCommandPriority      : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
nTemporaryRGBWAFControl : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nTemporaryRGBWAFControl	BYTE	Contains the assignment (see table above)

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

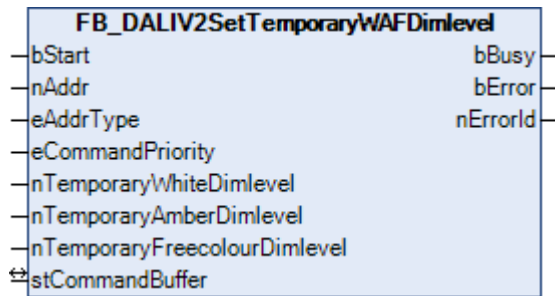
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.17 FB_DALIV2SetTemporaryWAFDimlevel



Saves the values in the variables [TEMPORARY WHITE DIMLEVEL \[► 338\]](#), [TEMPORARY AMBER DIMLEVEL \[► 338\]](#) and [TEMPORARY FREECOLOUR DIMLEVEL \[► 338\]](#) of the DALI control gear. The values can be read with the function block [FB_DALIV2QueryColourValue \[► 354\]](#).

The function block changes the DTR (Data Transfer Register), DTR1 and DTR2 for all DALI control gears of the DALI line.

The function block supports the color representations:

- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nTemporaryWhiteDimlevel : BYTE;
    nTemporaryAmberDimlevel : BYTE;
    nTemporaryFreecolourDimlevel : BYTE;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nTemporaryWhiteDimlevel	BYTE	The new value for TEMPORARY WHITE DIMLEVEL
nTemporaryAmberDimlevel	BYTE	The new value for TEMPORARY AMBER DIMLEVEL
nTemporaryFreecolourDimlevel	BYTE	The new value for TEMPORARY FREECOLOR DIMLEVEL

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

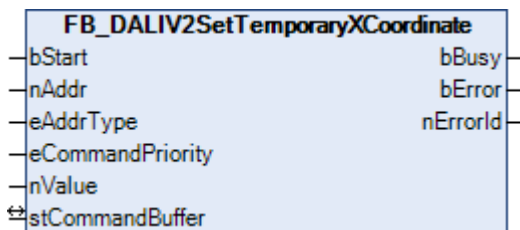
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.18 FB_DALIV2SetTemporaryXCoordinate



Saves the value in the variable [TEMPORARY x-COORDINATE \[► 338\]](#) of the DALI control gear. The value can be read with the function block [FB_DALIV2QueryColourValue \[► 354\]](#).

The function block changes the DTR (Data Transfer Register) and DTR1 for all DALI control gears of the DALI line.

The function block supports the color representations:

- xy coordinates
- Primary (color) N



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
```



```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
nValue         : UINT;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nValue	UINT	The value that is written to the variable TEMPORARY x-COORDINATE.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

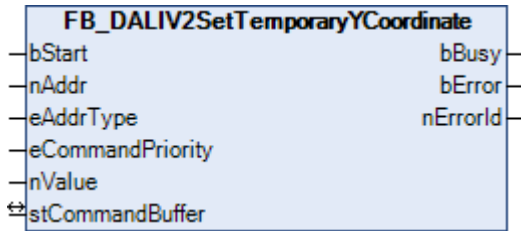
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.19 FB_DALIV2SetTemporaryYCoordinate



Saves the value in the variable `TEMPORARY y-COORDINATE` [► 338] of the DALI control gear. The value can be read with the function block `FB_DALIV2QueryColourValue` [► 354].

The function block changes the DTR (Data Transfer Register) and DTR1 for all DALI control gears of the DALI line.

The function block supports the color representations:

- xy coordinates
- Primary (color) N



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nValue      : UINT;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nValue	UINT	The value that is written to the variable <code>TEMPORARY y-COORDINATE</code> .

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	<code>ST_DALIV2CommandBuffer</code>	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

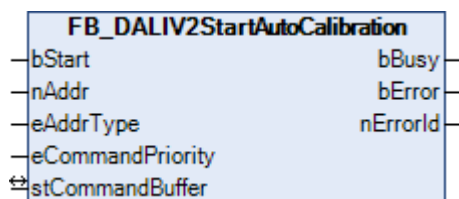
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.20 FB_DALIV2StartAutoCalibration



The calibration procedure is started in order to measure the x-coordinate, the y-coordinate and the TY value of all supported primary colors.

The command starts a 15-minute timer or initiates it again. Bit 2 of the variable [COLOUR STATUS](#) [► 338] is 1 as long as the timer is active (see [FB_DALIV2QueryColourStatus](#) [► 351]). On expiry of the timer the last color representation, the last color value and the last lamp power level are directly saved again.

During the timer period the DALI control gear carries out a calibration procedure in order to measure the x-coordinate, the y-coordinate and the TY value of all supported primary colors. Whilst the calibration procedure is running, the DALI control gear does not react to any commands apart from [TERMINATE](#) [► 178], [QUERY COLOUR STATUS](#) [► 351] and [START AUTO CALIBRATION](#). In addition, bit 3 in the variable [COLOUR STATUS](#) [► 338] is set to 0 at the start of the calibration. The [TERMINATE](#) [► 178] command ends the procedure and stops the timer.

If the calibration was successful, bit 3 in [COLOUR STATUS](#) [► 338] is set to 1 and the timer is stopped. If the calibration was not successful, then the last successful calibration data are restored if the DALI control gear is able to do so. Subsequently, bit 3 of [COLOUR STATUS](#) is set to 1. The ability to restore the last successful calibration data is a feature of the operating device (see [QUERY GEAR FEATURES/STATUS](#) [► 357] command).

Due to the fact that calibration can take longer than 15 minutes, the status of the automatic calibration should be checked periodically with the [QUERY COLOUR STATUS](#) [► 351] command and the calibration timer should be restarted with the [START AUTO CALIBRATION](#) command (if necessary).

The function block supports the color representations:

- xy coordinates
- Color temperature Tc

- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

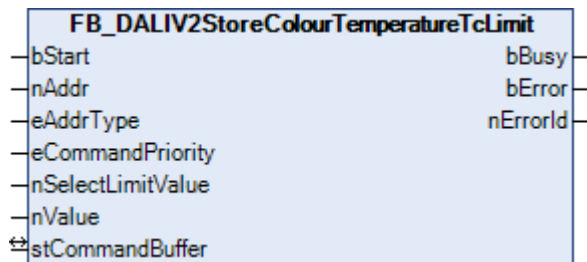
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.21 FB_DALIV2StoreColourTemperatureTcLimit



Saves the value in the variable COLOUR TEMPERATURE Tc COOLEST [► 338], COLOUR TEMPERATURE Tc WARMEST [► 338], COLOUR TEMPERATURE Tc PHYSICAL COOLEST [► 338] or COLOUR TEMPERATURE Tc PHYSICAL WARMEST [► 338] of the DALI control gear. The values can be read with the function block FB_DALIV2QueryColourValue [► 354]. The *nSelectLimitValue* input defines the new limit value to be set:

Value	Limit value	Description
0	COLOUR TEMPERATURE Tc COOLEST	lowest possible value, but always equal to or warmer than the lowest possible physical value.
1	COLOUR TEMPERATURE Tc WARMEST	highest possible value, but always equal to or cooler than the highest possible physical value.
2	COLOUR TEMPERATURE Tc PHYSICAL COOLEST	lowest possible physical value.
3	COLOUR TEMPERATURE Tc PHYSICAL WARMEST	highest possible physical value.

The functions KELVIN TO MIREK [► 384] and MIREK TO KELVIN [► 385] are available for converting from or to Kelvin.

The function block changes the DTR (Data Transfer Register), DTR1 and DTR2 for all DALI control gears of the DALI line.

The function block supports the color representations:

- Color temperature Tc



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block FB_DALIV2EnableDeviceType [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nSelectLimitValue : BYTE;
  nValue      : UINT;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nSelectLimitValue	BYTE	Specifies the new limit value to be set (see table above).
nValue	UINT	The value that is written to the selected variable.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

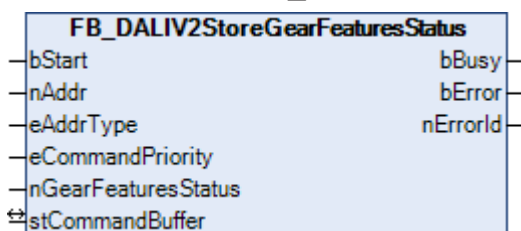
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.22 FB_DALIV2StoreGearFeaturesStatus



Saves the value in the variable [GEAR FEATURES/STATUS \[► 338\]](#) of the DALI control gear. The values can be read with the function block [FB_DALIV2QueryGearFeaturesStatus \[► 357\]](#).

If bit 0 is set to 1, all commands for the control of the lamp power, with the exception of [ENABLE DAPC SEQUENCE \[► 115\]](#), must automatically trigger a color transition.

Bit	Description
0	Automatic activation.
1 - 7	reserved.

The function block changes the DTR (Data Transfer Register) for all DALI control gears of the DALI line.

The function block supports the color representations:

- xy coordinates
- Color temperature Tc
- Primary (color) N
- RGBWAF



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nGearFeaturesStatus : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nGearFeaturesStatus	BYTE	Value that is written to the variable GEAR FEATURES/STATUS.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB KL6811Communication [► 77] (KL6811) or FB KL6821Communication [► 82] (KL6821).

Outputs

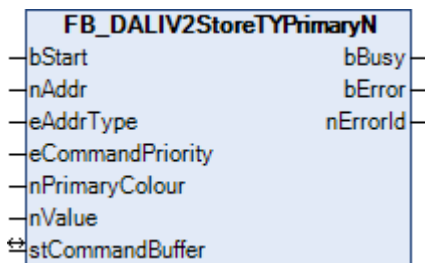
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.23 FB_DALIV2StoreTYPrimaryN



Saves the value in the variable TY PRIMARY N [[► 338](#)] of the DALI control gear.

The value is expressed in units of 0.5 lm, which results in a possible range of TYmin = 0 lm to TYmax = 32767 lm. A value of 65535 (MASK) means "unknown". The *nPrimaryColour* parameter specifies the primary color and must be within the range of 0 to 5, depending on the available number of primary colors. The command is ignored for every other value.

The function block changes the DTR (Data Transfer Register), DTR1 and DTR2 for all DALI control gears of the DALI line.

The function block supports the color representations:

- Primary (color) N



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nPrimaryColour : BYTE;
    nValue      : UINT;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nValue	UINT	The value that is written to the variable TY PRIMARY N.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

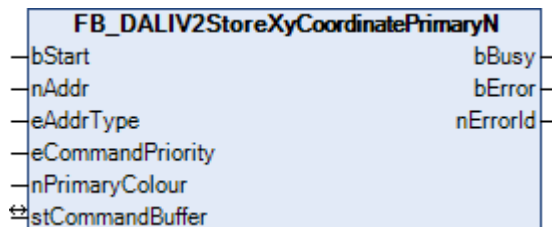
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.24 FB_DALIV2StoreXyCoordinatePrimaryN



Copies the value from the variables [TEMPORARY x-COORDINATE \[► 338\]](#) and [TEMPORARY y-COORDINATE \[► 338\]](#) to the variables [x-COORDINATE PRIMARY N \[► 338\]](#) and [y-COORDINATE PRIMARY N \[► 338\]](#).

The *nPrimaryColour* parameter specifies the primary color and must be within the range of 0 to 5, depending on the available number of primary colors. The command is ignored for every other value.

This command can be used to store the current xy coordinates associated with the primary color. xy coordinates outside the color space chromaticity diagram are not meaningful and should therefore be avoided.

The function block changes the DTR2 (Data Transfer Register) for all DALI control gears of the DALI line.

The function block supports the color representations:

- Primary (color) N



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nPrimaryColour : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nPrimaryColour	BYTE	Primary color (0 - 5)

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <code>FB_KL6811Communication</code> [► 77] (KL6811) or <code>FB_KL6821Communication</code> [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

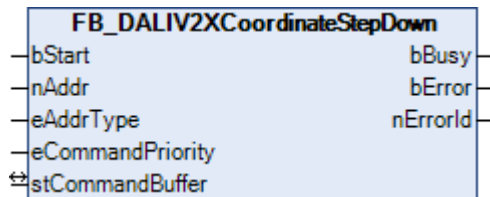
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.25 FB_DALIV2XCoordinateStepDown



The variable x-COORDINATE is reduced by 256 steps (256 / 65536) without cross-fading.

If the new color value does not correspond to a color that can be achieved by the DALI control gear, this must be indicated by bit 0 of [COLOUR STATUS](#) [► 338] (xy-coordinate color point lies outside of the valid range). The command is executed only if bit 4 of [COLOUR STATUS](#) [► 338] (color representation xy-coordinate active) is set.

The function block supports the color representations:

- xy coordinates



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

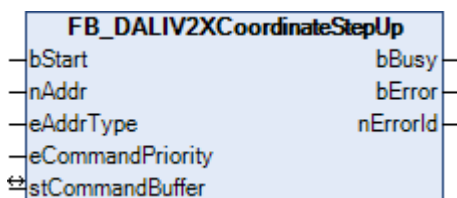
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.26 FB_DALIV2XCoordinateStepUp



The variable x-COORDINATE is increased by 256 steps (256 / 65536) without cross-fading.

If the new color value does not correspond to a color that can be achieved by the DALI control gear, this must be indicated by bit 0 of [COLOUR STATUS \[► 338\]](#) (xy-coordinate color point lies outside of the valid range). The command is executed only if bit 4 of [COLOUR STATUS \[► 338\]](#) (color representation xy-coordinate active) is set.

The function block supports the color representations:

- xy coordinates



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

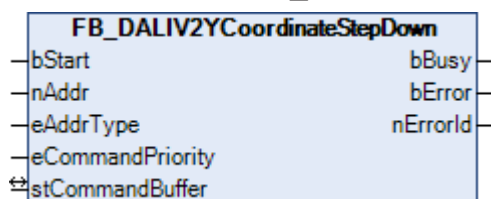
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.27 FB_DALIV2YCoordinateStepDown



The variable y-COORDINATE is reduced by 256 steps (256 / 65536) without cross-fading.

If the new color value does not correspond to a color that can be achieved by the DALI control gear, this must be indicated by bit 0 of [COLOUR STATUS \[► 338\]](#) (xy-coordinate color point lies outside of the valid range). The command is executed only if bit 4 of [COLOUR STATUS \[► 338\]](#) (color representation xy-coordinate active) is set.

The function block supports the color representations:

- xy coordinates



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType \[► 92\]](#). The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

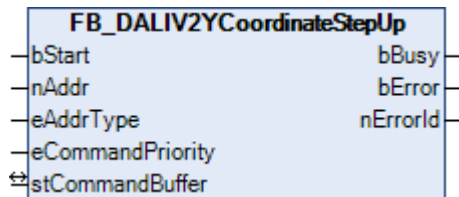
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.28 FB_DALIV2YCoordinateStepUp



The variable y-COORDINATE is increased by 256 steps (256 / 65536) without cross-fading.

If the new color value does not correspond to a color that can be achieved by the DALI control gear, this must be indicated by bit 0 of [COLOUR STATUS](#) [► 338] (xy-coordinate color point lies outside of the valid range). The command is executed only if bit 4 of [COLOUR STATUS](#) [► 338] (color representation xy-coordinate active) is set.

The function block supports the color representations:

- xy coordinates



This command belongs to the application extended commands for lamps for the color/color temperature control with DALI interface. These only work if they are preceded by the *Enable Device Type 8* command, which can be sent with the function block [FB_DALIV2EnableDeviceType](#) [► 92]. The command *Enable Device Type 8* is internally placed automatically before all application extended commands for lamps for the color/color temperature control with DALI interface.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

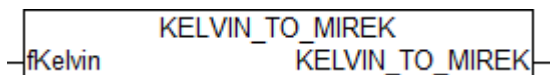
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.29 KELVIN_TO_MIREK



Conversion of the color temperature from Kelvin to Mirek.

Mirek is the unit that is used with most DALI commands. The return value is limited and lies within the range from 0 ... 65535 (see table).

Mirek = 1,000,000 / (color temperature in Kelvin).

Kelvin	Mirek
0	65535
15	65535
16	62500
1000	1000
10000	100
1000000	1
1000001	0

Inputs

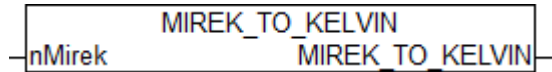
```
VAR_INPUT
    fKelvin : LREAL;
END_VAR
```

Name	Type	Description
fKelvin	LREAL	Color temperature in Kelvin

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.8.30 MIREK_TO_KELVIN



Conversion of the color temperature from Mirek to Kelvin.

Mirek is the unit that is used with most DALI commands. The return value is limited and lies within the range from approx. 15.259 ... 1000001 (see table).

Mirek = 1,000,000 / (color temperature in Kelvin).

Mirek	Kelvin
0	1000001
1	1000000
100	10000
1000	1000
10000	100
65534	15.259
65535	15.259

Inputs

```

VAR_INPUT
    nMirek : UINT;
END_VAR
  
```

Name	Type	Description
nMirek	UINT	Color temperature in Mirek

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.2.9 Part 301 (button)

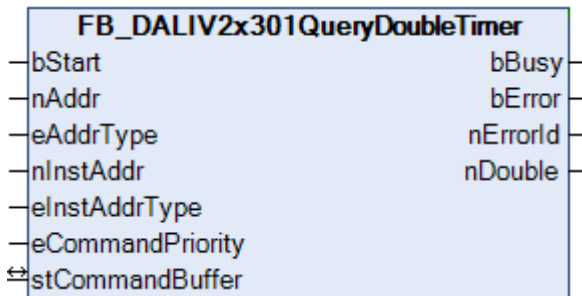
Function blocks

A detailed description of the individual DALI commands and the variables can be found in standard IEC 62386 Part 301.

