

Translation

# EU-Type Examination Certificate

Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

EU-Type Examination Certificate Number: **BVS 18 ATEX E 005 X** Issue: **02**

Equipment: **I/O-terminal series type ELX\*\*\*\*-\*\*\*\*-\*\*\*\***

Manufacturer: **BECKHOFF Automation GmbH & Co. KG**

Address: **Hülshorstweg 20, 33415 Verl, Germany**

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 18.2063 EU. This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 18 ATEX E 005 X issue 01.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018** General requirements  
**EN IEC 60079-7:2015 + A1:2018** Increased Safety "e"  
**EN 60079-11:2012** Intrinsic Safety "i"

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:

 **II 3G Ex ec IIC T4 Gc** For types **ELX9560\*\*\*\*-\*\*\*\*, ELX9410\*\*\*\*-\*\*\*\***  
**II 3(1)G Ex ec [ia Ga] IIC T4 Gc** For all other types  
 **II (1)D [Ex ia Da] IIIC**  
**I (M1) [Ex ia Ma] I**

DEKRA Testing and Certification GmbH  
Bochum, 2024-06-25

Signed: Oliver Brumm

Managing Director

13 **Appendix**  
 14 **EU-Type Examination Certificate**  
**BVS 18 ATEX E 005 X issue 02**

15 **Product description**

15.1 **Subject and type**

I/O Terminal Series type ELX\*\*\*\*-\*\*\*\*-\*\*\*\*

Instead of the \*\*\* in the complete denomination letters or numerals will be inserted which characterize the different modifications:

Type ELX \* \* \* \* \_ \* \* \* \* \_ \* \* \* \*

9560	Power supply terminal																			
9410	Power supply terminal for E-bus																			
1052	2-channel digital input terminal NAMUR																			
1054	4-channel digital input terminal NAMUR																			
1058	8-channel digital input terminal NAMUR																			
2002	2-channel digital output terminal																			
2008	8-channel digital output terminal																			
2792	2-channel solid state relay output, potential-free																			
3152	2-channel analog input terminal 4...20 mA																			
3158	8-channel analog input terminal 4...20 mA																			
3181	1-channel analog input terminal 4...20 mA, HART																			
3184	4-channel analog input terminal 4...20 mA, HART																			
3202	2-channel analog input terminal RTD																			
3204	4-channel analog input terminal RTD																			
3252	2-channel analog input terminal potentiometer, 16 bit																			
3312	2-channel analog input terminal thermocouple																			
3314	4-channel analog input terminal thermocouple																			
3351	1-channel analog input terminal strain gauge																			
4154	4-channel analog output terminal 4...20 mA																			
4181	1-channel analog output terminal 4...20 mA, HART																			
5151	1-channel incremental encoder interface NAMUR																			
Software variant (Not Ex relevant, for information purposes only)																				
EtherCAT revision (Not Ex relevant, for information purposes only)																				

## Description

### Reason for this issue

- For the I/O-terminal series, the following terminals were redesigned:
  - 8-channel digital output terminal, type ELX2008-\*\*\*\*\_\*\*\*\*
  - 2-channel analog input terminal 4...20 mA, type ELX3152-\*\*\*\*\_\*\*\*\*
  - 8-channel analog input terminal 4...20 mA, type ELX3158-\*\*\*\*\_\*\*\*\*
  - 1-channel analog input terminal 4...20 mA, HART, type ELX3181-\*\*\*\*\_\*\*\*\*
  - 4-channel analog input terminal 4...20 mA, HART, type ELX3184-\*\*\*\*\_\*\*\*\*
  - 2-channel analog input terminal RTD, type ELX3202-\*\*\*\*\_\*\*\*\*
  - 4-channel analog input terminal RTD, type ELX3204-\*\*\*\*\_\*\*\*\*
  - 2-channel analog input terminal thermocouple, type ELX3312-\*\*\*\*\_\*\*\*\*
  - 4-channel analog input terminal thermocouple, type ELX3314-\*\*\*\*\_\*\*\*\*
  - 4-channel analog output terminal 4...20 mA, type ELX4154-\*\*\*\*\_\*\*\*\*
  - 1-channel analog output terminal 4...20 mA, HART, type ELX4181-\*\*\*\*\_\*\*\*\*
  - 1-channel incremental encoder interface NAMUR, type ELX5151-\*\*\*\*\_\*\*\*\*
- Approval for use of separately certified EtherCAT extension, type EK1110
- Update of documents

