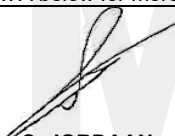





# Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

|   |  |   |  |
|---|--|---|--|
| <b>IA CERTIFICATE</b>   | MASC S/26-8159X  | <b>Issue</b>  | 0  |
| <b>Issue Date</b>   | 10 April 2026  | <b>Expiry Date</b>  | 10 April 2029  |
| <b>** Based on Certificate No</b>   | IECEX DEK 16.0078X   | <b>Issue / Variations / Amendment</b>   | 11   |
| <b>Requested by</b>   | <b>Beckhoff Automation (Pty) Ltd</b><br>7 Ateljee Street, Randpark Ridge, Randburg   |   |  |
| <b>Manufacturer</b>   | <b>Beckhoff Automation GmbH &amp; Co. KG</b><br>Hülsthorstweg 20, 33415 Verl, Germany  |   |  |
| <b>Description</b>  | Fieldbus Components Type BK ..., Type BC ..., Type KL ..., Type KS ..., Type EK ..., Type EKM ..., Type EL ... and Type ES ... for use in I/O and Fieldbus systems.<br><br>See Base Certificate** Annex 1 for the type code, the ambient temperature range, the temperature class of the modules, the electrical data of the supply and the input and output circuits that shall be taken from Table 1 of Annex 1. |   |  |
| <b>Equipment</b>  | Fieldbus Components  | <b>Type</b>   | BK ..., BC ..., KL ..., KS ..., EK ..., EKM ..., EL ... and ES ... |
| <b>MARKING:</b><br><b>Original marking as per certificate ** remains applicable.</b><br><b>IA number must be added.</b>   | <b>Type:</b>   | Fieldbus Components Type BK ..., BC ..., KL ..., KS ..., EK ..., EKM ..., EL ... and ES ...   |  |
|   | <b>Ex Marking:</b>   | Ex ec IIC T4 Gc   |  |
|   | <b>IA Number:</b>  | MASC S/26-8159X (To be additionally marked on equipment)  |  |
| <b>Warnings:</b>  | See Base Certificate ** (original marking must be applied)   |   |  |
| <b>Quality Assurance report (QAR) / Notification (QAN):</b>   | DE/BVS/QAR16.0010/10   |   |  |
| <b>Compliance:</b><br>The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards:<br><ul style="list-style-type: none"> <li>SANS (IEC) 60079-0: 2019 Equipment - General requirements</li> <li>SANS (IEC) 60079-7: 2019 Equipment protection by increased safety "e"</li> </ul> <i>Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.</i> |  |   |  |
| <b>Specific conditions of use "X":</b><br><ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>  |  |   |  |
| <b>Conditions of manufacture:</b><br><ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>   |  |   |  |
| <br><b>S. JORDAAN</b><br><b>TECHNICAL SPECIALIST</b>   |  | <br><b>N. VILOJEN</b><br><b>TECHNICAL OFFICER</b> |  |
| <p><small>This certificate covers all units sold as long as the QAR/QAN remains valid.</small></p> <p><small>According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).</small></p>  |  |   |  |

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:  
 SANS 10086 requirements;  
 Any conditions mentioned in the above certificate;  
 Any relevant requirements of the MHS Act;  
 Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

This certificate may only be reproduced in full  
 The certificate is not transferable and remains the property of the issuing body.