Name	Description
FB_DALIV2x301QueryDoubleTimer [▶ 386]	Queries the value of the DOUBLE TIMER.
FB_DALIV2x301QueryDoubleTimerMin [▶ 387]	Queries the minimum value of the DOUBLE TIMER.
FB_DALIV2x301QueryRepeatTimer [▶ 388]	Queries the value of the REPEAT TIMER.
FB_DALIV2x301QueryShortTimer [▶ 390]	Queries the value of the SHORT TIMER.
FB_DALIV2x301QueryShortTimerMin [▶ 391]	Queries the minimum value of the SHORT TIMER.
FB_DALIV2x301QueryStuckTimer [▶ 392]	Queries the value of the STUCK TIMER.
FB_DALIV2x301SetDoubleTimer [▶ 394]	Sets the value of the DOUBLE TIMER.
FB_DALIV2x301SetRepeatTimer [▶ 395]	Sets the value of the REPEAT TIMER.

Name	Description
FB_DALIV2x301SetShortTimer [▶ 396]	Sets the value of the SHORT TIMER.
FB_DALIV2x301SetStuckTimer [▶ 398]	Sets the value of the STUCK TIMER.

4.1.2.9.1 FB_DALIV2x301QueryDoubleTimer



The function block FB_DALIV2x301QueryDoubleTimer queries the value of the DOUBLE TIMER.

The unit is 20 ms. The maximum permissible value is 2000 ms. The value 0 deactivates the timer. The smallest permitted value can be queried with the function block FB_DALIV2x301QueryDoubleTimerMin.

Inputs

```
VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr       : BYTE := 0;
  eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [▶ 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [▶ 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [▶ 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [▶ 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
```

```

nErrorId      : UDINT;
nDouble       : BYTE;
END_VAR

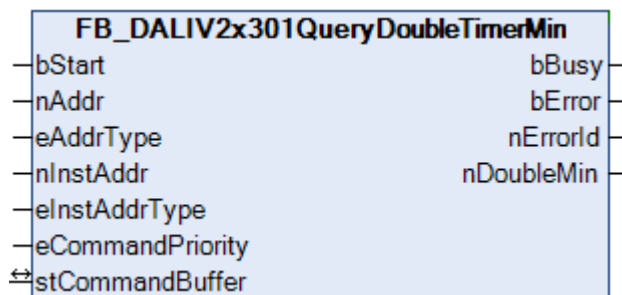
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDouble	BYTE	Value of the DOUBLE TIMER [20 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.2 FB_DALIV2x301QueryDoubleTimerMin



The function block FB_DALIV2x301QueryDoubleTimerMin queries the minimum value of the DOUBLE TIMER.

The unit is 20 ms.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.

Name	Type	Description
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

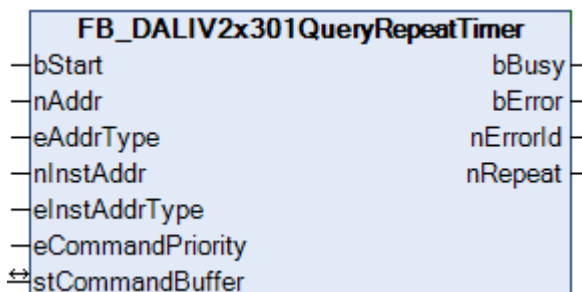
```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
    nDoubleMin : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDoubleMin	BYTE	Value of the DOUBLE TIMER [20 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.3 FB_DALIV2x301QueryRepeatTimer



The function block FB_DALIV2x301QueryRepeatTimer queries the value of the REPEAT TIMER.

The unit is 20 ms. The permissible value range is 100 ms to 2000 ms, i.e. from 5 to 100.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

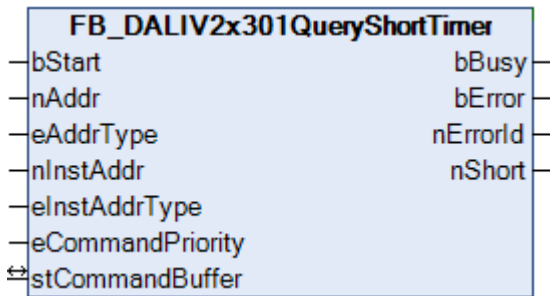
```
VAR_OUTPUT
    bBusy          : BOOL;
    bError         : BOOL;
    nErrorId       : UDINT;
    nRepeat        : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nRepeat	BYTE	Value of the REPEAT TIMER [20 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.4 FB_DALIV2x301QueryShortTimer



The function block FB_DALIV2x301QueryShortTimer queries the value of the SHORT TIMER.

The unit is 20 ms. The maximum permissible value is 5100 ms. The minimum permissible value can be queried with the function block FB_DALIV2x301QueryShortTimerMin [► 391].

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
  
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

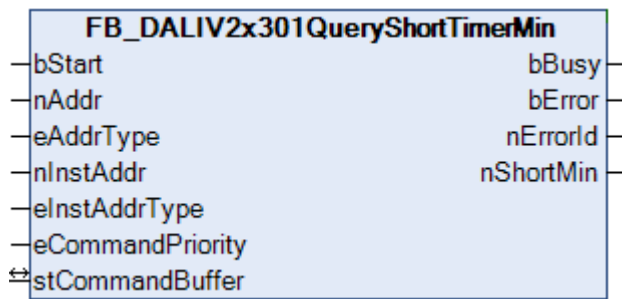
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nShort     : BYTE;
END_VAR
  
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nShort	BYTE	Value of the SHORT TIMER [20 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.5 FB_DALIV2x301QueryShortTimerMin



The function block FB_DALIV2x301QueryShortTimerMin queries the minimum value of the SHORT TIMER.

The unit is 20 ms.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer      : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

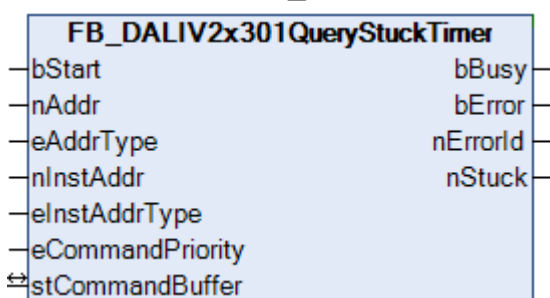
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nShortMin  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nShortMin	BYTE	Value of the SHORT TIMER [20 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.6 FB_DALIV2x301QueryStuckTimer



The function block FB_DALIV2x301QueryStuckTimer queries the value of the STUCK TIMER.

The unit is 1 s. The permissible value range is from 5 s to 255 s.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```


Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

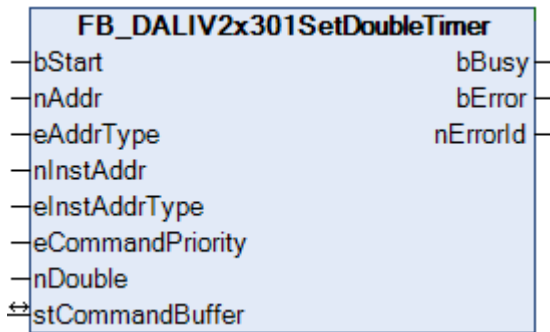
```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
    nStuck : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nStuck	BYTE	Value of the STUCK TIMER [s]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.7 FB_DALIV2x301SetDoubleTimer



The function block FB_DALIV2x301SetDoubleTimer sets the value of the DOUBLE TIMER.

The unit is 20 ms. The maximum permissible value is 2000 ms. The value 0 deactivates the timer. The minimum permissible value can be queried with [FB_DALIV2x301QueryDoubleTimerMin](#) [► 387].

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDouble     : BYTE := 0;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDouble	BYTE	Value of the DOUBLE TIMER [20 ms]

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

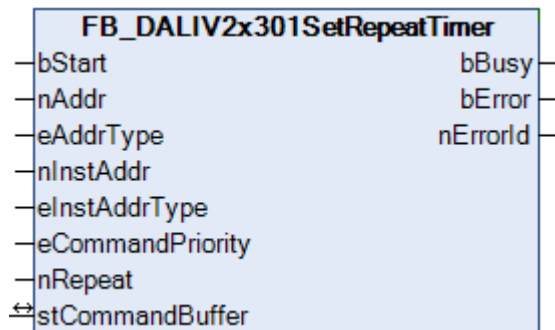
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.8 FB_DALIV2x301SetRepeatTimer



The function block FB_DALIV2x301SetRepeatTimer sets the value of the REPEAT TIMER.

The unit is 20 ms. The permissible value range is 100 ms to 2000 ms, i.e. from 5 to 100.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nRepeat     : BYTE := 8;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nRepeat	BYTE	Value of the REPEAT TIMER [20 ms]

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

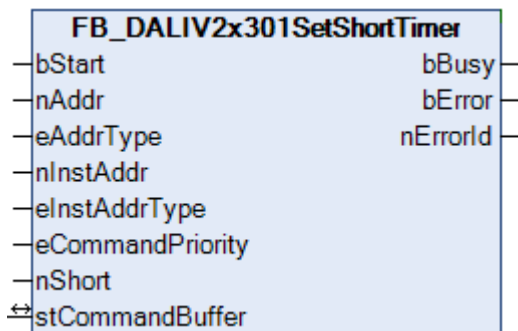
```
VAR_OUTPUT
  bBusy : BOOL;
  bError : BOOL;
  nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.9 FB_DALIV2x301SetShortTimer



The function block FB_DALIV2x301SetShortTimer sets the value of the SHORT TIMER.

The unit is 20 ms. The maximum permissible value is 5100 ms. The minimum permissible value can be queried with the function block [FB_DALIV2x301QueryShortTimerMin \[► 391\]](#).

Inputs

```
VAR_INPUT
  bStart : BOOL;
  nAddr : BYTE;
  eAddrType : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
```

```

eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
nShort           : BYTE := 25;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nShort	BYTE	Value of the SHORT TIMER [20 ms]

Inputs/outputs

```

VAR_IN_OUT
stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
bBusy   : BOOL;
bError  : BOOL;
nErrorId : UDINT;
END_VAR

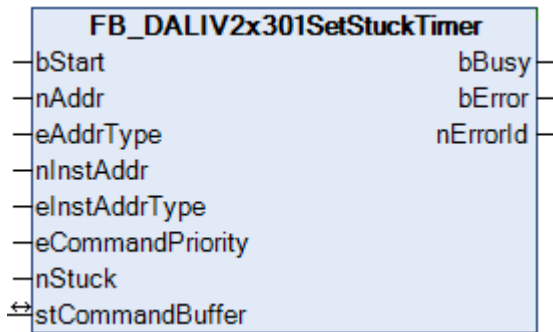
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.9.10 FB_DALIV2x301SetStuckTimer



The function block FB_DALIV2x301SetStuckTimer sets the value of the STUCK TIMER.

The unit is 1 s. The permissible value range is from 5 s to 255 s.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nStuck      : BYTE := 20;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nStuck	BYTE	Value of the STUCK TIMER [s]

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

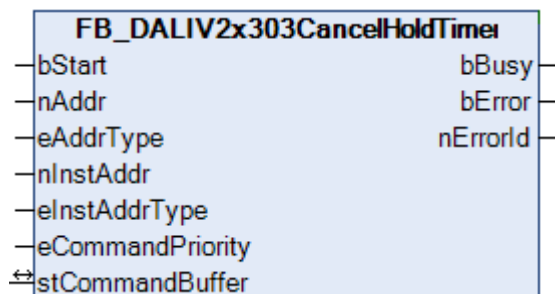
4.1.2.10 Part 303 (occupancy sensor)

Function blocks

A detailed description of the individual DALI commands and the variables can be found in standard IEC 62386 Part 303.

Name	Description
FB_DALIV2x303CancelHoldTimer [► 399]	Terminates the HOLD TIMER prematurely.
FB_DALIV2x303CatchMovement [► 401]	After calling this command, an event is only sent once if a movement is detected.
FB_DALIV2x303QueryCatching [► 402]	Queries whether the system is waiting for the detection of movement.
FB_DALIV2x303QueryDeadtimeTimer [► 403]	Queries the value of the DEADTIME TIMER.
FB_DALIV2x303QueryHoldTimer [► 404]	Queries the value of the HOLD TIMER.
FB_DALIV2x303QueryReportTimer [► 406]	Queries the value of the REPORT TIMER.
FB_DALIV2x303SetDeadtimeTimer [► 407]	Sets the value of the DEADTIME TIMER.
FB_DALIV2x303SetHoldTimer [► 408]	Sets the value of the HOLD TIMER.
FB_DALIV2x303SetReportTimer [► 410]	Sets the value of the REPORT TIMER.

4.1.2.10.1 FB_DALIV2x303CancelHoldTimer



The function block FB_DALIV2x303CancelHoldTimer terminates the HOLD TIMER prematurely.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;

```

```

nInstAddr      : BYTE := 0;
eInstAddrType  : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

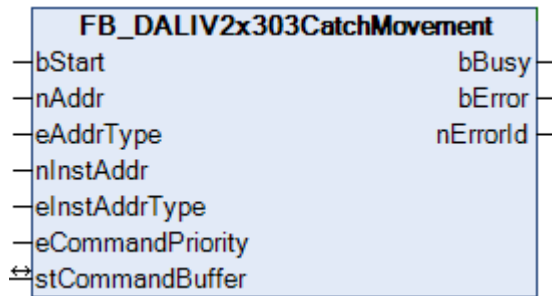
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.2 FB_DALIV2x303CatchMovement



After calling this command, an event is sent once if a movement is detected.

For this function the event filter must be configured accordingly.

Inputs

```
VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR
```

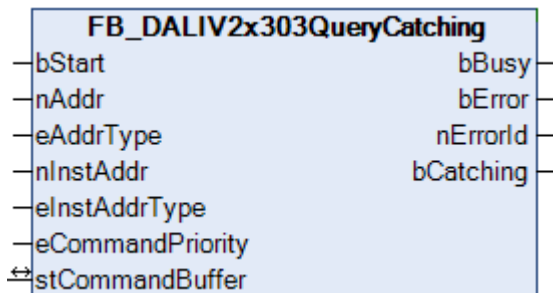
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.3 FB_DALIV2x303QueryCatching



The function block FB_DALIV2x303QueryCatching queries whether the system is waiting for a movement to be detected. This function can be activated by [FB_DALIV2x303CatchMovement](#) [► 401].

Inputs

```

VAR_INPUT
  bStart          : BOOL;
  nAddr           : BYTE;
  eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr       : BYTE := 0;
  eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

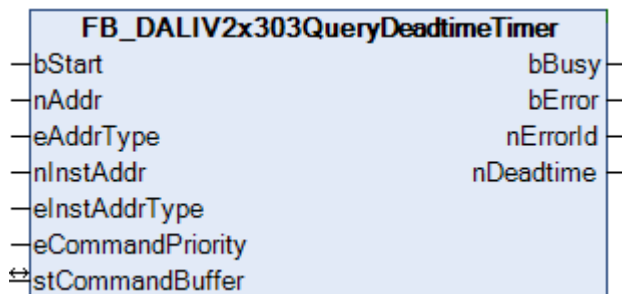
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  bCatching : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bCatching	BOOL	Catching active

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.4 FB_DALIV2x303QueryDeadtimeTimer



Queries the value of the DEADTIME TIMER.

The unit is 50 ms. The permissible value range is from 0 s to 12.75 s.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

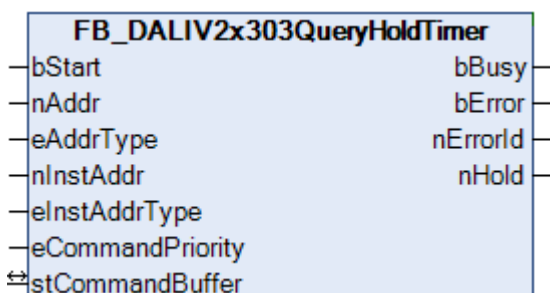
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nDeadtime  : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDeadtime	BYTE	Value of the DEADTIME TIMER [50 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.5 FB_DALIV2x303QueryHoldTimer



The function block FB_DALIV2x303QueryHoldTimer queries the value of the HOLD TIMER.

The unit is 10 s. The permissible value range is from 1 s to 42.3 min.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

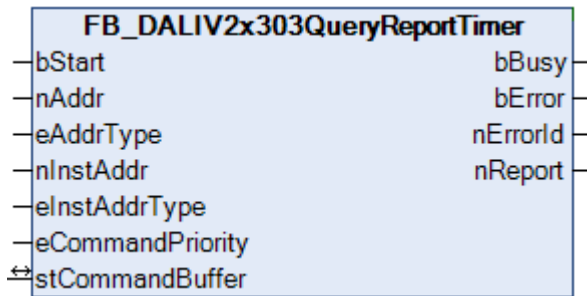
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nHold      : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nHold	BYTE	Value of the HOLD TIMER [10 s]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.6 FB_DALIV2x303QueryReportTimer



The function block FB_DALIV2x303QueryReportTimer queries the value of the REPORT TIMER.