### Description of the product:

The I/O system terminals type ELX\*\*\*\*\_\*\*\*\*\_\*\*\*\* is a modular I/O system with contacts rated in the type of protection "ec" (supply contact / E-bus connector / spring-blade contact). It consists of at least a power supply unit ELX9560, one of the signal terminals and a bus end cover ELX9012 resp. EtherCAT extension EK1110 to cover the power and E-bus contacts.

An integrated E-bus interface connects to ELX signal terminals right of the ELX9560 power supply unit and EK1110 right of the signal terminals. These signal terminals can be combined in any way. Their intrinsically safe output circuits (resp. switching circuits for type ELX2792-\*\*\*\*\_\*\*\*\*), type of protection Ex ia, can be led into areas which require EPL Ga, EPL Da or EPL Ma equipment. The ELX9410 power supply terminal for E-bus is used to refresh the non-intrinsically safe E-bus signal.

A fin at the front of the ELX9410 ensures the separation between the connection facilities of the signal terminal (intrinsically safe circuits) and the ELX9410 (non-intrinsically safe circuits). There are 2 possible constellations to use the ELX9410:

- An additional ELX9560 power supply terminal followed by further ELX signal terminals can be connected to the right side of the ELX9410.
- Two ELX9410 terminals can be installed in direct succession for continuing the same terminal strand with standard Beckhoff EtherCAT Terminals.

The power supply unit ELX9560 and some signal terminals are available in 2 variants depending on the hardware version. These variants in different combinations are listed in the parameters. The Hardware version is marked on the power supply units as "HW:xx" where xx denotes the version number.

### Listing of all separately certified equipment used

Subject and type	Certificate	Standards
EtherCAT extension EK1110	KEMA 10ATEX0075 X	EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018

## 15.3 Parameters

### 15.3.1 Non-intrinsically safe circuits in level of protection ec

#### 15.3.1.1 Power supply terminal type **ELX9560-\*\*\*\*-\*\*\*\***

##### 15.3.1.1.1 Power supply circuit Clamp connectors red (24 V), blue (0 V)

Connection cross-section:

solid conductor and flexible conductor: 0.08...2.5 mm<sup>2</sup>, ferrule : 0.14...1.0 mm<sup>2</sup>

Rated nominal voltage (-15 %, +20 %)	U <sub>n</sub>	DC	24	V
Rated current	I <sub>n</sub>		750	mA
Maximum voltage	U <sub>m</sub>	AC	253	V

##### 15.3.1.1.2 E-bus circuit E-bus connector

Rated nominal voltage	U <sub>n</sub>	DC	5	V
Rated current	I <sub>n</sub>		40	mA
Maximum voltage	U <sub>m</sub>	AC	253	V

#### 15.3.1.2 Power supply terminal for E-bus type **ELX9410-\*\*\*\*-\*\*\*\***

##### 15.3.1.2.1 Power supply circuit Clamp connectors 5 (Input 24 V), 6 (Input 0 V)

Connection cross-section:

solid conductor and flexible conductor: 0.08...2.5 mm<sup>2</sup>, ferrule : 0.14...1.5 mm<sup>2</sup>

Rated nominal voltage (-15 %, +20 %)	U <sub>n</sub>	DC	24	V
Maximum voltage	U <sub>m</sub>	AC	253	V