**IA CERTIFICATE: MASC S/26-8159X**  
**Equipment: Fieldbus Components**  
**(Expiry date: 10 April 2029)**

ANNEX A

|   |  |
|---|--|
| This document is based on and must be read in conjunction with certificate IECEx DEK 16.0078X.  |  |
| <b>Description (According to Base Certificate) **</b>   |  |
| "Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)." |  |
| <b>Standard compliance</b>  | See Base Certificate **  |
| <b>Specific conditions of use ("X")</b>   | <ul style="list-style-type: none"> <li>• The Fieldbus Components shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.</li> <li>• The Fieldbus Components shall be installed in a suitable enclosure providing a degree of protection of at least IP54 according to IEC 60079-0, taking into account the environmental conditions under which the equipment will be used.</li> <li>• Provisions shall be made to prevent the rated voltages from being exceeded by transient disturbances of more than 119 V.</li> <li>• The Fieldbus Components may only be removed or inserted when the system supply and the field supply are switched off, or when the location is known to be non-hazardous.</li> <li>• The Fieldbus Components may only be disconnected or connected when the system supply is switched off, or when the location is known to be non-hazardous.</li> <li>• Address selectors and ID switches may only be adjusted when the system supply is switched off, or when the location is known to be non-hazardous</li> </ul>   |
| <b>Conditions of manufacture</b>  | <ul style="list-style-type: none"> <li>• None.</li> </ul>  |
| <b>Conditions of Certification</b>  | <ul style="list-style-type: none"> <li>• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</li> <li>• As per ARP 0108: 2018 / NCoP 2398: 2022 (as applicable) a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date).</li> <li>• The apparatus must be additionally marked with the MASC marking details above.</li> <li>• This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date.</li> <li>• The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate.</li> <li>• The certification on which this IA Certificate is based must remain valid.</li> <li>• The extent of the requirements in the ARP 0108:2018 / NCoP 2398: 2022 (as applicable), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged.</li> <li>• The Ex-quality assurance notification/report for the equipment must remain valid.</li> </ul> |
| <b>Conclusion:</b>  | <ul style="list-style-type: none"> <li>• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **.</li> <li>• The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).</li> </ul>   |

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions, or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

This document may only be reproduced in full.  
This certificate is not transferable and remains the property of the issuing body.  
This document will not be supported by MASC for certification purposes outside the borders of South Africa.

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07  
Directors: Roelof Viljoen & Francoius du Toit  
Unit #5, Lelyta Park, 45 Jurg Avenue, Hennospark Ext 87, Centurion, 0157  
P.O. Box 14344, Clubview, 0014  
Tel: 012 653 2959 ♦ Fax: 086 605 8568  
e-mail: [info@masc-ex.co.za](mailto:info@masc-ex.co.za)



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

|                     |   |             |                             |
|---------------------|---|-------------|-----------------------------|
| Certificate No.:    | <b>IECEX DEK 16.0078X</b>   | Page 1 of 4 | <u>Certificate history:</u> |
| Status:             | <b>Current</b>  | Issue No: 7 | Issue 6 (2023-12-04)        |
| Date of Issue:      | 2025-02-05  |             | Issue 5 (2023-03-29)        |
| Applicant:          | <b>Beckhoff Automation GmbH &amp; Co. KG</b><br>Hülsthorstweg 20<br>33415 Verl<br>Germany   |             | Issue 4 (2020-07-09)        |
| Equipment:          | <b>Fieldbus Components Type BK ..., Type BC ..., Type KL ..., Type KS ..., Type EK ..., Type EKM ..., Type EL ... and Type ES ...</b> |             | Issue 3 (2019-07-16)        |
| Optional accessory: |   |             | Issue 2 (2018-06-08)        |
| Type of Protection: | <b>Ex ec</b>  |             | Issue 1 (2017-06-13)        |
| Marking:            | Ex ec IIC T4 Gc   |             | Issue 0 (2017-01-30)        |

Approved for issue on behalf of the IECEx  
Certification Body:

**R. Schuller**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**DEKRA Certification B.V.**  
Meander 1051  
6825 MJ Arnhem  
Netherlands





# IECEX Certificate of Conformity

Certificate No.: **IECEX DEK 16.0078X**

Page 2 of 4

Date of issue: 2025-02-05

Issue No: 7

Manufacturer: **Beckhoff Automation GmbH & Co. KG**  
Hülsthorstweg 20  
33415 Verl  
Germany

Manufacturing locations: **Beckhoff Automation GmbH & Co. KG**  
Hülsthorstweg 20  
33415 Verl  
Germany

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR16.0109/07](#)

Quality Assessment Report:

[DE/BVS/QAR16.0010/08](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX DEK 16.0078X**

Page 3 of 4

Date of issue: 2025-02-05

Issue No: 7

## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Fieldbus Components Type BK ..., Type BC ..., Type KL ..., Type KS ..., Type EK ..., Type EKM ..., Type EL ... and Type ES ... for use in I/O and Fieldbus systems.

The type code, the ambient temperature range and the temperature class of the modules shall be taken from Table 1, see Annex 1.

## **Electrical data**

The electrical data of the supply and the input and output circuits shall be taken from Table 1, see Annex 1.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

The Fieldbus Components shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.