The unit is 1 s. The permissible value range is from 1 s to 4 min 15 s.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nReport    : BYTE;
END_VAR
```

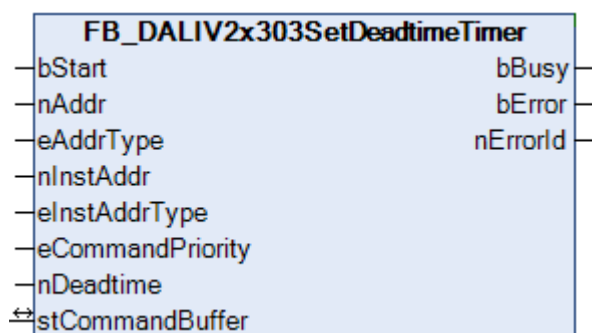
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nReport	BYTE	Value of the REPORT TIMER [s]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.7 FB_DALIV2x303SetDeadtimeTimer



The function block FB_DALIV2x303SetDeadtimeTimer sets the value of the DEADTIME TIMER.

The unit is 50 ms. The permissible value range is from 0 s to 12.75 s.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nDeadtime       : BYTE := 2;
END_VAR
  
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDeadtime	BYTE	Value of the DEADTIME TIMER [50 ms]

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer    : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

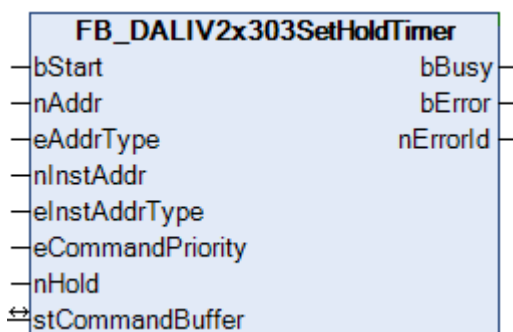
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.8 FB_DALIV2x303SetHoldTimer



The function block FB_DALIV2x303SetHoldTimer sets the value of the HOLD TIMER.

If the value 0 is transferred, the HOLD TIME is set to 1 s. Incrementing takes place in 10 s steps. The permissible value range is 1 s to 42.3 min.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nHold       : BYTE := 90;
END_VAR
```


Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nHold	BYTE	Value of the HOLD TIMER [10 s]. The value 0 corresponds to 1 s.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

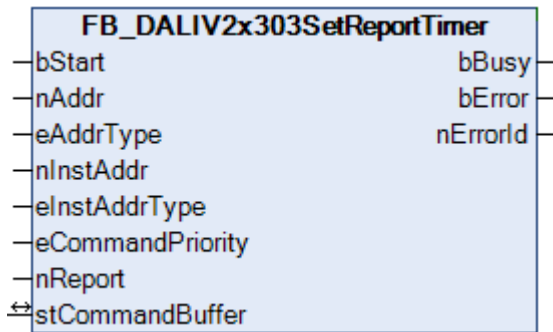
```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.10.9 FB_DALIV2x303SetReportTimer



The function block FB_DALIV2x303SetReportTimer sets the value of the REPORT TIMER.

The unit is 1 s. The permissible value range is from 1 s to 4 min 15 s.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nReport         : BYTE := 20;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nReport	BYTE	Value of the REPORT TIMER [s]

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

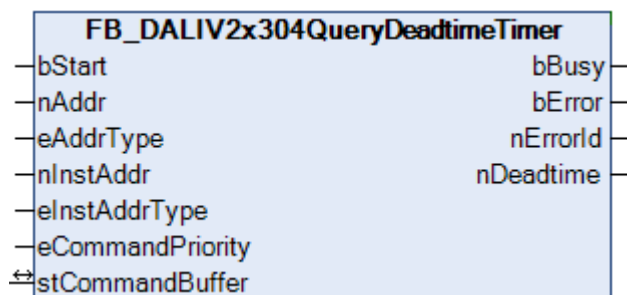
4.1.2.11 Part 304 (brightness sensors)

Function blocks

A detailed description of the individual DALI commands and the variables can be found in standard IEC 62386 Part 304.

Name	Description
FB_DALIV2x304QueryDeadtimeTimer [► 411]	Queries the value of the DEADTIME TIMER.
FB_DALIV2x304QueryHysteresis [► 413]	Queries the hysteresis value.
FB_DALIV2x304QueryHysteresisMin [► 414]	Queries the value for the minimum possible hysteresis.
FB_DALIV2x304QueryReportTimer [► 415]	Queries the value of the REPORT TIMER.
FB_DALIV2x304SetDeadtimeTimer [► 416]	Sets the value of the DEADTIME TIMER.
FB_DALIV2x304SetHysteresis [► 418]	Sets the hysteresis value.
FB_DALIV2x304SetHysteresisMin [► 419]	Sets the value for the minimum possible hysteresis.
FB_DALIV2x304SetReportTimer [► 420]	FB_DALIV2x304SetReportTimer

4.1.2.11.1 FB_DALIV2x304QueryDeadtimeTimer



The function block FB_DALIV2x304QueryDeadtimeTimer queries the value of the DEADTIME TIMER.

The unit is 50 ms. The permissible value range is from 0 s to 12.75 s.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;

```

```

eInstAddrType      : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
eCommandPriority    : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nDeadtime  : BYTE;
END_VAR

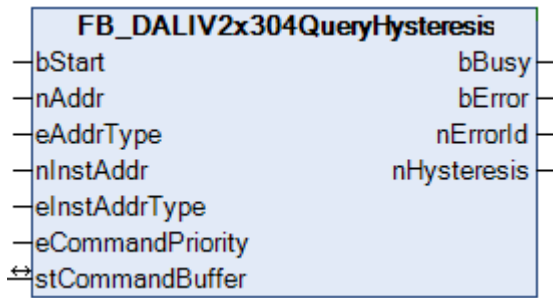
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nDeadtime	BYTE	Value of the DEADTIME TIMER [50 ms]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.2 FB_DALIV2x304QueryHysteresis



The function block FB_DALIV2x304QueryHysteresis queries the value for the hysteresis. The hysteresis is given in % and is within the range 0 % to 25 %.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nHysteresis : BYTE;
END_VAR
```

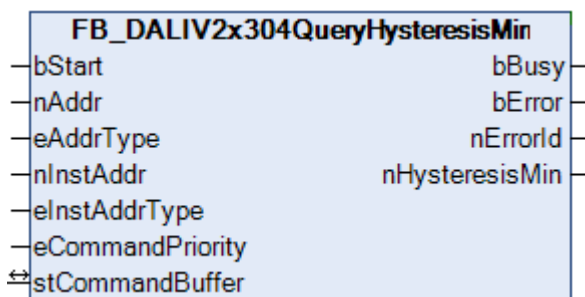
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nHysteresis	BYTE	Hysteresis in %.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.3 FB_DALIV2x304QueryHysteresisMin



The function block FB_DALIV2x304QueryHysteresisMin queries the value for the minimum possible hysteresis.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

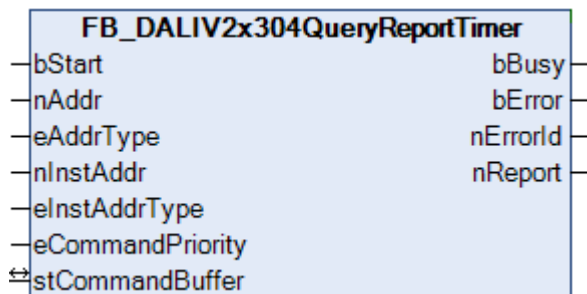
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nHysteresisMin : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nHysteresisMin	BYTE	Minimum possible hysteresis

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.4 FB_DALIV2x304QueryReportTimer



The function block FB_DALIV2x304QueryReportTimer queries the value of the REPORT TIMER.

The unit is 1 s. The permissible value range is from 1 s to 4 min 15 s.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

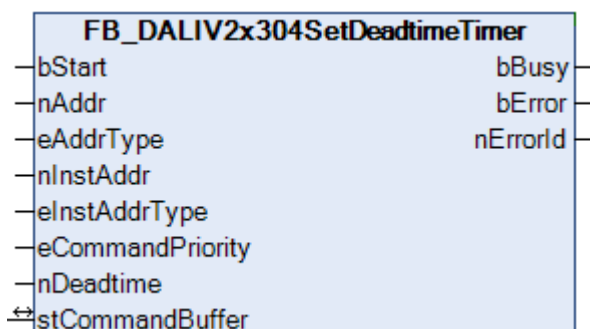
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nReport    : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nReport	BYTE	Value of the REPORT TIMER [s]

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.5 FB_DALIV2x304SetDeadtimeTimer



The function block FB_DALIV2x304SetDeadtimeTimer sets the value of the DEADTIME TIMER.

The unit is 50 ms. The permissible value range is from 0 s to 12.75 s.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  nInstAddr   : BYTE := 0;
  eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDeadtime   : BYTE := 2;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

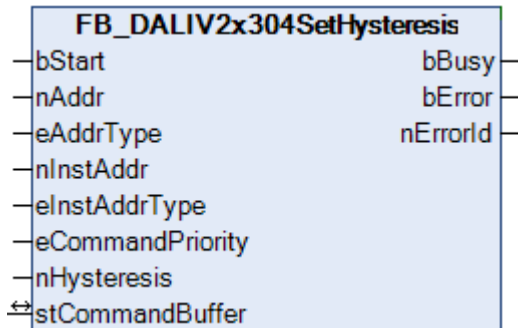
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.6 FB_DALIV2x304SetHysteresis



The function block FB_DALIV2x304SetHysteresis sets the value of the hysteresis.

The hysteresis is given in % and is within the range 0 % to 25 %.

 Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nHysteresis     : BYTE := 5;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	<u>E_DALIV2InstAddrType</u> [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nHysteresis	BYTE	Hysteresis in %

 Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

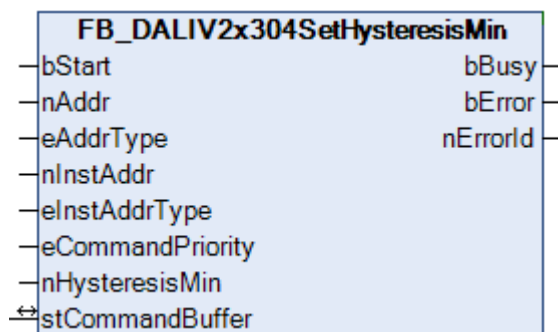
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.7 FB_DALIV2x304SetHysteresisMin



The function block FB_DALIV2x304SetHysteresisMin sets the value for the minimum possible hysteresis.

Since the hysteresis is given as a percentage, the absolute value of the hysteresis depends on the actual measured value. For very small measured values, the hysteresis is therefore also very small. This causes unnecessary events to be sent. For this reason, a minimum possible hysteresis can be set.

🔌 Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr   : BYTE := 0;
    eInstAddrType : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nHysteresisMin : BYTE := 0;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast

Name	Type	Description
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nHysteresisMin	BYTE	Minimum possible hysteresis

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.2.11.8 FB_DALIV2x304SetReportTimer



The function block FB_DALIV2x304SetReportTimer sets the value of the REPORT TIMER.

The unit is 1 s. The permissible value range is from 1 s to 4 min 15 s.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    nInstAddr       : BYTE := 0;
    eInstAddrType   : E_DALIV2InstAddrType := eDALIV2InstAddrTypeNumber;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nReport         : BYTE := 30;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
nInstAddr	BYTE	Address of the instance within the DALI control device
eInstAddrType	<u>E_DALIV2InstAddrType</u> [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nReport	BYTE	Value of the REPORT TIMER [s]

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with <u>FB_KL6821Communication</u> [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy   : BOOL;
    bError  : BOOL;
    nErrorId : UDINT;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.3 Third-party function blocks

4.1.3.1 Interior Automation

The Interior Automation company has defined its own DALI commands for PIR sensors. These commands extend beyond the possible DALI commands in accordance with the IEC 62386 standard. Please contact Interior Automation for a more detailed description of the commands.

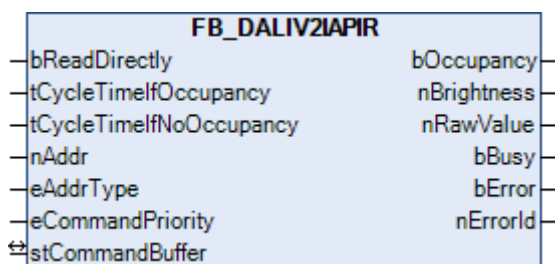
Function blocks

	Description
FB_DALIV2IAPIR [► 422]	This function block cyclically reads the status of an IA PIR sensor and scales the measured brightness and detected presence based on the received value.
FB_DALIV2IAPIRPhysicalIndicatorOff	Deactivates the red LED.
FB_DALIV2IAPIRPhysicalIndicatorOn	Activates the red LED.
FB_DALIV2IAPIRQueryExtendedVersion	Reads the software version number.
FB_DALIV2IAPIRQueryFlags	Reads the properties.
FB_DALIV2IAPIRQuerySensitivity	Reads the sensor sensitivity.
FB_DALIV2IAPIRQueryTimeout	Reads the time-out.
FB_DALIV2IAPIRStartIdentification	Makes the green LED flash for 10 seconds.
FB_DALIV2IAPIRStoreDTRAsFlags	Saves the data in the Data Transfer Register (DTR) as properties.
FB_DALIV2IAPIRStoreDTRAsSensitivity	Saves the data in the Data Transfer Register (DTR) as sensor sensitivity.
FB_DALIV2IAPIRStoreDTRAsTimeout	Saves the data in the Data Transfer Register (DTR) as Time-out.



These commands belong to the application extended commands for DALI devices. These only work if they are preceded by the command *Enable Device Type 128*, which can be sent with the function block **FB_DALIV2EnableDeviceType** [► 92]. The command *Enable Device Type 128* is automatically placed internally before all application extended commands for DALI devices.

4.1.3.1.1 FB_DALIV2IAPIR



This function block **FB_DALIV2IAPIR** cyclically reads the status of an IA PIR sensor and scales the measured brightness and detected occupancy based on the received value.

Two different cycle times can be specified. One cycle time that is used if no occupancy is detected and one that is used in case of occupancy. In this way access to the DALI bus can be minimized. If occupancy is detected a slower cycle time (e.g. 20 s) can usually be selected, because light control and switching off the lighting is not time-critical. If there is no occupancy, then a shorter cycle time (e.g. 2 s) should be selected. As a result, the lighting is switched on with the shortest possible reaction time when the room is entered.

Further information and a description of the electrical and physical properties can be found in the product description for the IA PIR sensor.

Inputs

```
VAR_INPUT
    bReadDirectly      : BOOL := FALSE;
    tCycleTimeIfOccupancy : TIME := t#20s;
    tCycleTimeIfNoOccupancy : TIME := t#2s;
    nAddr              : BYTE := 0;
    eAddrType          : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority    : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bReadDirectly	BOOL	The function block is activated by a positive edge at this input.
tCycleTimeIfOccupancy	TIME	Cycle time if occupancy
tCycleTimeIfNoOccupancy	TIME	Cycle time if no occupancy
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eInstAddrType	E_DALIV2InstAddrType [► 463]	Defines the access mode to the desired instance within the DALI control device.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bOccupancy : BOOL;
    nBrightness : INT;
    nRawValue : BYTE;
    bBusy : BOOL;
    bError : BOOL;
    nErrorId : UDINT;
END_VAR
```

Name	Type	Description
bOccupancy	BOOL	The output is set if the sensor detects occupancy.
nBrightness	INT	Measured brightness in lux
nRawValue	BYTE	The value of the sensor read before the conversion
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

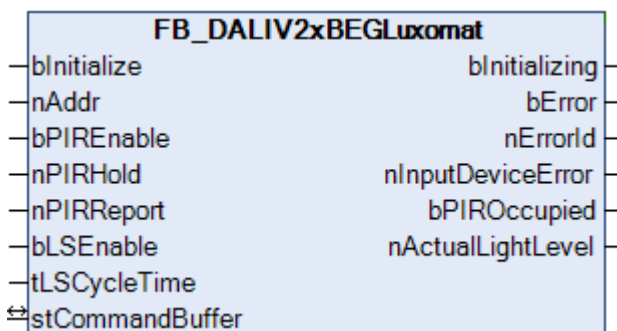
4.1.3.2 B.E.G.

Function blocks

The company B.E.G. has defined its own special DALI commands. These commands extend beyond the possible DALI commands in accordance with the IEC 62386 standard. However, these commands can only be used for certain B.E.G. devices. Please contact B.E.G. for a more detailed description of the commands.

Name	Description
FB_DALIV2xBEGLuxomat [► 424]	This function block evaluates the measured brightness and presence of the B.E.G. Luxomat DALI control unit. This function block can also be used to initialize the DALI control units.

4.1.3.2.1 FB_DALIV2xBEGLuxomat



The function block FB_DALIV2xBEGLuxomat serves as an example and is not included in the library. The function block can be downloaded as an export file and imported into the desired project. Adjustments can be made as required.

The function block FB_DALIV2xBEGLuxomat evaluates the measured brightness and the occupancy of the B.E.G. Luxomat DALI control device. This function block can also be used to initialize the DALI control device.

The DALI control device occupies a short address and contains two instances. Instance 0 is the motion sensor and complies with the IEC 62386-303 standard. The light sensor is stored in Instance 1 and complies with the IEC 62386-304 standard.

A detected movement is sent as an event while the brightness is read cyclically. Each instance can be disabled individually as required.