##### 15.3.1.2.2 E-bus circuit E-bus connector

Rated nominal voltage	U <sub>n</sub>	DC	5	V
Rated current	I <sub>n</sub>		40	mA
Maximum voltage	U <sub>m</sub>	AC	253	V

#### 15.3.1.3 EtherCAT extension type **EK1110-xxxx**

##### 15.3.1.3.1 Ethernet circuit Ethernet RJ45 connector X1

Rated nominal voltage (-15 %, +20 %)	U <sub>n</sub>	DC	3.3	V
Rated power	P <sub>n</sub>		160	mW
Bemessungsstrom	U <sub>m</sub>	AC	253	V

##### 15.3.1.3.2 E-bus circuit E-bus connector

Rated nominal voltage (-15 %, +20 %)	U <sub>n</sub>	DC	5	V
Rated current	I <sub>n</sub>		130	mA
Maximum voltage	U <sub>m</sub>	AC	253	V

The front terminal contacts are not fitted

### 15.3.2 Intrinsically safe output circuits in level of protection ia for connection of intrinsically safe sensors or actuators

#### 15.3.2.1 Signal terminal type **ELX1052-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 4 (Uv1), 1 (Input 1, I1)  
Channel 2: Clamp contacts 8 (Uv2), 5 (Input 2, I2)

Each channel:

Maximum output voltage	$U_o$	10.75	V
Maximum output current	$I_o$	12	mA
Linear output characteristics			
Maximum output power	$P_o$	33	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	58	66	15	2.14
$L_o$ [mH]	100	100	100	100

### 15.3.2.2 Signal terminal type **ELX1054-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 2 (Uv1), 1 (I1)  
Channel 2: Clamp contacts 6 (Uv2), 5 (I2)  
Channel 3: Clamp contacts 3 (Uv3), 4 (I3)  
Channel 4: Clamp contacts 7 (Uv4), 8 (I4)

Each channel:

Maximum output voltage	$U_o$	10.72	V
Maximum output current	$I_o$	10.4	mA
Linear output characteristics			
Maximum output power	$P_o$	28	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	58	66	15	2.14
$L_o$ [mH]	100	100	100	100

### 15.3.2.3 Signal terminal type **ELX1058-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 9 (Uv1), 1 (Input 1)  
Channel 2: Clamp contacts 10 (Uv2), 2 (Input 2)  
Channel 3: Clamp contacts 11 (Uv3), 3 (Input 3)  
Channel 4: Clamp contacts 12 (Uv4), 4 (Input 4)  
Channel 5: Clamp contacts 13 (Uv5), 5 (Input 5)  
Channel 6: Clamp contacts 14 (Uv6), 6 (Input 6)  
Channel 7: Clamp contacts 15 (Uv7), 7 (Input 7)  
Channel 8: Clamp contacts 16 (Uv8), 8 (Input 8)

Each channel:

Maximum output voltage	$U_o$	10.72	V
Maximum output current	$I_o$	10.4	mA
Linear output characteristics			
Maximum output power	$P_o$	28	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	58	66	15	2.14
$L_o$ [mH]	100	100	100	100

### 15.3.2.4 Signal terminal type **ELX2002-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 1 (+Output1, +O1), 3 (-Output1, -O1)  
Channel 2: Clamp contacts 5 (+Output2, +O2), 7(-Output2, -O2)

Each channel:

The output values depend on the connected power supply unit:

15.3.2.4.1 When connected to ELX9560-\*\*\*\*-\*\*\*\* HW:xx with xx < 05  
(Variants with Hardware version below 05)

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	111	mA
Linear output characteristics			
Maximum output power	$P_o$	768	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	24	16	9.2	0.094

15.3.2.4.2 When connected to ELX9560-\*\*\*\*-\*\*\*\* HW:xx with xx  $\geq$  05  
(Variants with Hardware version 05 or above)

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	109	mA
Linear output characteristics			
Maximum output power	$P_o$	730	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	25	17	9.9	0.47