The Fieldbus Components shall be installed in a suitable enclosure providing a degree of protection of at least IP54 according to IEC 60079-0, taking into account the environmental conditions under which the equipment will be used.

Provisions shall be made to prevent the rated voltages from being exceeded by transient disturbances of more than 119 V.

The Fieldbus Components may only be removed or inserted when the system supply and the field supply are switched off, or when the location is known to be non-hazardous.

The Fieldbus Components may only be disconnected or connected when the system supply is switched off, or when the location is known to be non-hazardous.

Address selectors and ID switches may only be adjusted when the system supply is switched off, or when the location is known to be non-hazardous.



# IECEX Certificate of Conformity

Certificate No.: **IECEX DEK 16.0078X**

Page 4 of 4

Date of issue: 2025-02-05

Issue No: 7

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Addition of modules EL1862, EL1862-0010, EL1872, EL2872 and EL2872-0010.

**Annex:**

[229559200 Annex 1.pdf](#)

**Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X**

**Table 1**

| Description  | Type/Beckhoff No. | Temp. code | Ambient Range | Technical Data | Supply Volt. |
|--|-------------------|------------|---------------|----------------|--------------|
| Lightbus Bus Coupler for up to 64 Bus Terminals  | BK2000            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Lightbus Bus Coupler for up to 64 digital Bus Terminals  | BK2010            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Lightbus "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK2020            | T4         | -25...+60°C   | ---            | 24Vdc        |
|  | BK3000            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP Bus Coupler for up to 64 digital Bus Terminals, 1.5 Mbaud  | BK3010            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP/FMS Bus Coupler for up to 64 Bus Terminals, 12 Mbaud   | BK3100            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP Bus Coupler for up to 64 digital Bus Terminals, 12 Mbaud   | BK3110            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension), 12 Mbaud   | BK3120            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension), 12 Mbaud  | BK3150            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP Bus Coupler with fibre optic connection for up to 64 Bus Terminals, 1.5 Mbaud  | BK3500            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP "Economy plus" Bus Coupler with fibre optic connection for up to 64 Bus Terminals(255 with K-bus extension), 12 Mbaud                      | BK3520            | T4         | -25...+60°C   | ---            | 24Vdc        |
| PROFIBUS DP "Low Cost" Bus Coupler for up to 64 digital Bus Terminals, 12 Mbaud  | LC3100            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Interbus Bus Coupler for up to 64 Bus Terminals  | BK4000            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Interbus Bus Coupler for up to 64 digital Bus Terminals  | BK4010            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Interbus "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK4020            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Interbus Bus Coupler with fibre optic connection for up to 64 Bus Terminals  | BK4500            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CANopen Bus Coupler for up to 64 digital Bus Terminals   | BK5110            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CANopen "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)   | BK5120            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CANopen "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK5150            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CANopen "Low Cost" Bus Coupler version for up to 64 digital Bus Terminals (255 with K-bus extension)   | LC5100            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CANopen "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension), Bus connection: D-sub plug, 9-pin instead of open style connector | BK5151            | T4         | -25...+60°C   | ---            | 24Vdc        |
| DeviceNet Bus Coupler for up to 64 Bus Terminals   | BK5200            | T4         | -25...+60°C   | ---            | 24Vdc        |
| DeviceNet Bus Coupler for up to 64 digital Bus Terminals   | BK5210            | T4         | -25...+60°C   | ---            | 24Vdc        |
| DeviceNet "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)   | BK5220            | T4         | -25...+60°C   | ---            | 24Vdc        |