Download the TwinCAT 3 PLCOpenXML file: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4528383755.zip

Inputs

```
VAR_INPUT
    bInitialize      : BOOL := FALSE;
    nAddr            : BYTE;
    (* Occupancy Sensor Parameters *)
```



```

bPIREnable      : BOOL := TRUE;
nPIRHold        : BYTE := 1;   (* 10 s *)
nPIRReport      : BYTE := 30;  (* 30 s *)
(* Light Sensor Parameters *)
bLSEnable       : BOOL := TRUE;
tLSCycleTime    : TIME := t#1m;
END_VAR

```

Name	Type	Description
bInitialize	BOOL	The DALI control device is initialized via a positive edge at this input. The parameters are written to the DALI control device, which must be accessible via the short address <i>nAddr</i> . The output <i>bInitializing</i> is TRUE during initialization.
nAddr	BYTE	The address of a device or of a group
bPIREnable	BOOL	Parameter: If this input is TRUE, the motion sensor (instance 0) is enabled. The occupancy sensor is disabled by FALSE.
nPIRHold	BYTE	Parameter: Sets the value for the <i>Hold Timer</i> . If no movement is detected, the status of the motion sensor is only changed after the <i>Hold Timer</i> has expired. The unit is 10 s. This means that times of up to 42 min 20 s (value 254) are possible. The value 0 corresponds to 1 s while the value 255 is ignored.
nPIRReport	BYTE	Sets the value for the <i>Report Timer</i> . The motion sensor status is retransmitted after the <i>Report Timer</i> has expired, even if the status has not changed. The unit is 1 s. A value of 0 deactivates the Report Timer. This means that times of up to 4 min 15 s (value 255) are possible.
bLSEnable	BOOL	Parameter: If this input is TRUE, the light sensor (instance 1) is enabled. The light sensor is disabled by FALSE.
tLSCycleTime	TIME	Cycle time in which the current actual value of the light sensor is read.

Further details on the parameters can be found in the IEC 62386 standard and the manufacturer's documentation.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bInitializing      : BOOL;
  bError             : BOOL;
  nErrorId           : UDINT;
  nInputDeviceError  : BYTE;
  (* Occupancy Sensor *)
  bPIROccupied       : BOOL;
  (* Light Sensor *)
  nActualLightLevel  : UINT;
END_VAR

```

Name	Type	Description
bInitializing	BOOL	This output is TRUE during initialization.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> .

Name	Type	Description
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command (see error codes [► 438]).
nInputDeviceError	BYTE	The status of the DALI control device (INPUT DEVICE ERROR) is queried before the initialization. 0 means no error. The individual error numbers are manufacturer-specific.
bPIROccupied	BOOL	This output indicates the status of the motion sensor.
nActualLightLevel	UINT	This output indicates the status of the light sensor.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

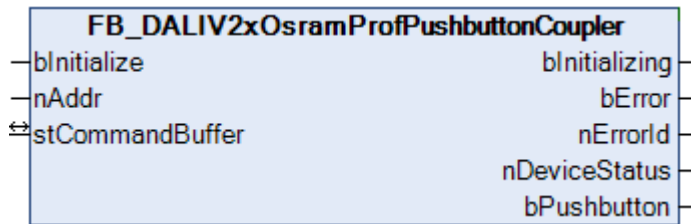
4.1.3.3 Osram

Function blocks

Osram has defined its own special DALI commands. These commands extend beyond the possible DALI commands in accordance with the IEC 62386 standard. However, these commands are only applicable to certain Osram devices. Please contact Osram for a more detailed description of the commands.

Name	Description
FB_DALIV2xOsramProfSensorCoupler [► 428]	This function block evaluates the measured brightness and occupancy of the Osram DALI Professional Sensor Coupler. This function block can also be used to initialize the DALI control devices.
FB_DALIV2xOsramProfPushbuttonCoupler [► 427]	This function block evaluates the status of the digital input of the Osram DALI Professional Pushbutton Coupler. This function block can also be used to initialize the DALI control device.
FB_DALIV2xOsramDisableSignalMode	Disables the <i>Input Signal Mode</i> for a channel.
FB_DALIV2xOsramEnableSignalMode	Enables the <i>Input Signal Mode</i> for a channel.
FB_DALIV2xOsramQueryConfigurationId	Reads the configuration for a channel.
FB_DALIV2xOsramQueryInputDeviceType	Reads the device type.
FB_DALIV2xOsramQueryInputValue	Reads the input value of a channel.
FB_DALIV2xOsramQueryResolution	Queries the resolution of the input values of the control device.
FB_DALIV2xOsramStoreConfigurationId	Writes the configuration for a channel.
FB_DALIV2xOsramIdentifySelectedDevice	Starts the identification routine for the selected control device (random address and search address are the same).
FB_DALIV2xOsramQueryChannelSize	Reads the number of channels supported by the control device.
FB_DALIV2xOsramQueryConfigurationFeature	Reads the possible configuration values for a channel.
FB_DALIV2xOsramQueryDeviceError	Queries whether the control device has detected an error
FB_DALIV2xOsramQueryStatus	Reads the device status.
FB_DALIV2xOsramReadMemoryLocation	A byte is read from the memory of the control device.

4.1.3.3.1 FB_DALIV2xOsramProfPushbuttonCoupler



The function block FB_DALIV2xOsramProfPushbuttonCoupler serves as an example and is not included in the library. The function block can be downloaded as an export file and imported into the desired project. Adjustments can be made as required.

The function block FB_DALIV2xOsramProfPushbuttonCoupler evaluates the state of the digital input of the Osram DALI Professional Pushbutton Coupler. This function block can also be used to initialize the DALI control device.

The DALI control device occupies a short address. The device does not fully comply with the IEC 62386 standard and uses a company-specific protocol instead.

Download the TwinCAT 3 PLCOpenXML file: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4528385931.zip

Inputs

```
VAR_INPUT
    bInitialize      : BOOL := FALSE;
    nAddr            : BYTE;
END_VAR
```

Name	Type	Description
bInitialize	BOOL	The DALI control device is initialized via a positive edge at this input. The parameters are written to the DALI control device, which must be accessible via the short addresses <i>nPIRAddr</i> and <i>nLSAddr</i> . The output <i>bInitializing</i> is TRUE during initialization.
nAddr	BYTE	Short address of the DALI control device

Further details about the parameters can be found in the manufacturer's documentation.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bInitializing    : BOOL;
    bError           : BOOL;
    nErrorId         : UDINT;
    nDeviceStatus    : BYTE;
    bPushbutton      : BOOL;
END_VAR
```

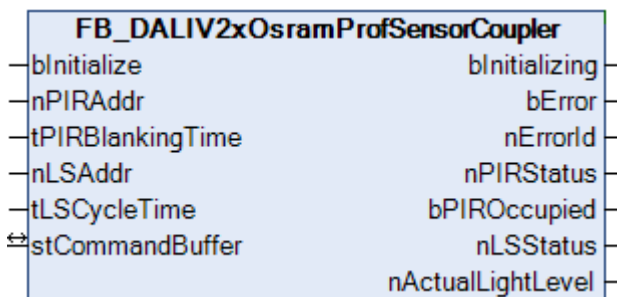
Name	Type	Description
bInitializing	BOOL	This output is TRUE during initialization.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> .
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command (see error codes [► 438]).
nDeviceStatus	BYTE	Before the initialization, the status of the DALI control device is queried and output to this output.
bPushbutton	BOOL	This output indicates the actual value of the digital input.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.3.3.2 FB_DALIV2xOsramProfSensorCoupler



This function block is used as an example and is not included in the library. The function block can be downloaded as an export file and imported into the desired project. Adjustments can be made as required.

The function block FB_DALIV2xOsramProfSensorCoupler evaluates the measured brightness and the occupancy of the Osram DALI Professional Sensor Coupler. This function block can also be used to initialize the DALI control device.

The motion sensor and the light sensor have separate short addresses. The DALI control device thus occupies two short addresses. The device does not fully comply with the IEC 62386 standard and uses a company-specific protocol instead.

A detected movement is sent as an event while the brightness is read cyclically.

Download the TwinCAT 3 PLCOpenXML file: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4528413707.zip

Inputs

```

VAR_INPUT
    bInitialize      : BOOL := FALSE;
    (* Occupancy Sensor Parameters *)
    nPIRAddr         : BYTE;
    tPIRBlankingTime : TIME := T#1M;
    (* Light Sensor Parameters *)
    nLSAddr          : BYTE;
    tLSCycleTime     : TIME := T#1M;
END_VAR

```

Name	Type	Description
bInitialize	BOOL	The DALI control device is initialized via a positive edge at this input. The parameters are written to the DALI control device, which must be accessible via the short addresses <i>nPIRAddr</i> and <i>nLSAddr</i> . The output <i>bInitializing</i> is TRUE during initialization.

Name	Type	Description
nPIRAddr	BYTE	Short address of the DALI control device for the motion sensor
tPIRBlankingTime	TIME	Parameter: Once the status of the motion sensor was sent, no further changes are sent for this time. The unit is 1 s. This means that times of up to 4 min 15 s (value 255) are possible.
nLSAddr	BYTE	Short address of the DALI control device for the light sensor
tLSCycleTime	TIME	Cycle time in which the current actual value of the light sensor is read.

Further details about the parameters can be found in the manufacturer's documentation.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bInitializing : BOOL;
    bError        : BOOL;
    nErrorId      : UDINT;
    (* Occupancy Sensor *)
    nPIRStatus    : BYTE;
    bPIROccupied  : BOOL;
    (* Light Level *)
    nLSStatus     : BYTE;
    nActualLightLevel : WORD;
END_VAR
```

Name	Type	Description
bInitializing	BOOL	This output is TRUE during initialization.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> .
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command (see error codes [► 438]).
nPIRStatus	BYTE	Before the initialization, the status of the DALI control device for the motion sensor is queried and output at this output.
bPIROccupied	BOOL	This output indicates the actual value of the motion sensor.
nLSStatus	BYTE	Before the initialization, the status of the DALI control device for the light sensor is queried and output at this output.
nActualLightLevel	WORD	This output indicates the actual value of the light sensor.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.3.4 Philips discharge lamps

Function blocks

The Philips company has defined its own DALI commands for special discharge lamps. These commands extend beyond the possible DALI commands in accordance with the standard IEC 62386 Part 203. However, these commands are only usable for certain Philips control gears. Please contact Philips for a more detailed description of the commands.

Name	Description
FB_DALIV2PhilipsChangePAEC	Activates or deactivates the "Application Extended Command Set".
FB_DALIV2PhilipsQueryCtrlGearOperationTime	Reads the execution time of the control gear.
FB_DALIV2PhilipsQueryCtrlGearOvertempLevel	Reads the overtemperature threshold value of the control gear.
FB_DALIV2PhilipsQueryCtrlGearOvertempTime	Reads the overtemperature time of the control gear.
FB_DALIV2PhilipsQueryCtrlGearTemperature	Reads the temperature of the control gear.
FB_DALIV2PhilipsQueryFailureStatus	Reads the error state.
FB_DALIV2PhilipsQueryHIDLampLevel	Reads the lamp status.
FB_DALIV2PhilipsQueryHIDMaxFadeDownRate	Reads the maximum fade down rate.
FB_DALIV2PhilipsQueryHIDMaxFadeUpRate	Reads the maximum fade up rate.
FB_DALIV2PhilipsQueryLampType	Reads the lamp type.
FB_DALIV2PhilipsQueryLampVoltage	Reads the lamp voltage.
FB_DALIV2PhilipsQueryMainsVoltage	Reads the mains voltage.
FB_DALIV2PhilipsQueryTimeout	Reads the time-out.
FB_DALIV2PhilipsQueryUICByte	Reads a byte of the UIC.
FB_DALIV2PhilipsSetDTRAsSegmentAddress	Saves the data contained in the Data Transfer Register (DTR) to the Segment Address Register.
FB_DALIV2PhilipsSetTestMode	Sets the control gear to test mode.
FB_DALIV2PhilipsStoreDTRAsLampType	Saves the data in the Data Transfer Register (DTR) as lamp type.
FB_DALIV2PhilipsStoreDTRAsOvertempLevel	Saves the data in the Data Transfer Register (DTR) as overtemperature threshold value.
FB_DALIV2PhilipsStoreDTRAsSegmentAddress	Saves the data in the Data Transfer Register (DTR) as Segment Address Register.
FB_DALIV2PhilipsStoreDTRAsTimeout	Saves the data in the Data Transfer Register (DTR) as Time-out.



These commands belong to the application extended commands for DALI discharge lamps. These only work if they are preceded by the *Enable Device Type 2* command, which can be sent with the function block `FB_DALIV2EnableDeviceType` [► 92]. The command *Enable Device Type 2* is automatically placed internally before all application extended commands for DALI discharge lamps.

4.1.3.4.1 Variables

Name	Default value	Reset value	Scope	Size	Comment
PAEC_ENABLE D	0	No change	0 ... 1	1 byte	
CONTROL GEAR SEGMENT ADDRESS	0	No change	0 ... 255	1 byte	
SEGMENT ADDRESS	0	0	0 ... 255	1 byte	

Name	Default value	Reset value	Scope	Size	Comment
UIC	Manufacturer dependent	No change	00 00 00 00 00 00 00 00 00 ... FF FF FF FF FF FF FF FF	8 bytes	read only
LAMPTYPE	0	No change	0 ... 255	1 byte	
HID LAMP LEVEL	???? ?????	0	0 ... 255	1 byte	
FADE UP	0	No change	0 ... 255	1 byte	
FADE DOWN	0	No change	0 ... 255	1 byte	
FAILURE STATUS	0	0	0 ... 255	1 byte	
OPERATION TIME	0	No change	0 ... 255	1 byte	
OVERTEMPERATURE TIME	0	No change	0 ... 255	1 byte	
CONTROL GEAR TEMPERATURE	0	0	0 ... 255	1 byte	
OVERTEMPERATURE LEVEL	255	No change	0 ... 255	1 byte	
TIMEOUT	0	No change	0 ... 255	1 byte	
MAINS VOLTAGE	0	0	0 ... 255	1 byte	
LAMP VOLTAGE	0	0	0 ... 255	1 byte	

?: undetermined

4.1.3.5 Steinel

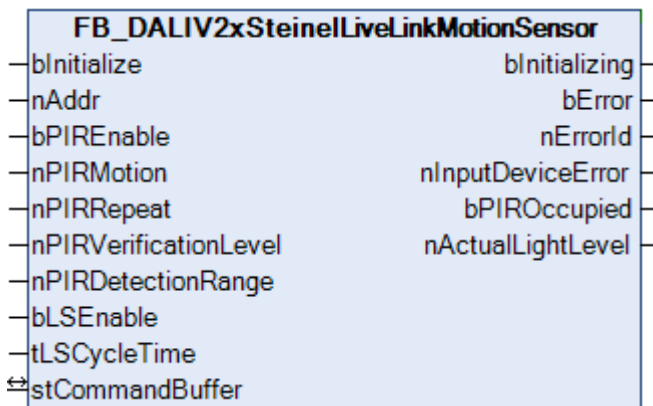
Function blocks

Steinel has defined its own DALI commands. These commands extend beyond the possible DALI commands in accordance with the IEC 62386 standard. However, these commands are only applicable to certain Steinel devices. Please contact Steinel for a more detailed description of the commands.

Name	Description
FB_DALIV2xSteinelLiveLinkMotionSensor [► 432]	This function block evaluates the measured brightness and occupancy of the Steinel LiveLink DALI control device. This function block can also be used to initialize the DALI control device.
FB_DALIV2xSteinelSetBrightnessChangeLevel	Sets the <i>Brightness Change Level</i> value.
FB_DALIV2xSteinelSetBrightnessChangeTimer	Sets the time for the <i>Brightness Change Timer</i> .
FB_DALIV2xSteinelSetEventFilter	This function block sets the event filter for the respective control device instance.
FB_DALIV2xSteinelSetMotionDetectionRange	Sets the size of the detection range.
FB_DALIV2xSteinelSetMotionTimer	Sets the time for the <i>Motion Timer</i>
FB_DALIV2xSteinelSetMotionTimerRepeat	Sets the time for <i>Motion Timer Repeat</i> .
FB_DALIV2xSteinelSetMotionVerificationLevel	Sets the sensitivity for the motion sensor.
FB_DALIV2xSteinelSetSignalLedStatus	Switches the LEDs in the control device.
FB_DALIV2xSteinelQueryBrightnessChangeLevel	Queries the <i>Brightness Change Level</i> .
FB_DALIV2xSteinelQueryBrightnessChangeTimer	Queries the time for the <i>Brightness Change Timer</i> .
FB_DALIV2xSteinelQueryEventFilter	Queries the event filter for the respective control device instance.

Name	Description
FB_DALIV2xSteinelQueryMotionDetectionRange	Queries the size of the detection range.
FB_DALIV2xSteinelQueryMotionTimer	Queries the time of the Motion Timer.
FB_DALIV2xSteinelQueryMotionTimerRepeat	Queries the time of the <i>Motion Timer Repeat</i> .
FB_DALIV2xSteinelQueryMotionVerificationLevel	Queries the sensitivity of the motion sensor.
FB_DALIV2xSteinelQuerySensorType	Queries the sensor type.
FB_DALIV2xSteinelQuerySignalLedStatus	Queries the LEDs in the control device.

4.1.3.5.1 FB_DALIV2xSteinelLiveLinkMotionSensor



This function block FB_DALIV2xSteinelLiveLinkMotionSensor serves as an example and is not included in the library. The function block can be downloaded as an export file and imported into the desired project. Adjustments can be made as required.

The function block FB_DALIV2xSteinelLiveLinkMotionSensor evaluates the measured brightness and the occupancy of the Steinel LiveLink DALI control device. This function block can also be used to initialize the DALI control device.

The DALI control device occupies a short address and contains 2 instances. Instance 1 contains the motion sensor, instance 0 the light sensor. The device does not fully comply with the IEC 62386 standard and uses a company-specific protocol instead.

A detected movement is sent as an event while the brightness is read cyclically. Each instance can be disabled individually as required.

Download the TwinCAT 3 PLCopenXML file: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4528415883.zip

Inputs