15.3.2.5 Signal terminal type **ELX2008-\*\*\*\*-\*\*\*\***

- Channel 1: Clamp contacts 1 (+Output1, +O1), 2 (-Output1, -O1)
- Channel 2: Clamp contacts 5 (+Output2, +O2), 6 (-Output2, -O2)
- Channel 3: Clamp contacts 4 (+Output3, +O3), 3 (-Output3, -O3)
- Channel 4: Clamp contacts 8 (+Output4, +O4), 7 (-Output4, -O4)
- Channel 5: Clamp contacts 9 (+Output5, +O5), 10 (-Output5, -O5)
- Channel 6: Clamp contacts 13 (+Output6, +O6), 14 (-Output6, -O6)
- Channel 7: Clamp contacts 12 (+Output7, +O7), 11 (-Output7, -O7)
- Channel 8: Clamp contacts 16 (+Output8, +O8), 15 (-Output8, -O8)

Each channel:

The output values depend on the hardware versions of connected power supply unit and signal terminal:

15.3.2.5.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX2008-****-****</b>
<b>HW:xx</b> with xx	< 05	< 01

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	111	mA
Linear output characteristics			
Maximum output power	$P_o$	773	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	24	16	9.2	0.094

15.3.2.5.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX2008-****_****</b>
<b>HW:xx</b> with xx	≥ 05	< 01

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	109	mA
Linear output characteristics			
Maximum output power	$P_o$	735	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	25	17	9.9	0.47

15.3.2.5.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX2008-****_****</b>
<b>HW:xx</b> with xx	< 05	≥ 01

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	109	mA
Linear output characteristics			
Maximum output power	$P_o$	751	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	25	17	9.6	0.18

15.3.2.5.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX2008-****_****</b>
<b>HW:xx</b> with xx	≥ 05	≥ 01

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	106	mA
Linear output characteristics			
Maximum output power	$P_o$	713	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	27	19	11	0.63

15.3.2.6 Signal terminal type **ELX3152-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 1 ( $U_{v1}$ ), 2 (GND, -I1), 3 (Input1, +I1)  
 Channel 2: Clamp contacts 5 ( $U_{v2}$ ), 6 (GND, -I2), 7 (Input2, +I2)

Each channel:

The output values depend on the hardware versions of connected power supply unit and signal terminal:

15.3.2.6.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3152-****_****</b>
<b>HW:xx</b> with xx	< 05	< 02

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	85	mA
Linear output characteristics			
Maximum output power	$P_o$	565	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	30	18	2

15.3.2.6.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3152-****_****</b>
<b>HW:xx</b> with xx	$\geq 05$	< 02

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	80	mA
Linear output characteristics			
Maximum output power	$P_o$	540	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	35	21	2.8

15.3.2.6.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3152-****_****</b>
<b>HW:xx</b> with xx	< 05	$\geq 02$

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.6.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3152-****_****</b>
<b>HW:xx</b> with xx	$\geq 05$	$\geq 02$

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW



Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.7 Signal terminal type **ELX3158-\*\*\*\*-\*\*\*\***

- Channel 1: Clamp contacts 1 (Input1, I1), 9 (Uv1)
- Channel 2: Clamp contacts 5 (Input2, I2), 13 (Uv2)
- Channel 3: Clamp contacts 2 (Input3, I3), 10 (Uv3)
- Channel 4: Clamp contacts 6 (Input4, I4), 14 (Uv4)
- Channel 5: Clamp contacts 3 (Input5, I5), 11 (Uv5)
- Channel 6: Clamp contacts 7 (Input6, I6), 15 (Uv6)
- Channel 7: Clamp contacts 4 (Input7, I7), 12 (Uv7)
- Channel 8: Clamp contacts 8 (Input8, I8), 16 (Uv8)

Each channel:

The output values depend on the hardware versions of connected power supply unit and signal terminal:

15.3.2.7.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3158-****-****</b>
<b>HW:xx</b> with xx	< 05	< 01

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	85	mA
Linear output characteristics			
Maximum output power	$P_o$	565	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	30	18	2

15.3.2.7.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3158-****-****</b>
<b>HW:xx</b> with xx	$\geq$ 05	< 01

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	80	mA
Linear output characteristics			
Maximum output power	$P_o$	535	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	35	21	2.8

15.3.2.7.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3158-****-****</b>
<b>HW:xx</b> with xx	< 05	$\geq$ 01



Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.7.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3158-****_****</b>
<b>HW:xx</b> with xx	$\geq 05$	$\geq 01$

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.8 Signal terminal type **ELX3181-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 8 ( $U_{v1}$ ), 7 (Input1, I1)

The output value depends on the connected power supply unit:

15.3.2.8.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3181-****_****</b>
<b>HW:xx</b> with xx	$< 05$	$< 02$

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	85	mA
Linear output characteristics			
Maximum output power	$P_o$	565	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	30	18	2

15.3.2.8.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3181-****_****</b>
<b>HW:xx</b> with xx	$\geq 05$	$< 02$

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	80	mA
Linear output characteristics			
Maximum output power	$P_o$	535	mW



Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	35	21	2.8

15.3.2.8.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3181-****_****</b>
<b>HW:xx</b> with xx	< 05	$\geq$ 02

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.8.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3181-****_****</b>
<b>HW:xx</b> with xx	$\geq$ 05	$\geq$ 02

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.9 Signal terminal type **ELX3184-\*\*\*\*\_\*\*\*\***

- Channel 1: Clamp contacts 4 (Uv1), 2 (I1)
- Channel 2: Clamp contacts 8 (Uv2), 6 (I2)
- Channel 3: Clamp contacts 12 (Uv3), 10 (I3)
- Channel 4: Clamp contacts 16 (Uv4), 14 (I4)

Each channel:

The output values depend on the hardware versions of connected power supply unit and signal terminal:

15.3.2.9.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX3184-****_****</b>
<b>HW:xx</b> with xx	< 05	< 01

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	81	mA
Linear output characteristics			
Maximum output power	$P_o$	561	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	34	20	2.4

15.3.2.9.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3184-****-****</b>
<b>HW:xx</b> with xx	$\geq 05$	$< 01$

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	79	mA
Linear output characteristics			
Maximum output power	$P_o$	534	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	36	20	3

15.3.2.9.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3184-****-****</b>
<b>HW:xx</b> with xx	$< 05$	$\geq 01$

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.9.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX3184-****-****</b>
<b>HW:xx</b> with xx	$\geq 05$	$\geq 01$

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.10 Signal terminal type **ELX3202-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 1 (+RL1), 2 (+R1), 5 (-RL1), 6 (-R1)  
 Channel 2: Clamp contacts 3 (+RL2), 4 (+R2), 7 (-RL2), 8 (-R2)



Each channel:

Maximum output voltage	$U_o$	4.94	V
Maximum output current	$I_o$	12	mA
Linear output characteristics			
Maximum output power	$P_o$	15	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I, IIA, IIB, IIC	IIC
$C_o$ [ $\mu$ F]	1000	100
$L_o$ [mH]	100	100

### 15.3.2.11 Signal terminal type **ELX3204-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 1 (+R1), 5 (-R1)

Channel 2: Clamp contacts 2 (+R2), 6 (-R2)

Channel 3: Clamp contacts 3 (+R3), 7 (-R3)

Channel 4: Clamp contacts 4 (+R4), 8 (-R4)

Each channel:

Maximum output voltage	$U_o$	4.94	V
Maximum output current	$I_o$	12	mA
Linear output characteristics			
Maximum output power	$P_o$	15	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I, IIA, IIB, IIC	IIC
$C_o$ [ $\mu$ F]	1000	100
$L_o$ [mH]	100	100