| DeviceNet "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK5250            | T4         | -25...+60°C   | ---            | 24Vdc        |
| DeviceNet "Low Cost" Bus Coupler for up to 64 digital Bus Terminals (255 with K-bus extension)   | LC5200            | T4         | -25...+60°C   | ---            | 24Vdc        |
| ControlNet Bus Coupler for up to 64 Bus Terminals  | BK7000            | T4         | -25...+60°C   | ---            | 24Vdc        |
| CC-Link "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK7150            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Modbus Bus Coupler for up to 64 Bus Terminals  | BK7300            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Modbus "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)   | BK7350            | T4         | -25...+60°C   | ---            | 24Vdc        |
| Fipio "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)   | BK7420            | T4         | -25...+60°C   | ---            | 24Vdc        |
| SERCOS interface Bus Coupler for up to 64 Bus Terminals, 2.4 Mbaud   | BK7500            | T4         | -25...+60°C   | ---            | 24Vdc        |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |        |    |             |     |       |
|--|--------|----|-------------|-----|-------|
| SERCOS interface "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension) 2, 4, 8, 16 Mbaud  | BK7520 | T4 | -25...+60°C | --- | 24Vdc |
| RS485 Bus Coupler for up to 64 Bus Terminals   | BK8000 | T4 | -25...+60°C | --- | 24Vdc |
| RS232 Bus Coupler for up to 64 Bus Terminals   | BK8100 | T4 | -25...+60°C | --- | 24Vdc |
| Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals; Ethernet protocols TwinCAT ADS, Modbus TCP, Beckhoff real-time Ethernet                                    | BK9000 | T4 | -25...+60°C | --- | 24Vdc |
| Ethernet TCP/IP "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK9050 | T4 | -25...+60°C | --- | 24Vdc |
| PROFINET "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)   | BK9053 | T4 | -25...+60°C | --- | 24Vdc |
| EtherNet/IP "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)  | BK9055 | T4 | -25...+60°C | --- | 24Vdc |
| Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals (with integrated 2-channel switch); Ethernet protocols TwinCAT ADS, Modbus TCP, Beckhoff real-time Ethernet | BK9100 | T4 | -25...+60°C | --- | 24Vdc |
| PROFINET Bus Coupler for up to 64 Bus Terminals (with integrated 2-channel switch)   | BK9103 | T4 | -25...+60°C | --- | 24Vdc |
| EtherNet/IP Bus Coupler for up to 64 Bus Terminals (with integrated 2-channel switch)  | BK9105 | T4 | -25...+60°C | --- | 24Vdc |
| USB Bus Coupler for up to 64 Bus Terminals   | BK9500 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, Lightbus interface  | BC2000 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, PROFIBUS DP interface, 12 Mbaud   | BC3100 | T4 | -25...+60°C | --- | 24Vdc |
| "Compact" Bus Terminal Controller with integrated IEC 61131-3 PLC, 48 kbytes program memory, PROFIBUS DP interface, 12 Mbaud                                       | BC3150 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, Interbus interface  | BC4000 | T4 | -25...+60°C | --- | 24Vdc |
| "Compact" Bus Terminal Controller with integrated IEC 61131-3 PLC, 48 kbytes program memory, CANopen interface, 1 Mbaud  | BC5150 | T4 | -25...+60°C | --- | 24Vdc |
| "Compact" Bus Terminal Controller with integrated IEC 61131-3 PLC, 48 kbytes program memory, DeviceNet interface, 500 kbaud  | BC5250 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, Modbus interface  | BC7300 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, RS485 interface   | BC8000 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, RS485 interface   | BC8050 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, RS232C interface  | BC8100 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 32 kbytes program memory, RS232C interface  | BC8150 | T4 | -25...+60°C | --- | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 64 kbytes program memory, Ethernet TCP/IP interface; Ethernet protocols TwinCAT ADS, Modbus TCP           | BC9000 | T4 | -25...+60°C | --- | 24Vdc |
| "Compact" Bus Terminal Controller with integrated IEC 61131-3 PLC, 48 kbytes program memory, Ethernet TCP/IP interface; Ethernet protocols TwinCAT ADS, Modbus TCP | BC9050 | T4 | -25...+60°C | --- | 24Vdc |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |           |    |             |       |       |
|--|-----------|----|-------------|-------|-------|
| "Economy plus" Bus Terminal Controller with integrated IEC 61131-3 PLC, 128 kbytes program memory, Ethernet TCP/IP interface; Ethernet protocols TwinCAT ADS, Modbus TCP                                 | BC9020    | T4 | -25...+60°C | ---   | 24Vdc |