```

VAR_INPUT
    bInitialize      : BOOL := FALSE;
    nAddr            : BYTE;
    (* Occupancy Sensor Parameters *)
    bPIREnable       : BOOL := TRUE;
    nPIRMotion       : BYTE := 4;      (* 5 s + (nPIRMotion 5 s) *)
    nPIRRepeat       : BYTE := 6;      (* 5 s + (nPIRRepeat 5 s) *)
    nPIRVerificationLevel : BYTE := 1;  (* standard *)
    nPIRDetectionRange : BYTE := 255;  (* (only for HF sensors) 100 % *)
    (* Light Sensor Parameters *)
    bLSEnable        : BOOL := TRUE;
    tLSCycleTime     : TIME := T#1M;
END_VAR

```

Name	Type	Description
bInitialize	BOOL	The DALI control device is initialized via a positive edge at this input. The parameters are written to the DALI control device, which must be accessible via the short address <i>nAddr</i> . The output <i>bInitializing</i> is TRUE during initialization.

Name	Type	Description
nAddr	BYTE	Short address of the DALI control device
bPIREnable	BOOL	Parameter: If this input is TRUE, the motion sensor (instance 1) is enabled. The occupancy sensor is disabled by FALSE.
nPIRMotion	BYTE	Parameter: Sets the value for the <i>Motion Timer</i> . If no movement is detected, the status of the motion sensor is not changed until the <i>Motion Timer</i> has expired. The time is calculated based on the formula $5\text{ s} + nPIRMotion * 5\text{ s}$. This means that times from 5 s to 21 min 20 s are possible.
nPIRRepeat	BYTE	Parameter: Sets the value for the <i>Repeat Timer</i> . The motion sensor status is retransmitted after the <i>Repeat Timer</i> has expired, even if the status has not changed. The time is calculated based on the formula $5\text{ s} + nPIRRepeat * 5\text{ s}$. This means that times from 5 s to 21 min 20 s are possible.
nPIRVerificationLevel	BYTE	Parameter: The detection sensitivity can be adjusted (0: motion detection disabled, 1: very sensitive to 15: very insensitive).
nPIRDetectionRange	BYTE	Parameter: If an HF sensor is used, the size of the detection range can be set (0: 0 % to 255: 100 %).
bLSEnable	BOOL	Parameter: If this input is TRUE, the light sensor (instance 0) is enabled. The light sensor is disabled by FALSE.
tLSCycleTime	TIME	Cycle time in which the current actual value of the light sensor is read.

Further details on the parameters can be found in the IEC 62386 standard and the manufacturer's documentation.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer    : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
    bInitializing      : BOOL;
    bError             : BOOL;
    nErrorId           : UDINT;
    nInputDeviceError  : BYTE;
    (* Occupancy Sensor *)
    bPIROccupied       : BOOL;
    (* Light Sensor *)
    nActualLightLevel  : UINT;
END_VAR
```

Name	Type	Description
bInitializing	BOOL	This output is TRUE during initialization.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> .
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command (see <u>error codes</u> [► 438]).

Name	Type	Description
nInputDeviceError	BYTE	The status of the DALI control device (INPUT DEVICE ERROR) is queried before the initialization. 0 means no error. The individual error numbers are manufacturer-specific.
bPIROccupied	BOOL	This output indicates the status of the motion sensor.
nActualLightLevel	UINT	This output indicates the actual value of the light sensor.

Requirements

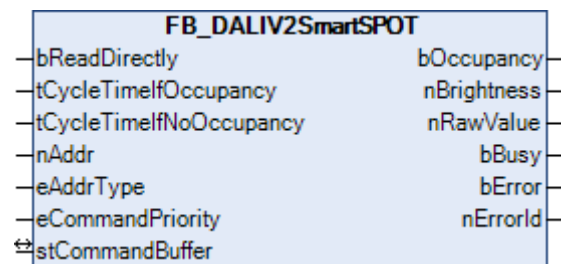
Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.3.6 Tridonic

Function blocks

Name	Description
FB_DALIV2SmartSPOT ▶ 434	This function block cyclically reads the status of a smartSPOT sensor or MSensor 02 and scales the measured brightness and detected presence based on the received value.

4.1.3.6.1 FB_DALIV2SmartSPOT



The function block FB_DALIV2SmartSPOT cyclically reads the status of a smartSPOT sensor or MSensor 02 and scales the measured brightness and the detected occupancy from the received value.

Two different cycle times can be specified. One cycle time that is used if no occupancy is detected and one that is used in case of occupancy. In this way access to the DALI bus can be minimized. If occupancy is detected a slower cycle time (e.g. 20 s) can usually be selected, because light control and switching off the lighting is not time-critical. If there is no occupancy, then a shorter cycle time (e.g. 2 s) should be selected. As a result, the lighting is switched on with the shortest possible reaction time when the room is entered.

The measured brightness of the sensor depends on the reflection of the furniture in the room. The measured value is only 20 % to 40 % of the actual brightness of the respective surface. Example: 500 lux on the table with a reflectivity of 30 % results in a brightness value of 150 lux. The measuring range of the sensor is designed so that the usual brightness at the workplace can be controlled from 200 lux to 1000 lux.

If the function block with MSensor 02 is to be used, it must be in slave mode.

Further information and a description of the electrical and physical properties can be found in the product description of the smartSPOT sensor or the MSensor 02.

Inputs

```

VAR_INPUT
    bReadDirectly      : BOOL := FALSE;
    tCycleTimeIfOccupancy : TIME := t#20s;
    tCycleTimeIfNoOccupancy : TIME := t#2s;
    nAddr              : BYTE := 0;

```

```

eAddrType      : E_DALIV2AddrType := eDALIV2AddrTypeShort;
eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bReadDirectly	BOOL	The function block is enabled by a positive edge at this input.
tCycleTimeIfOccupancy	TIME	Cycle time if occupancy
tCycleTimeIfNoOccupancy	TIME	Cycle time if no occupancy
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bOccupancy : BOOL;
  nBrightness : INT;
  nRawValue : BYTE;
  bBusy : BOOL;
  bError : BOOL;
  nErrorId : UDINT;
END_VAR

```

Name	Type	Description
bOccupancy	BOOL	The output is set if the sensor detects occupancy.
nBrightness	INT	Measured brightness in lux
nRawValue	BYTE	The value of the sensor read before the conversion
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

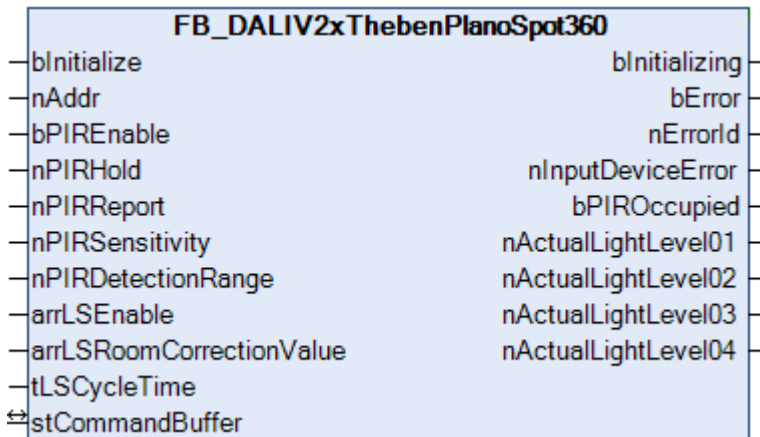
4.1.3.7 Theben HTS

Function blocks

The company Theben has defined its own DALI commands. These commands extend beyond the possible DALI commands in accordance with the IEC 62386 standard. However, these commands can only be used for certain Theben devices. Please contact Theben for a more detailed description of the commands.

Name	Description
FB_DALIV2xThebenPlanoSpot360  436]	This function block evaluates the 3 measured brightness values and the presence of the ThebenHTS PlanoSpot DALI control unit. This function block can also be used to initialize the DALI control units.

4.1.3.7.1 FB_DALIV2xThebenPlanoSpot360



The function block FB_DALIV2xThebenPlanoSpot360 serves as an example and is not included in the library. The function block can be downloaded as an export file and imported into the desired project. Adjustments can be made as required.

The function block FB_DALIV2xThebenPlanoSpot360 evaluates the measured brightness and the occupancy of the ThebenHTS PlanoSpot DALI control device. This function block can also be used to initialize the DALI control device.

The DALI control device occupies a short address and contains 5 instances. Instance 0 is the motion sensor and complies with the IEC 62386-303 standard. The light sensors are stored in instances 1 to 4 and comply with the IEC 62386-304 standard.

A detected movement is sent as an event, while the brightness values are read cyclically. Each instance can be disabled individually as required.

Download the TwinCAT 3 PLCOpenXML file: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4528418059.zip

Inputs

```
VAR_INPUT
  bInitialize          : BOOL := FALSE;
  nAddr                : BYTE;
  (* Occupancy Sensor Parameters *)
  bPIREnable           : BOOL := TRUE;
  nPIRHold             : BYTE := 1;    (* 10 s *)
  nPIRReport           : BYTE := 30;   (* 30 s *)
  nPIRSensitivity       : BYTE := 3;    (* standard *)
  nPIRDetectionRange   : BYTE := 0;    (* standard *)
  (* Light Sensor Parameters *)
  arrLSEnable          : ARRAY [1..4] OF BYTE := TRUE, TRUE, TRUE, TRUE;
```

```

arrLSRoomCorrectionValue : ARRAY [1..4] OF BYTE := 30, 30, 30, 30; (* 0.3 *)
tLSCycleTime             : TIME := T#1M;
END_VAR

```

Name	Type	Description
bInitialize	BOOL	The DALI control device is initialized via a positive edge at this input. The parameters are written to the DALI control device, which must be accessible via the short address <i>nAddr</i> . The output <i>bInitializing</i> is TRUE during initialization.
nAddr	BYTE	Short address of the DALI control device
bPIREnable	BOOL	Parameter: If this input is TRUE, the motion sensor (instance 0) is enabled. The occupancy sensor is disabled by FALSE.
nPIRHold	BYTE	Parameter: Sets the value for the <i>Hold Timer</i> . If no movement is detected, the status of the motion sensor is only changed after the <i>Hold Timer</i> has expired. The unit is 10 s. This means that times of up to 42 min 20 s (value 254) are possible. The value 0 corresponds to 1 s while the value 255 is ignored.
nPIRReport	BYTE	Parameter: Sets the value for <i>Report Timer</i> . The motion sensor status is retransmitted after the <i>Report Timer</i> has expired, even if the status has not changed. The unit is 1 s. A value of 0 deactivates the <i>Report Timer</i> . This means that times of up to 4 min 15 s (value 255) are possible.
nPIRSensitivity	BYTE	Parameters: The detection sensitivity can be adjusted in five levels (1: very insensitive to 5: very sensitive).
nPIRDetectionRange	BYTE	Parameters: The sensor supports two different sizes for the detection range (0: Standard and 1: Reduced).
arrLSEnable	ARRAY	Parameter: If this input is TRUE, the light sensor (instance 1 to 4) is enabled. The light sensor is disabled by FALSE.
arrLSRoomCorrectionValue	ARRAY	Parameter: The room correction factor can be used to compare the measured value of the light sensor with a reference device (luxmeter).
tLSCycleTime	TIME	Cycle time in which the current actual value of the light sensor is read.

Further details on the parameters can be found in the IEC 62386 standard and the manufacturer's documentation.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bInitializing : BOOL;
  bError        : BOOL;
  nErrorId      : UDINT;
  nInputDeviceError : BYTE;
  (* Occupancy Sensor *)
  bPIROccupied : BOOL;
  (* Light Sensor *)
  nActualLightLevel01 : UINT; (* Light sensor 1 (integral) *)
  nActualLightLevel02 : UINT; (* Light sensor 2 (inner) *)

```