### 15.3.2.12 Signal terminal type **ELX3252-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 1 (-R1), 5 (+R1), 2 (RL1)

Channel 2: Clamp contacts 4 (-R2), 8 (+R2), 3 (RL2)

Each channel:

Maximum output voltage	$U_o$	4.94	V
Maximum output current	$I_o$	12	mA
Linear output characteristics			
Maximum output power	$P_o$	16	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I, IIA, IIB, IIC	IIC
$C_o$ [ $\mu$ F]	1000	100
$L_o$ [mH]	100	100

### 15.3.2.13 Signal terminal type **ELX3312-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 1 (+TC1), 5 (-TC1)

Channel 2: Clamp contacts 2 (+TC2), 6 (-TC2)

Each channel:

Maximum output voltage	$U_o$	4.94	V
Maximum output current	$I_o$	0.5	mA
Linear output characteristics			
Maximum output power	$P_o$	0.5	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I, IIA, IIB, IIC	IIC
$C_o$ [ $\mu$ F]	1000	100
$L_o$ [mH]	100	100

15.3.2.14 Signal terminal type **ELX3314-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 1 (+TC1), 5 (-TC1)  
 Channel 2: Clamp contacts 2 (+TC2), 6 (-TC2)  
 Channel 3: Clamp contacts 3 (+TC3), 7 (-TC3)  
 Channel 4: Clamp contacts 4 (+TC4), 8 (-TC4)

Each channel:

Maximum output voltage	$U_o$	4.94	V
Maximum output current	$I_o$	0.5	mA
Linear output characteristics			
Maximum output power	$P_o$	0.5	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I, IIA, IIB, IIC	IIC
$C_o$ [ $\mu$ F]	1000	100
$L_o$ [mH]	100	100

15.3.2.15 Signal terminal type **ELX3351-\*\*\*\*-\*\*\*\***

Clamp contacts 2 (+UD), 6 (-UD), 3 (+UR), 7 (-UR), 4 (+UV), 8 (-UV)

Maximum output voltage	$U_o$	11.76	V
voltage difference between 2 clamps			
Maximum output current	$I_o$	146	mA
Maximum output power	$P_o$	214	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIC	IIC
$C_o$ [ $\mu$ F]	40	39	9.9	1.5
$L_o$ [mH]	20	13.3	6.6	1.7

15.3.2.16 Signal terminal type **ELX4154-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 9 (Output 1, 01), 1 (GND)  
 Channel 2: Clamp contacts 10 (Output 2, 02), 2 (GND)  
 Channel 3: Clamp contacts 11 (Output 3, 03), 3 (GND)  
 Channel 4: Clamp contacts 12 (Output 4, 04), 4 (GND)

Each channel:

The output values depend on the hardware versions of connected power supply unit and signal terminal:

15.3.2.16.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****-****</b>	Signal terminal type <b>ELX4154-****-****</b>
<b>HW:xx</b> with xx	< 05	< 02

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	85	mA
Linear output characteristics			
Maximum output power	$P_o$	565	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	30	18	2

15.3.2.16.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4154-****_****</b>
<b>HW:xx</b> with xx	≥ 05	< 02

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	80	mA
Linear output characteristics			
Maximum output power	$P_o$	535	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	35	21	2.8

15.3.2.16.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4154-****_****</b>
<b>HW:xx</b> with xx	< 05	≥ 02

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.16.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4154-****_****</b>
<b>HW:xx</b> with xx	≥ 05	≥ 02

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.17 Signal terminal type **ELX4181-\*\*\*\*\_\*\*\*\***

Channel 1: Clamp contacts 8 (Output 1, O1), 6 (GND)

The output value depends on the hardware versions of connected power supply unit and signal terminal:

15.3.2.17.1 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4181-****_****</b>
<b>HW:xx</b> with xx	< 05	< 03

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	85	mA
Linear output characteristics			
Maximum output power	$P_o$	565	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	43	30	18	2

15.3.2.17.2 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4181-****_****</b>
<b>HW:xx</b> with xx	$\geq$ 05	< 03

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	80	mA
Linear output characteristics			
Maximum output power	$P_o$	535	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	49	35	21	2.8

15.3.2.17.3 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4181-****_****</b>
<b>HW:xx</b> with xx	< 05	$\geq$ 03

Maximum output voltage	$U_o$	27.7	V
Maximum output current	$I_o$	76	mA
Linear output characteristics			
Maximum output power	$P_o$	522	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIIC
$C_o$ [ $\mu$ F]	3.45	2.2	0.663	0.085
$L_o$ [mH]	55	39	23	3.1

15.3.2.17.4 These parameters apply to the combination of hardware versions from the table:

Hardware Version	Power supply type <b>ELX9560-****_****</b>	Signal terminal type <b>ELX4181-****_****</b>
<b>HW:xx</b> with xx	$\geq$ 05	$\geq$ 03

Maximum output voltage	$U_o$	27	V
Maximum output current	$I_o$	74	mA
Linear output characteristics			
Maximum output power	$P_o$	496	mW



Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	3.75	2.33	0.705	0.09
$L_o$ [mH]	59	42	25	3.7

15.3.2.18 Signal terminal type **ELX5151-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 4 (Uv1), 1 (A)

Channel 2: Clamp contacts 8 (Uv2), 5 (B)

Each channel:

Maximum output voltage	$U_o$	10.72	V
Maximum output current	$I_o$	12.4	mA
Linear output characteristics			
Maximum output power	$P_o$	33	mW

Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	I	IIA	IIB / IIIC	IIC
$C_o$ [ $\mu$ F]	58	66	15	2.14
$L_o$ [mH]	100	100	100	100

15.3.3 Intrinsically safe switching circuits in level of protection ia

Signal terminal type **ELX2792-\*\*\*\*-\*\*\*\***

Channel 1: Clamp contacts 14 (NO\_1), 11 (COM\_1), 12 (NC\_1)

Channel 2: Clamp contacts 24 (NO\_2), 21 (COM\_2), 22 (NC\_2)

Each channel:

Nominal switching voltage		AC/DC $\leq 30$	V
Nominal switching current		AC $\leq 0,5$	A
		DC $\leq 1$	A
Maximum input voltage	$U_i$	AC/DC 30	V
Maximum input current	$I_i$	internally limited	
Maximum input power	$P_i$	internally limited	
Effective internal capacitance	$C_i$	0,9	nF
Effective internal inductance	$L_i$	negligible	

15.3.4 Ambient temperature range  $T_a$  -25 °C ... 60 °C

16 Report Number

BVS PP 18.2063 EU, as of 2024-06-25

17 Specific Conditions of Use

- 17.1 The equipment shall only be used in an area of pollution degree 1 or 2, as defined in IEC 60664-1.
- 17.2 The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP54 in accordance with EN IEC 60079-0.
- 17.3 Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- 17.4 The circuits shall be limited to overvoltage Category II as defined in IEC 60664-1.
- 17.5 The Terminal system is suitable for use in an ambient temperature range of -25 °C to +60 °C.
- 17.6 Do not disconnect energized terminals.



- 17.7 The last terminal of each segment is to be covered by a bus end cover ELX9012, unless two ELX9410 terminals are installed in direct succession for continuing the same terminal segment with standard Beckhoff EtherCAT terminals (e.g. EL/ES/EK).
- 17.8 An additional ELX9560 power supply terminal, followed by further ELX signal terminals can be connected to the right side of the ELX9410.

**18 Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

**19 Remarks and additional information**

Drawings and documents are listed in the confidential report.

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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH  
Bochum, 2024-06-25  
BVS-Hil/Mu A 20230101 / 342988100

  
\_\_\_\_\_  
Managing Director