```

nActualLightLevel03 : UINT;  (* Light sensor 3 (middle) *)
nActualLightLevel04 : UINT;  (* Light sensor 4 (window) *)
END_VAR

```

Name	Type	Description
bInitializing	BOOL	This output is TRUE during initialization.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nInputDeviceError	BYTE	The status of the DALI control device (INPUT DEVICE ERROR) is queried before the initialization. 0 means no error. The individual error numbers are manufacturer-specific.
bPIROccupied	UINT	This output indicates the status of the motion sensor.
nActualLightLevel01 ... nActualLightLevel04	UINT	This output indicates the actual value of the light sensors.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.1.4 Error codes

Value (hex)	Value (dec)	Description
0x0000	0	No error.
0x0001	1	No response from the DALI terminal.
0x0002	2	No response from the DALI control gear.
0x0003	3	Communication buffer overflow.
0x0004	4	No response from the communication block.
0x0005	5	DALI collision detected on the backward channel: during the transfer of a DALI telegram, a collision with the send data of another DALI slave was detected.
0x0006	6	DALI collision detected on the forward channel: during the transfer of a DALI telegram, a collision with the send data of another DALI master was detected. The error also occurs if the 24 V supply is missing at the power contacts of the KL6811.
0x0007	7	When using the internal DALI power supply of the KL6811: Overload of the internal DALI power supply of the KL6811 (bus undervoltage).
0x0008	8	Parameter <i>eCommandPriority</i> lies outside of the valid range.
0x0009	9	Parameter <i>eAddressType</i> lies outside of the valid range.
0x000A	10	Parameter <i>nAddr</i> is a short address and lies outside of the valid range.
0x000B	11	Parameter <i>nAddr</i> is a group address and lies outside of the valid range.
0x000C	12	Parameter <i>nGroup</i> lies outside of the valid range.
0x000D	13	Parameter <i>nScene</i> lies outside of the valid range.
0x000E	14	Parameter <i>nStartWithShortAddress</i> lies outside of the valid range.
0x000F	15	No further free short addresses.
0x0010	16	Parameter <i>nNewShortAddress</i> lies outside of the valid range.
0x0011	17	Parameter <i>nShortAddress01</i> lies outside of the valid range.
0x0012	18	Parameter <i>nShortAddress02</i> lies outside of the valid range.

Value (hex)	Value (dec)	Description
0x0013	19	Parameter <i>nFreeShortAddress</i> lies outside of the valid range.
0x0014	20	The short address in parameter <i>nFreeShortAddress</i> is occupied within the DALI line.
0x0015	21	Parameter <i>arrSwapShortAddressList</i> contains invalid values.
0x0016	22	Parameter <i>nHysteresis</i> lies outside of the valid range.
0x0017	23	Parameter <i>nProlongValue</i> lies outside of the valid range.
0x0018	24	Lamp value of the master device is too long 255 -> possible fault.
0x0019	25	Parameter <i>nEndLevel</i> lies outside of the valid range.
0x001A	26	Target value <i>nEndLevel</i> has not yet been reached after double the ramp time.
0x001B	27	<i>FB_DALIV2LightControl</i> : There are setpoints (<i>nSetpoint</i>) in the value table <i>arrControlTable</i> that lie outside of the valid DALI range (0..254).
0x001C	28	<i>FB_DALIV2LightControl</i> : The switch range (<i>nSwitchRange</i>) in the first or second element of the value table <i>arrControlTable</i> is 0, assuming that the table has no or only one value set.
0x001D	29	<i>FB_DALIV2LightControl</i> : 2 neighboring input values <i>nActualValue</i> in the value table <i>arrControlTable</i> lie too close together i.e. each in the switching range of the other.
0x001E	30	<i>FB_DALIV2LightControl</i> : A setpoint (<i>nSetpoint</i>) of the value table <i>arrControlTable</i> lies outside the valid range. Only queried after <i>bStart</i> .
0x001F	31	Internal status query of the master device returns "fading active" for too long after the dimming time. See STATUS INFORMATION [► 88] (Bit4).
0x0020	32	Parameter <i>nPresenceValue</i> lies outside of the valid range.
0x0021	33	Timeout during internal addressing (see also <i>FB_DALIV2AddressingIntRandomAddressing</i> [► 11]). The terminal has not sent a response following the start of internal addressing.
0x0022	34	The terminal has returned an error during internal addressing (see also <i>FB_DALIV2AddressingIntRandomAddressing</i> [► 11]).
0x0023	35	At least one test is currently running or is automatically pending.
0x0024	36	The device is in automatic test mode.
0x0025	37	The batteries of the emergency light device are not fully charged for a duration test.
0x0026	38	Test aborted - no valid emergency mode / emergency status.
0x0027	39	Test aborted: test mode was not reached.
0x0028	40	Test aborted due to timeout.
0x0029	41	Error while processing a DALI command.
0x002A	42	Error while writing into the log file.
0x002B	43	Device is not in "normal mode"
0x002C	44	<i>FB_DALIV2Sequencer</i> : The start index <i>nStartIndex</i> is outside the valid range [1..50].
0x002D	45	<i>FB_DALIV2Sequencer</i> : The start index <i>nStartIndex</i> refers to a position which in turn marks the end of a sequence (zero entries).
0x002E	46	<i>FB_DALIV2ChangeAddressList</i> : The change list <i>arrChangeAddressList</i> is empty.
0x002F	47	<i>FB_DALIV2ChangeAddressList</i> : The change list <i>arrChangeAddressList</i> contains an invalid short address entry (>63).
0x0030	48	<i>FB_DALIV2ChangeAddressList</i> : The change list <i>arrChangeAddressList</i> contains a duplicate list entry for the short addresses.
0x0031	49	<i>FB_DALIV2ChangeAddressList</i> : The change list <i>arrChangeAddressList</i> contains an entry for a new short address that is already assigned to a device that is not affected by the changes. The addresses have been changed back.
0x0032	50	<i>FB_KL6811Config</i> : An error occurred during the configuration of the terminal.

Value (hex)	Value (dec)	Description
0x0033	51	FB_KL6811Config: Parameter <i>eOperationMode</i> lies outside of the valid range.
0x0034	52	The constant DALI_MESSAGE_QUEUE_ENTRIES lies outside of the valid range (2-250).
0x0035	53	The constant DALI_RESPONSE_TABLE_ENTRIES lies outside of the valid range (2-250).
0x0036	54	The constant DALI_EVENT_TABLE_ENTRIES lies outside of the valid range (2-250).
0x0037	55	When using the internal DALI power supply: Power supply fault detected.
0x0038	56	The process image was disabled by the DI1 or DI2 inputs of the terminal.
0x0039	57	Parameter <i>eInstAddrType</i> lies outside of the valid range.
0x003A	58	Parameter <i>eDataFrameType</i> lies outside of the valid range.
0x003B	59	DSI is not supported by the bus terminal.
0x003C	60	Parameter <i>nEventPriority</i> lies outside of the valid range.
0x003D	61	Parameter <i>nGroup</i> lies outside of the valid range.
0x003E	62	Parameter <i>nInstanceGroup</i> lies outside of the valid range.
0x003F	63	Parameter <i>eEventScheme</i> lies outside of the valid range.
0x0040	64	Parameter <i>eEventFilter</i> lies outside of the valid range.
0x0041	65	Parameter <i>nInstAddr</i> lies outside of the valid range.
0x0042	66	Parameter <i>ePowerSupplyMode</i> lies outside of the valid range.
0x0043	67	Parameter <i>eCommandKBusWatchdog</i> lies outside of the valid range.
0x0044	68	Parameter <i>eCommandDI1RisingEdge</i> lies outside of the valid range.
0x0045	69	Parameter <i>eCommandDI1FallingEdge</i> lies outside of the valid range.
0x0046	70	Parameter <i>eCommandDI2RisingEdge</i> lies outside of the valid range.
0x0047	71	Parameter <i>eCommandDI2FallingEdge</i> lies outside of the valid range.
0x0048	72	During internal addressing (see also FB_DALIV2AddressingIntRandomAddressing [► 11]) the terminal has detected that there is no free short address.
0x0049	73	During internal addressing (see also FB_DALIV2AddressingIntRandomAddressing [► 11]), the terminal has recognized that several devices have the same long address.
0x004A	74	Internal addressing (see also FB_DALIV2AddressingIntRandomAddressing [► 11]) has failed 3 times.
0x004B	75	The communication buffer for sending the DALI commands was blocked for longer than permitted.
0x004C	76	The constant DALIV2_TIMEOUT_LOCK_MESSAGE_QUEUE lies outside of the valid range (0-2 min).
0x004D	77	During internal addressing (see also FB_DALIV2AddressingIntRandomAddressing [► 11]), the terminal has detected a short circuit on the bus.
0x004E	78	Short circuit detected on the DALI bus. Possible causes: - The 24 V supply to the KL6821 is missing. - There is a short circuit on the DALI bus.
0x004F	79	Undervoltage on the DALI bus. Possible causes: - Collision during telegram transmission (several DALI devices may have the same short address). - The internal power supply has been disabled and there is no external bus power supply.
0x0050	80	The received data is flawed.

4.1.5 [obsolete]

Function blocks

Name	Description
FB_DALIV2Communication [► 441]	Reads the DALI commands from the buffers sequentially and forwards them to the KL6811.
FB_DALIV2EnableWriteMemory [► 443]	Enables write access via FB_DALIV2WriteMemoryLocation [► 181] to the internal memory of the control gear.
FB_DALIV2QueryBallast [► 444]	Query whether the control gear is ready to operate.
FB_DALIV2QueryContentDTR [► 445]	Reads the DTR (Data Transfer Register).
FB_DALIV2SendDALICommand [► 447]	This function block is for the general sending of a DALI command, defined by command number and, if necessary, transfer parameter.
FB_DALIV2SetDTR [► 448]	Writes an 8-bit value into the DTR of all the control gears.
FB_DALIV2StoreActualLevelInDTR [► 449]	Writes the current value of the lamp power into the DTR.
FB_DALIV2StoreDTRAsFadeRate [► 451]	Writes the value of the DTR into the variable <u>FADE RATE</u> [► 88].
FB_DALIV2StoreDTRAsFadeTime [► 452]	Writes the value of the DTR into the variable <u>FADE TIME</u> [► 88].
FB_DALIV2StoreDTRAsMaxLevel [► 453]	Writes the value of the DTR into the variable <u>MAX LEVEL</u> [► 88].
FB_DALIV2StoreDTRAsMinLevel [► 454]	Writes the value of the DTR into the variable <u>MIN LEVEL</u> [► 88].
FB_DALIV2StoreDTRAsPowerOnLevel [► 455]	Writes the value of the DTR into the variable <u>POWER ON LEVEL</u> [► 88].
FB_DALIV2StoreDTRAsScene [► 456]	Saves the contents of the DTR as the lamp power value for a scene.
FB_DALIV2StoreDTRAsShortAddress [► 458]	Saves the contents of the DTR as a short address, or deletes the short address.
FB_DALIV2StoreDTRAsSystemFailureLevel [► 459]	Writes the value of the DTR into the variable <u>SYSTEM FAILURE LEVEL</u> [► 88].
FB_KL6811Config [► 460]	This function block can be used to configure the KL6821.

4.1.5.1 FB_DALIV2Communication



The function blocks for the DALI commands do not directly access the process image of the KL6811, but store the individual DALI commands in three different buffers. The function block FB_DALIV2Communication sequentially reads the DALI commands from these three buffers and passes the DALI commands to the KL6811. This prevents several function blocks accessing the process image of the KL6811 at the same time. Each of these three buffers is processed with a different priority (high, medium or low). You can use the eCommandPriority [► 462] parameter, which is available for most function blocks, to influence the priority with which the respective DALI command is to be processed by the function block FB_DALIV2Communication.

All buffers in which the DALI commands are stored are associated with a variable of type ST_DALIV2CommandBuffer. There is one instance of the function block FB_DALIV2Communication and a variable of type ST_DALIV2CommandBuffer for each KL6811. If possible, the function block FB_DALIV2Communication should be called in a separate, faster task.

The extent to which the buffers are utilized can be determined from the outputs of the function block. Three arrays are output for this in which each element (0, 1 or 2) represents one of the three buffers (high, middle or low). If you detect regular overflow for one of the three buffers, you should consider the following:

- How heavily are the individual PLC tasks utilized? The TwinCAT System Manager offers various appropriate utilities for the analysis.
- Try reducing the cycle time of the task in which the function block FB_DALIV2Communication is called. The value should not exceed 6 ms. Ideally it should be 2 ms.
- Check the cycle time of the PLC task in which the function blocks for the individual DALI commands are called. This value should be between 10 ms and 60 ms.
- If possible avoid polling (regular reading) of values. Only read values when they are actually required.
- Distribute the individual control gears evenly over several DALI lines. Overall data throughput is increased by the fact that several DALI lines are processed simultaneously during each PLC cycle.

Inputs

```
VAR_INPUT
  bResetMaximumDemandCounter : BOOL;
  bResetOverflowCounter       : BOOL;
END_VAR
```

Name	Type	Description
bResetMaximumDemandCounter	BOOL	A positive edge resets the stored value of the maximum command buffer utilization, <i>arrBufferMaximumDemandMeter</i> (0 - 100 %, see outputs).
bResetOverflowCounter	BOOL	A positive edge resets the stored value of the number of command buffer overflows, <i>arrBufferOverflowCounter</i> (see outputs).

Inputs/outputs

```
VAR_IN_OUT
  stDALIInData      : ST_DALIV2InData;
  stDALIOutData     : ST_DALIV2OutData;
  stCommandBuffer   : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stDALIInData	ST_DALIV2InData [▶ 468]	Structure in the input process image of the KL6811. It is used for communication from the KL6811 to the PLC.
stDALIOutData	ST_DALIV2OutData [▶ 468]	Structure in the output process image of the KL6811. It is used for communication from the PLC to the KL6811.
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the structure for communication (buffer) with the function block FB_DALIV2Communication.

Outputs

```
VAR_OUTPUT
  arrBufferDemandMeter      : ARRAY [0..2] OF BYTE;
  arrBufferMaximumDemandMeter : ARRAY [0..2] OF BYTE;
  arrBufferOverflowCounter  : ARRAY [0..2] OF UINT;
  bLineIsBusy               : BOOL;
  bLineIsInitialized        : BOOL;
END_VAR
```

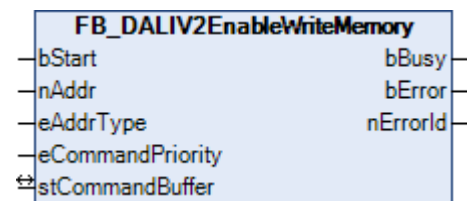
Name	Type	Description
arrBufferDemandMeter	ARRAY	Demand of the respective buffer (0 - 100 %)
arrBufferMaximumDemandMeter	ARRAY	Previous maximum demand of the respective buffer (0 - 100 %)
arrBufferOverflowCounter	ARRAY	Number of buffer overflows so far

Name	Type	Description
bLineIsBusy	BOOL	This output is set as long as the function block FB_DALIV2Communication is active.
bLineIsInitialized	BOOL	If the function block is called for the first time (e.g. when starting the controller), initialization is carried out. No DALI commands can be processed during this time.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.2 FB_DALIV2EnableWriteMemory



Enables write access via [FB_DALIV2WriteMemoryLocation](#) [[► 181](#)] to the internal memory of the control gear.



This command can only be executed by DALI devices that comply with the IEC 62386 standard.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

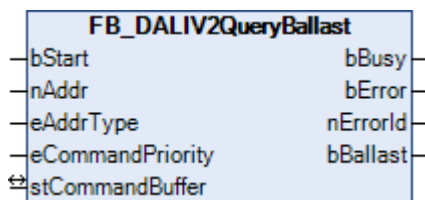
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.3 FB_DALIV2QueryBallast



The function block FB_DALIV2QueryBallast provides information on whether a specific control gear is ready to operate.

Using this command, it can easily be determined whether or not any control gears at all are connected to a DALI line. To do this, the function block with the parameter *eAddrType* = *eDALIV2AddrTypeBroadcast* is called. If the output *bBallast* is FALSE and output *nError* is 0, there is no control gear connected to the DALI line. If the output *nError* is 0 and the output *bBallast* is TRUE, there is exactly one control gear connected to the DALI line. If several control gears are connected, *nError* will return 5 (several control gears have responded). In this case it is irrelevant whether or not the control gears have short addresses.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

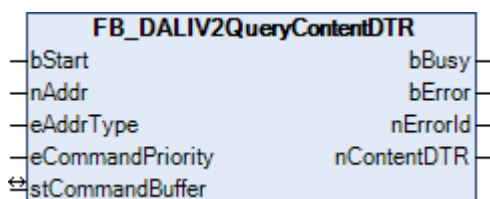
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    bBallast   : BOOL;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
bBallast	BOOL	If the output is active, the corresponding control gear is ready to operate.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.4 FB_DALIV2QueryContentDTR



The content of the DTR (**D**ata **T**ransfer **R**egister) is read from the control gear.

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
  nContentDTR : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nContentDTR	BYTE	Contents of the DTR (Data Transfer Register)

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.5 FB_DALIV2SendDALICommand



The function block FB_DALIV2SendDALICommand is used for the general sending of a DALI command, defined by command number and, if necessary, transfer parameters. Moreover, it is possible to set whether the command is sent twice in succession and whether to wait for a response. The latter can be used, for example, to realize a fast sequence of step-up commands.

Inputs

```

VAR_INPUT
    bStart          : BOOL;
    nAddr           : BYTE;
    eAddrType       : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
    nCommand        : INT := 0;
    nParameter      : BYTE := 0;
    bWaitingForDALISlaveResponse : BOOL := FALSE;
    bRepeatCommand  : BOOL := FALSE;
    bSuppressResponseBuffer : BOOL := FALSE;
    nDeviceType     : BYTE := 0;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nCommand	INT	Number of the DALI command to be sent
nParameter	BYTE	Parameter for the value transfer
bWaitingForDALISlaveResponse	BOOL	If FALSE there is no waiting for the response of the DALI control gear. Its application makes no sense in connection with any kind of query command.
bRepeatCommand	BOOL	Decides whether the command is to be sent twice in succession.
bSuppressResponseBuffer	BOOL	If TRUE, the internal software buffer is not filled with the response from function block FB_DALIV2Communication [► 441] .
nDeviceType	BYTE	Identifier for the device type

Value	Description
0	Standard device
1	Device for emergency lighting.
2	Device for discharge lamps.

Value	Description
3	Device for low-voltage halogen lamps.
4	Device for dimming incandescent lamps.
5	Device for converting digital signals into DC signals.
6	Device for light emitting diodes (LEDs).

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

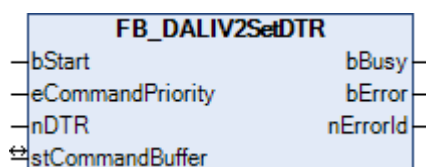
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
    nResponseData : BYTE;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).
nResponseData	BYTE	The value received from the DALI control gear, if a query command has been called.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.6 FB_DALIV2SetDTR



This command is only available as a broadcast. Data is written to the DTR of all the control gears.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nDTR        : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nDTR	BYTE	The value that is to be written into the DTR.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

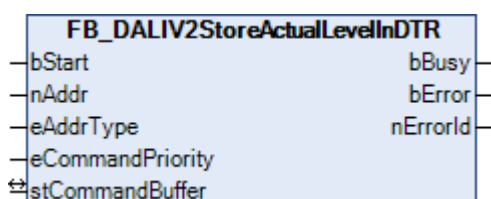
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.7 FB_DALIV2StoreActualLevelInDTR



The function block FB_DALIV2StoreActualLevelInDTR writes the current lamp power value to the DTR. This does not change the current value of the lamp power.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

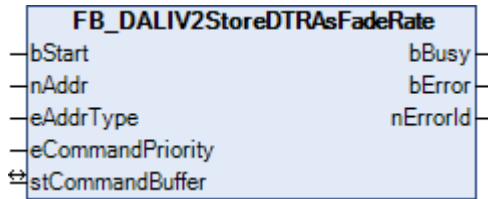
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.8 FB_DALIV2StoreDTRAsFadeRate



The function block FB_DALIV2StoreDTRAsFadeRate writes the value of the DTR to the variable FADE RATE [► 88]. The range of possible values extends from 1 to 15.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

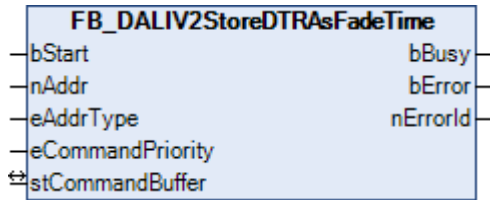
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see <u>error codes</u> [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.9 FB_DALIV2StoreDTRAsFadeTime



The function block FB_DALIV2StoreDTRAsFadeTime writes the value of the DTR to the variable FADE TIME [► 88]. The range of possible values extends from 0 to 15.

Inputs

```

VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR

```

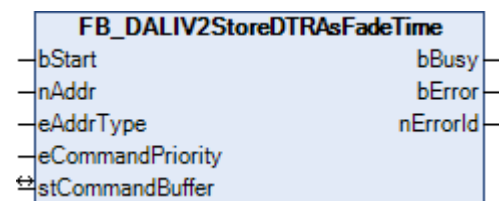
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.10 FB_DALIV2StoreDTRAsMaxLevel



The function block FB_DALIV2StoreDTRAsMaxLevel writes the value of the DTR to the variable MAX LEVEL [► 88]. If the value provided is smaller than MIN LEVEL then the value is simply set to MIN LEVEL.

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

🔌 Outputs

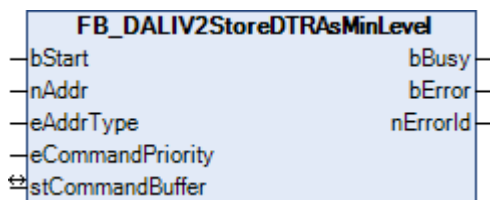
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.11 FB_DALIV2StoreDTRAsMinLevel



The function block FB_DALIV2StoreDTRAsMinLevel writes the value of the DTR to the variable MIN LEVEL [► 88] (minimum permitted lamp power). If the value provided is larger than MAX LEVEL [► 88] then the value is simply set to MAX LEVEL. If the value provided is smaller than the PHYSICAL MIN LEVEL [► 88] then MIN LEVEL will be set to PHYSICAL MIN LEVEL.

🔌 Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	<u>E_DALIV2AddrType</u> [► 461]	Short address, group address or broadcast
eCommandPriority	<u>E_DALIV2CommandPriority</u> [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

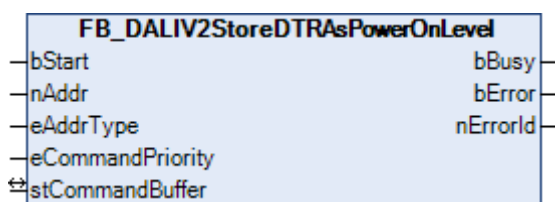
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.12 FB_DALIV2StoreDTRAsPowerOnLevel



The function block FB_DALIV2StoreDTRAsPowerOnLevel writes the value of the DTR to the variable **POWER ON LEVEL** [► 88].

Inputs

```
VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group

Name	Type	Description
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

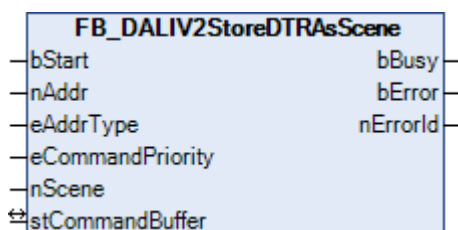
```
VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.13 FB_DALIV2StoreDTRAsScene



The content of the DTR is saved as the value of the lamp power for the given scene. The value range for the scene number extends from 0 to 15.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
  nScene      : BYTE;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.
nScene	BYTE	The scene for which the value of the lamp power should be changed.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

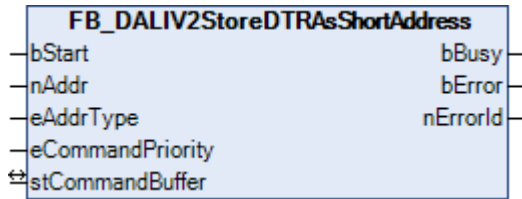
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.14 FB_DALIV2StoreDTRAsShortAddress



The content of the DTR (Data Transfer Register) is saved as the short address at the corresponding control gear. The structure of the DTR is 0AAA AAA1 (A: significant address bit) or 1111 1111 (mask). If the DTR contains 1111 1111 the short address is deleted from the control gear.

Inputs

```
VAR_INPUT
  bStart      : BOOL;
  nAddr       : BYTE;
  eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
  eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR
```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```
VAR_IN_OUT
  stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR
```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

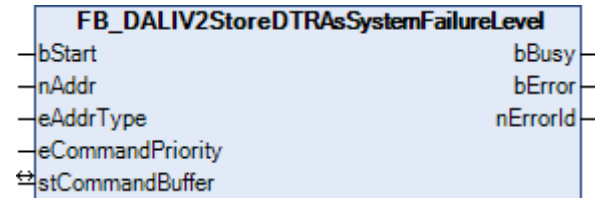
```
VAR_OUTPUT
  bBusy      : BOOL;
  bError     : BOOL;
  nErrorId   : UDINT;
END_VAR
```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.15 FB_DALIV2StoreDTRAsSystemFailureLevel



The function block FB_DALIV2StoreDTRAsSystemFailureLevel writes the value of the DTR to the variable SYSTEM FAILURE LEVEL [► 88].

Inputs

```

VAR_INPUT
    bStart      : BOOL;
    nAddr       : BYTE;
    eAddrType   : E_DALIV2AddrType := eDALIV2AddrTypeShort;
    eCommandPriority : E_DALIV2CommandPriority := eDALIV2CommandPriorityMiddle;
END_VAR

```

Name	Type	Description
bStart	BOOL	The function block is activated by a positive edge at this input.
nAddr	BYTE	The address of a device or of a group
eAddrType	E_DALIV2AddrType [► 461]	Short address, group address or broadcast
eCommandPriority	E_DALIV2CommandPriority [► 462]	Priority (high, medium or low) with which the command is processed by the library.

Inputs/outputs

```

VAR_IN_OUT
    stCommandBuffer : ST_DALIV2CommandBuffer;
END_VAR

```

Name	Type	Description
stCommandBuffer	ST_DALIV2CommandBuffer	Reference to the internal structure for communication with FB_KL6811Communication [► 77] (KL6811) or FB_KL6821Communication [► 82] (KL6821).

Outputs

```

VAR_OUTPUT
    bBusy      : BOOL;
    bError     : BOOL;
    nErrorId   : UDINT;
END_VAR

```

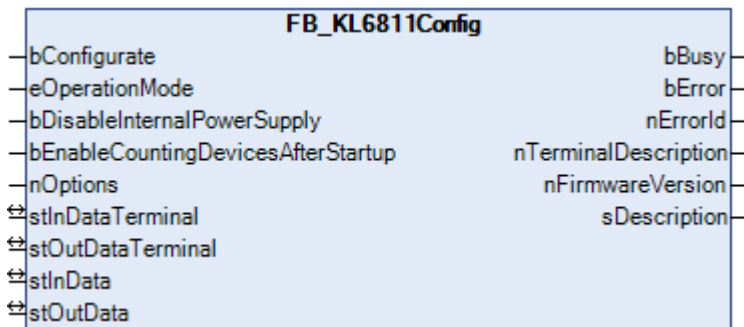
Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.

Name	Type	Description
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [► 438]).

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.1.5.16 FB_KL6811Config



The function block FB_KL6811Config is used to configure the KL6811. The configuration is executed when the PLC program starts, or it can be triggered by a positive edge at the input *bConfigure*. The parameters are stored in the respective registers of the KL6811 in a fail-safe manner. In addition, some general information, such as the firmware version, is read from the KL6811.

Inputs

```

VAR_INPUT
    bConfigure          : BOOL := FALSE;
    eOperationMode      : E_DALIV2OperationMode := eDALIV2OperationModeDALI;
    bDisableInternalPowerSupply : BOOL := FALSE;
    bEnableCountingDevicesAfterStartup : BOOL := FALSE;
    nOptions            : DWORD := 0;
END_VAR

```

Name	Type	Description
bConfigure	BOOL	Configuration of the bus terminal is started by a positive edge at this input.
eOperationMode	E_DALIV2OperationMode [► 464]	Defines the operation mode of the terminal (DALI or DSI). Corresponds to register 32, bits 12 to 15 of the bus terminal.
bDisableInternalPowerSupply	BOOL	If this input is TRUE, the internal DALI power supply of the terminal is disabled by the configuration. Corresponds to register 32, bit 3 of the bus terminal.
bEnableCountingDevicesAfterStartup	BOOL	If this input is TRUE, the number of DALI devices is counted when the terminal starts. Corresponds to register 32, bit 4 of the bus terminal.
nOptions	DWORD	Reserved for future developments.

Inputs/outputs

```

VAR_IN_OUT
    stInDataTerminal : ST_DALIV2InData;
    stOutDataTerminal : ST_DALIV2OutData;

```

```

stInData      : ST_DALIV2InData;
stOutData     : ST_DALIV2OutData;
END_VAR

```

Name	Type	Description
stInDataTerminal	ST_DALIV2InData [▶ 468]	Reference to the structure for communication with the KL6811
stOutDataTerminal	ST_DALIV2OutData [▶ 468]	Reference to the structure for communication with the KL6811
stInData	ST_DALIV2InData [▶ 468]	Reference to the structure for communication with the function block FB_DALIV2Communication [▶ 441]
stOutData	ST_DALIV2OutData [▶ 468]	Reference to the structure for communication with the function block FB_DALIV2Communication [▶ 441]

Outputs

```

VAR_OUTPUT
bBusy      : BOOL;
bError     : BOOL;
nErrorId   : UDINT;
nTerminalDescription : WORD;
nFirmwareVersion : WORD;
sDescription : STRING;
END_VAR

```

Name	Type	Description
bBusy	BOOL	When the function block is activated the output is set, and it remains active until execution of the command has been completed.
bError	BOOL	This output is switched to TRUE as soon as an error occurs during the execution of a command. The command-specific error code is contained in <i>nErrorId</i> . Is reset to FALSE by the execution of a command at the inputs.
nErrorId	UDINT	Contains the command-specific error code of the most recently executed command. Is reset to 0 by the execution of a command at the inputs (see error codes [▶ 438]).
nTerminalDescription	WORD	Contains the terminal name (e.g. 6811). Corresponds to register 8 of the bus terminal.
nFirmwareVersion	WORD	Contains the firmware version. Corresponds to register 9 of the bus terminal.
sDescription	STRING	Terminal name and firmware version as string (e.g. 'Terminal KL6811 / Firmware 2H')

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2 DUTs

4.2.1 Enums

4.2.1.1 E_DALIV2AddrType

```

TYPE E_DALIV2AddrType :
(
eDALIV2AddrTypeShort    := 0,
eDALIV2AddrTypeGroup    := 1,

```

```
eDALIV2AddrTypeBroadcast := 2
);
END_TYPE
```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.2 E_DALIV2CommandPriority

```
TYPE E_DALIV2CommandPriority :
(
  eDALIV2CommandPriorityHigh := 0,
  eDALIV2CommandPriorityMiddle := 1,
  eDALIV2CommandPriorityLow := 2
);
END_TYPE
```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.3 E_DALIV2ConfigurationCommands

```
TYPE E_DALIV2ConfigurationCommands :
(
  eDALIV2CommandDoNothing := 0,
  eDALIV2CommandOff := 1,
  eDALIV2CommandRecallMaxLevel := 2,
  eDALIV2CommandRecallMinLevel := 3,
  eDALIV2CommandGoToScene0 := 4,
  eDALIV2CommandGoToScene1 := 5,
  eDALIV2CommandGoToScene2 := 6,
  eDALIV2CommandGoToScene3 := 7,
  eDALIV2CommandGoToScene4 := 8,
  eDALIV2CommandGoToScene5 := 9,
  eDALIV2CommandGoToScene6 := 10,
  eDALIV2CommandGoToScene7 := 11,
  eDALIV2CommandGoToScene8 := 12,
  eDALIV2CommandGoToScene9 := 13,
  eDALIV2CommandGoToScene10 := 14,
  eDALIV2CommandGoToScene11 := 15,
  eDALIV2CommandGoToScene12 := 16,
  eDALIV2CommandGoToScene13 := 17,
  eDALIV2CommandGoToScene14 := 18,
  eDALIV2CommandGoToScene15 := 19
);
END_TYPE
```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.1.4 E_DALIV2CurrentAddressingState

```
TYPE E_DALIV2CurrentAddressingState :
(
  eDALIV2AddrStateIdle := 0,
  eDALIV2AddrStateRemoveLamp := 1,
  eDALIV2AddrStateReinsertLamp := 2,
  eDALIV2AddrStateAddressingLamp := 3
);
END_TYPE
```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.5 E_DALIV2DataFrameType

```

TYPE E_ DALIV2DataFrameType:
(
  eDALIV2DataFrameType16Bit      := 0,
  eDALIV2DataFrameType24Bit      := 3,
  eDALIV2DataFrameTypeOsrsm      := 6
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.6 E_DALIV2DimmingCurve

```

TYPE E_ DALIV2DimmingCurve :
(
  eDALIV2DimmingCurveLogarithmic := 0,
  eDALIV2DimmingCurveLinear      := 1
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.1.7 E_DALIV2EventScheme

```

TYPE E_ DALIV2EventScheme:
(
  eDALIV2EventSchemeUnknown      := -1,
  eDALIV2EventSchemeInstance     := 0, (* (default) Instance addressing, using instance type and
number. *)
  eDALIV2EventSchemeDevice       := 1, (* Device addressing, using short address and instance
type. *)
  eDALIV2EventSchemeDeviceInstance := 2, (* Device/instance addressing, using short address and
instance number. *)
  eDALIV2EventSchemeDeviceGroup   := 3, (* Device group addressing, using device group and
instance type. *)
  eDALIV2EventSchemeInstanceGroup := 4  (* Instance group addressing, using instance group and
type. *)
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.1.8 E_DALIV2InstAddrType

```

TYPE E_ DALIV2InstAddrType:
(
  eDALIV2InstAddrTypeNumber      := 0, (* Instance number (0-31) *)
  eDALIV2InstAddrTypeGroup       := 1, (* Instance group (0-31) *)
  eDALIV2InstAddrTypeType        := 2, (* Instance type (0-31) *)
  eDALIV2InstAddrTypeFeatureNumber := 3, (* Feature on instance number level (0-31) *)
  eDALIV2InstAddrTypeFeatureGroup := 4, (* Feature on instance group level (0-31) *)
  eDALIV2InstAddrTypeFeatureType  := 5, (* Feature on instance type level (0-31) *)
  eDALIV2InstAddrTypeFeatureBroadcast := 6, (* Feature on instance broadcast level *)

```

```

eDALIV2InstAddrTypeBroadcast      := 7,  (* Instance broadcast *)
eDALIV2InstAddrTypeFeatureDevice  := 8,  (* Feature on device level *)
eDALIV2InstAddrTypeDevice         := 9   (* Device *)
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.9 E_DALIV2OperationMode

```

TYPE E_DALIV2OperationMode :
(
  eDALIV2OperationModeDALI := 0,
  eDALIV2OperationModeDSI  := 1
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.1.10 E_DALIV2PowerSupplyMode

```

TYPE E_DALIV2PowerSupplyMode:
(
  eDALIV2PowerSypplyModeOn      := 0,
  eDALIV2PowerSypplyModeOff     := 1,
  eDALIV2PowerSypplyModeAuto    := 2
);
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.2 Structures

4.2.2.1 ST_DALIV2ChangeAddressList

```

TYPE ST_DALIV2ChangeAddressList :
STRUCT
  nOldAddress      : BYTE;
  nNewAddress      : BYTE;
  nRandomAddressHigh : BYTE;
  nRandomAddressMiddle : BYTE;
  nRandomAddressLow  : BYTE;
  nErrors          : DWORD;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.2 ST_DALIV2ControlTable

```

TYPE ST_DALIV2ControlTable :
STRUCT
  nActualValue : UINT;
  nControlValue : BYTE;

```



```

    nSwitchRange : UINT;
END_STRUCT
END_TYPE

```

Name	Type	Description
nActualValue	UINT	Measured brightness value.
nControlValue	BYTE	Associated switch point/interpolation point for the control value. Valid value range: 0 or nMinLevelMasterDev ... nMaxLevelMasterDev.
nSwitchRange	UINT	Threshold value around the interpolation point at which switching takes place. The entry "0" marks the beginning of the unused range of the table.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.3 ST_DALIV2DeviceSettings

```

TYPE ST_DALIV2DeviceSettings :
STRUCT
    nErrors          : DWORD;
    bPresent         : BOOL;
    nActualLevel     : BYTE;
    nPowerOnLevel    : BYTE;
    nSystemFailureLevel : BYTE;
    nMinLevel        : BYTE;
    nMaxLevel        : BYTE;
    nFadeRate        : BYTE;
    nFadeTime        : BYTE;
    nRandomAddress    : DWORD;
    nGroups          : WORD;
    nSceneLevels     : ARRAY [0..15] OF BYTE;
    nStatus          : BYTE;
    nMajorVersion    : BYTE;
    nMinorVersion    : BYTE;
    nDeviceType      : BYTE;
    nPhysicalMinLevel : BYTE;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.4 ST_DALIV2DeviceSettingsType01

```

TYPE ST_DALIV2DeviceSettingsType01 :
STRUCT
    nErrors          : DWORD;
    bPresent         : BOOL;
    nBatteryCharge    : UINT; (*0..254, 255->Error*)
    tDurationTestResult : TIME; (*0..510 min*)
    tLampEmergencyTime : TIME; (*0..255 h*)
    tLampTotalOperationTime : TIME; (*0..1024 h*)
    nEmergencyLevel   : BYTE; (*0..254*)
    nEmergencyMinLevel : BYTE; (*0..254*)
    nEmergencyMaxLevel : BYTE; (*0..254*)
    tRatedDuration    : TIME; (*0..510 min*)
    nNextFunctionTest  : UINT; (*0..255*)
    nNextDurationTest  : UINT; (*0..255*)
    nFunctionTestInterval : UINT; (*0..255*)
    nDurationTestInterval : UINT; (*0..255*)
    nTestExecutionTimeout : UINT; (*0..255*)
    nProlongTime       : UINT; (*0..255*)
    nEmergencyMode     : BYTE;
    nFeatures         : BYTE;
    nFailureStatus     : BYTE;

```

```

    nEmergencyStatus      : BYTE;
END_STRUCT
END_TYPE

```

Note:

The following variables are adapted to their target presentation range when they are read. They therefore differ from the read representation of the DALI device:

```

tDurationTestResult : TIME; (*0..510 min*)
tLampEmergencyTime  : TIME; (*0..255 h*)
tLampTotalOperationTime : TIME; (*0..1024 h*)
tRatedDuration      : TIME; (*0..510 min*)

```

For the other variables the conversion either makes no sense (e.g. *nEmergencyLevel*), or a presentation is not possible (e.g. *nNextDurationTest*), since the range of the variable type TIME is insufficient.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.5 ST_DALIV2FileLogging

```

TYPE ST_DALIV2FileLogging :
STRUCT
    sTimestamp      : STRING(30);
    sController     : STRING(20);
    sLineName       : STRING(10);
    sAddress        : STRING(2);
    sDescription     : STRING(20);
    sLocation       : STRING(20);
    sTestDuration   : STRING(8);
    sResult         : STRING(240);
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.6 ST_DALIV2SequenceTable

```

TYPE ST_DALIV2SequenceTable :
STRUCT
    nTargetValue : BYTE;
    tRampTime    : TIME;
    tProlongTime : TIME;
END_STRUCT
END_TYPE

```

Name	Type	Description
nTargetValue	BYTE	Target value
tRampTime	TIME	Time to reach the target value.
tProlongTime	TIME	Dwell time at the target value.

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.7 ST_DALIV2SwapShortAddressList

```

TYPE ST_DALIV2SwapShortAddressList :
STRUCT
    bShortAddressValid : BOOL;
    nNewShortAddress   : BYTE;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.8 ST_KL6821InData

```

TYPE ST_KL6821InData :
STRUCT
    nStatus      : WORD;
    arrData      : ARRAY [0..3] OF BYTE;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.2.9 ST_KL6821OutData

```

TYPE ST_KL6821OutData :
STRUCT
    nCtrl      : WORD;
    arrData    : ARRAY [0..3] OF BYTE;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4022.4	Tc2_DALI from v3.6.2.0

4.2.2.10 ST_KL6811InData

```

TYPE ST_KL6811InData:
STRUCT
    nStatus : BYTE;
    nDummy  : BYTE;
    nData   : WORD;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.2.11 ST_KL6811OutData

```

TYPE ST_KL6811OutData:
STRUCT
    nCtrl : BYTE;
    nDummy : BYTE;
    nData : WORD;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.3 [Obsolete]**4.2.3.1 ST_DALIV2InData**

```

TYPE ST_DALIV2InData :
STRUCT
  nStatus : BYTE;
  nDummy  : BYTE;
  nData   : WORD;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.2.3.2 ST_DALIV2OutData

```

TYPE ST_DALIV2OutData :
STRUCT
  nCtrl  : BYTE;
  nDummy : BYTE;
  nData  : WORD;
END_STRUCT
END_TYPE

```

Requirements

Development Environment	PLC library to include
TwinCAT from v3.1.4020.14	Tc2_DALI from v3.4.3.0

4.3 Integration into TwinCAT**4.3.1 KL6821 with PC system (CX5120)**

This example shows how to write a simple PLC program for DALI in TwinCAT and how to link it with the hardware. The task is to control a single dimmable lamp with a button.

Example: https://infosys.beckhoff.com/content/1033/tcplclib_tc2_dali/Resources/4325884043.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 Embedded PC CX5120
- 1x digital 4-channel input terminal KL1104 (for the dimming and reset functions)
- 1x DALI terminal KL6821
- 1x KL9010 end terminal

Set up the hardware and the DALI components as described in the documentation.

This example assumes that a Dim button was connected to the first KL1104 input and a Reset button to the second, and that a dimmable lamp is connected to DALI address 0. Set the initial fade rate of the control gear to 7 to achieve suitable dimming.

Software

Creation of the PLC program

Create a new "TwinCAT XAE project" and a "Standard PLC project".

Add the library Tc2_DALI in the PLC project under "References".

Create the following global variables:

```
VAR_GLOBAL
    bSwitch          AT %I* : BOOL;
    bReset           AT %I* : BOOL;
    stKL6821InData   AT %I* : ST_KL6821InData;
    stKL6821OutData  AT %Q* : ST_KL6821OutData;
    stCommandBuffer   : ST_DALIV2CommandBuffer;
END_VAR
```

bSwitch: Input variable for the Dim button.

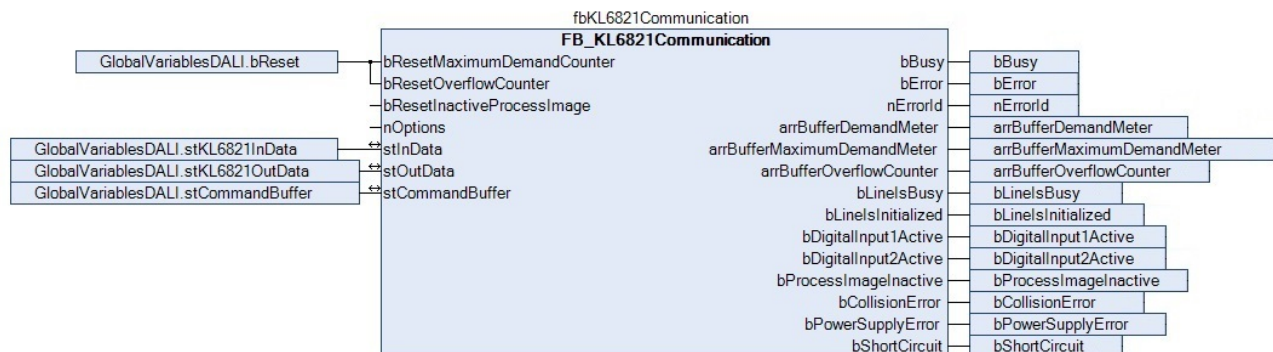
bReset: Input variable for the Reset button.

ST_KL6821InData: Input variable for the DALI terminal. ([ST_KL6821InData \[► 467\]](#))

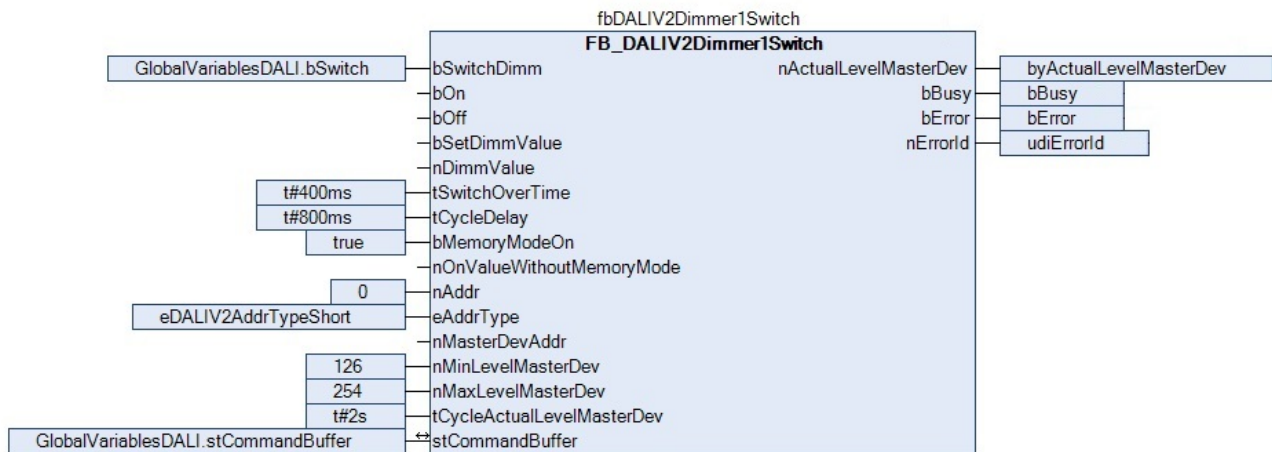
ST_KL6821OutData: Output variable for the DALI terminal. ([ST_KL6821OutData \[► 467\]](#))

stCommandBuffer: Required for the communication with DALI.

Create a program (CFC) for the background communication with DALI. The function block [FB_KL6821Communication \[► 82\]](#) is called in the program. In the communication function block ensure that the structures *stInData*, *stOutData* and *stCommandBuffer* are linked.



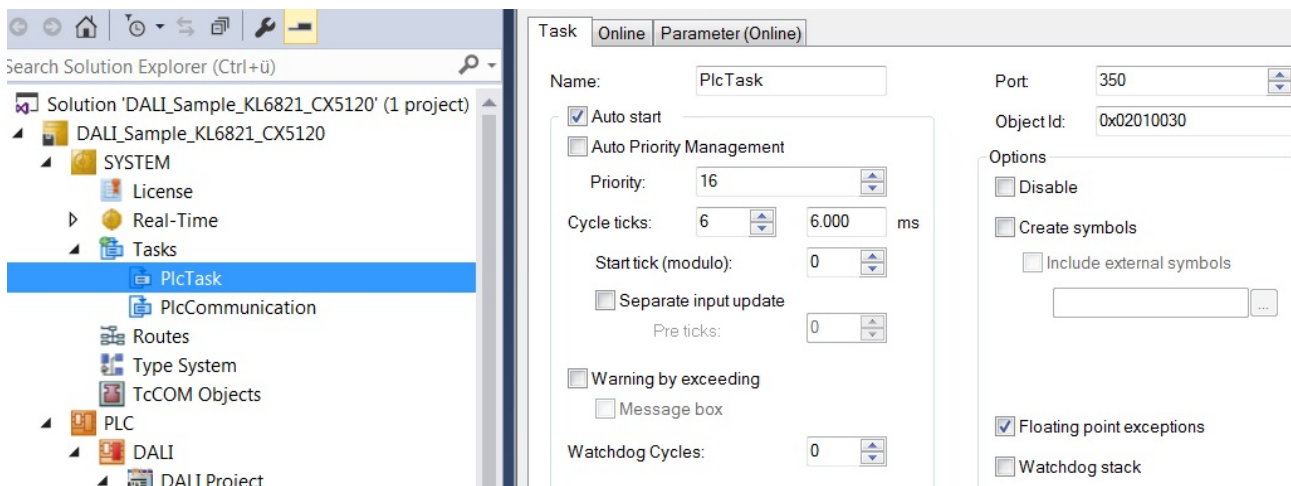
Create a MAIN program (CFC) in which the function block [FB_DALIV2Dimmer1Switch \[► 25\]](#) is called up. Connect the input *bSwitchDimm* of the dimmer function block with the global variable *bSwitch* and *stCommandBuffer* with the global variable *stCommandBuffer*.



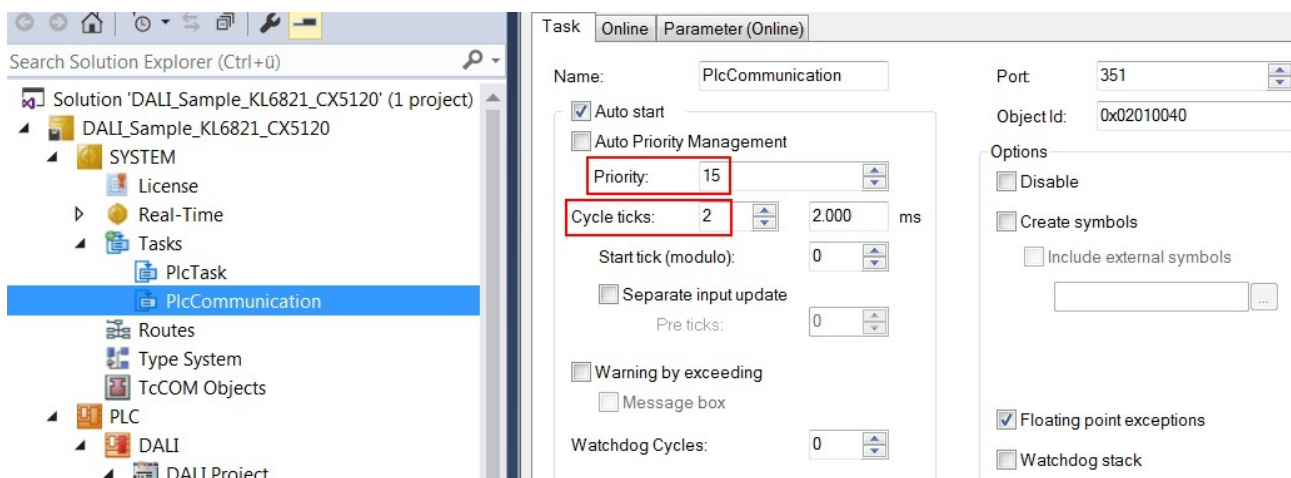
Parameters `nMinLevelMasterDevice` and `nMaxLevelMasterDevice`

i Make sure that the specified parameters `nMinLevelMasterDevice` and `nMaxLevelMasterDevice` match the minimum and maximum values of the device, in order to avoid malfunction.

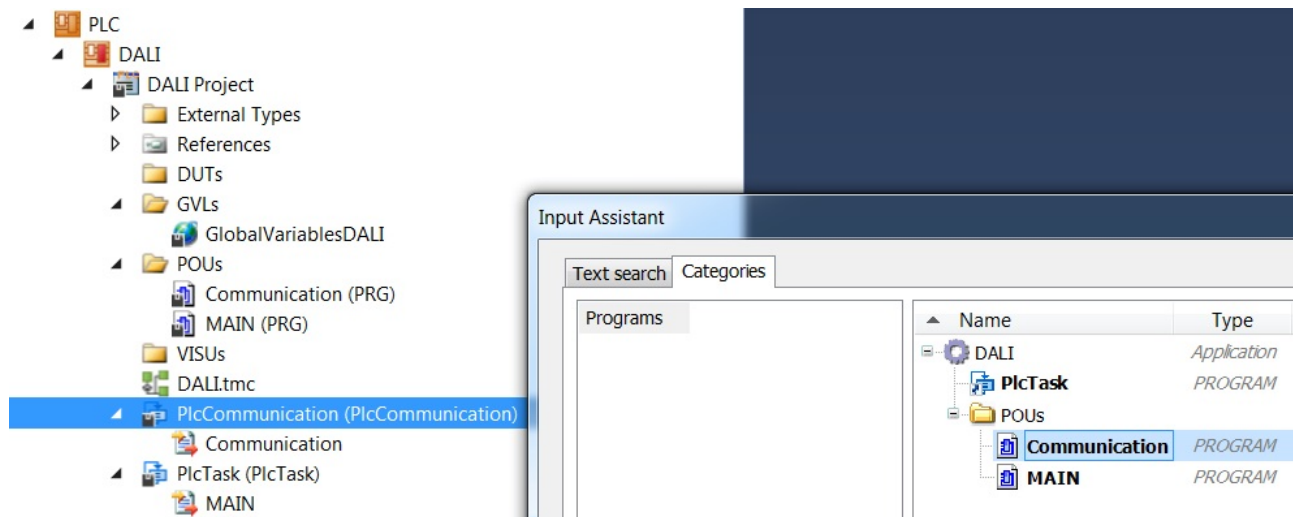
Navigate to the task configuration section and configure the `PlcTask`. By way of example, the task is assigned priority 16 and a cycle time of 6 ms.



Create a further task for the background communication. Assign a higher priority (smaller number) and a lower interval time to this task than the `PLCTask`.

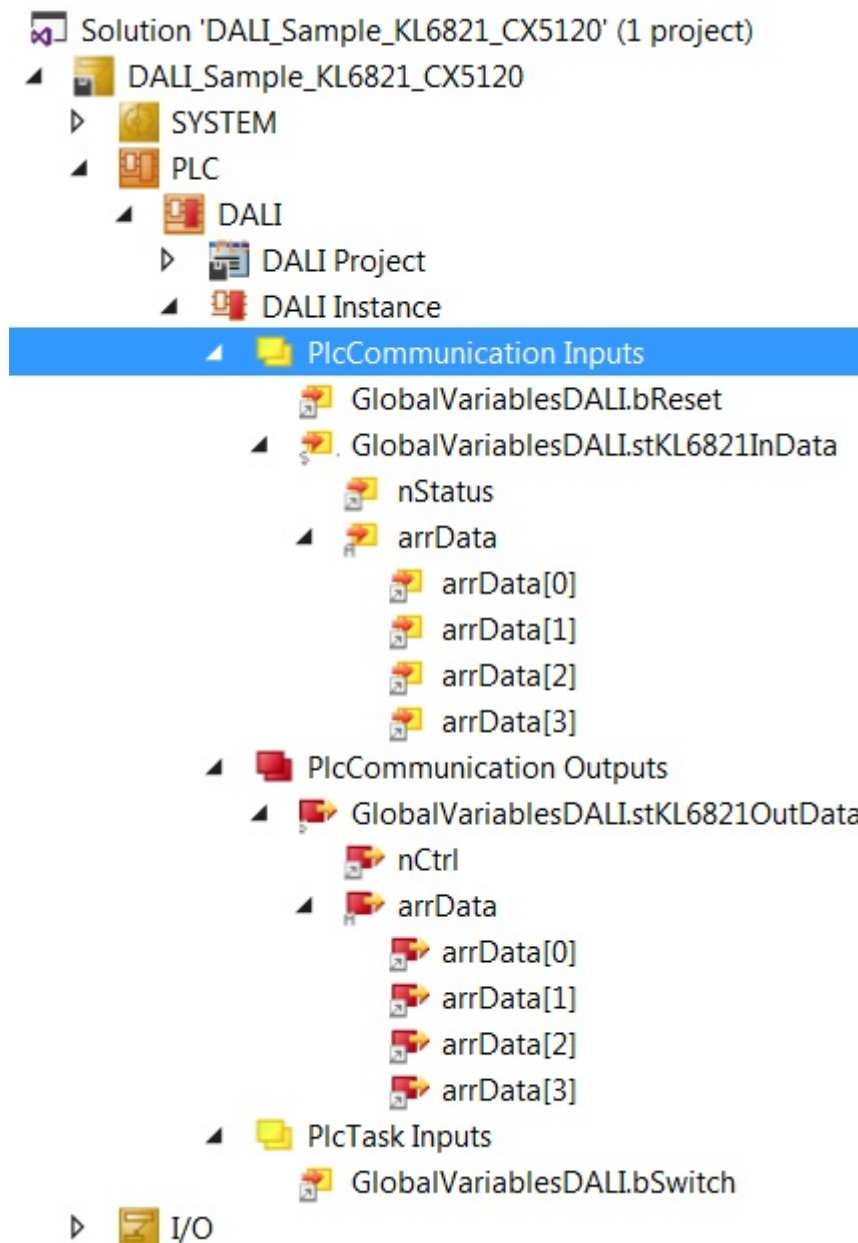


Add the program for the communication to this task. Further information on task configuration can be found in the description of the function block `FB_KL6821Communication` [► 82].



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 corresponding tasks.



Now link the global variables of PLC program with the inputs and outputs of the Bus Terminals. Create the Solution and enable the configuration.

The lamp can now be controlled by pressing or holding the dimmer button. You can use the Reset button to reset the inputs in *arrBufferMaximumDemandMeter* and *arrBufferOverflowCounter*.

5 Appendix

5.1 Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

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