| "Economy plus" Bus Terminal Controller with integrated IEC 61131-3 PLC, 128 kbytes program memory, Ethernet TCP/IP interface and integrated 2-channel switch; Ethernet protocols TwinCAT ADS, Modbus TCP | BC9120    | T4 | -25...+60°C | ---   | 24Vdc |
| Bus Terminal Controller with integrated IEC 61131-3 PLC, 64 kbytes program memory, Ethernet TCP/IP interface and integrated 2-channel switch; Ethernet protocols TwinCAT ADS, Modbus TCP                 | BC9100    | T4 | -25...+60°C | ---   | 24Vdc |
| 2-channel digital input terminal 24 V DC, filter 3.0 ms, 4-wire system   | KL/KS1002 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC, filter 0.2 ms, 4-wire system   | KL/KS1012 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 48 V DC, filter 3.0 ms, 4-wire system   | KL/KS1032 | T4 | -25...+60°C | 48Vdc | ---   |
| 2-channel digital input terminal 24 V DC, positive/negative switching, filter 3.0 ms, 4-wire system  | KL/KS1052 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, filter 3.0 ms  | KL/KS1104 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, filter 0.2 ms, 2 inputs 3-wire system, 2 inputs 1-wire system  | KL/KS1114 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 5 V DC, filter 0.2 ms   | KL/KS1124 | T4 | -25...+60°C | 5Vdc  | ---   |
| 4-channel digital input terminal 24 V DC, positive/negative switching, filter 3.0 ms, 2 inputs 3-wire system, 2 inputs 1-wire system   | KL/KS1154 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, positive/negative switching, filter 0.2 ms, 2 inputs 3-wire system, 2 inputs 1-wire system   | KL/KS1164 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, negative switching, filter 3.0 ms, 2 inputs 3-wire system, 2 inputs 1-wire system  | KL/KS1184 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, negative switching, filter 0.2 ms, 2 inputs 3-wire system, 2 inputs 1-wire system  | KL/KS1194 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC, with short-circuit proof sensor supply and diagnostics, filter 3.0 ms, 2 inputs 3-wire system, 4 bit input and 2 bit output                                    | KL/KS1212 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC, filter 0.2 ms, 4-wire system with edge triggered puls expansion 100 ms   | KL/KS1232 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC for 2-wire sensors type 2, EN 61131-2, filter 3.0 ms 2 inputs 2-wire system, 2 bit inputs   | KL/KS1302 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC for 2-wire sensors type 2, EN 61131-2, filter 3.0 ms  | KL/KS1304 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC for 2-wire sensors type 2, EN 61131-2, filter 0.2 ms 2 inputs 2-wire system, 2 bit inputs   | KL/KS1312 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC for 2-wire sensors type 2, EN 61131-2, filter 0.2 ms 4 inputs 2-wire system, 4 bit inputs   | KL/KS1314 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC for NAMUR sensors, 2-wire connection  | KL/KS1352 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal for break-in alarm, filter 3.0 ms   | KL/KS1362 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal thermistor, filter 30 ms  | KL/KS1382 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC for 2-wire sensors type 3, EN 61131-2, filter 3.0 ms  | KL/KS1402 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC for 2-wire sensors type 3, IEC 61131-2, filter 3.0 ms   | KL/KS1404 | T4 | -25...+60°C | 24Vdc | ---   |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |             |    |             |              |     |
|--|-------------|----|-------------|--------------|-----|
| 8-channel digital input terminal 24 V DC, IEC 61131-2, type 3, filter 3.0 ms, 1-wire-system                        | KL/KS1408   | T4 | -25...+60°C | 24Vdc        | --- |
| 2-channel digital input terminal 24 V DC for 2-wire sensors type 3, EN 61131-2, filter 0.2 ms                      | KL/KS1412   | T4 | -25...+60°C | 24Vdc        | --- |
| 4-channel digital input terminal 24 V DC for 2-wire sensors type 3, IEC 61131-2, filter 0.2 ms                     | KL/KS1414   | T4 | -25...+60°C | 24Vdc        | --- |
| 8-channel digital input terminal 24 V DC, IEC 61131-2, type 3, filter 0.2 ms                                       | KL/KS1418   | T4 | -25...+60°C | 24Vdc        | --- |
| 4-channel digital input terminal 24 V DC for 2-wire sensors type 2, EN 61131-2, filter 0.2 ms, 6 mA, 2-wire system | KL/KS1434   | T4 | -25...+60°C | 24Vdc        | --- |
| 8-channel digital input terminal 24 V DC, filter 3.0 ms, 1-wire system, negative switching                         | KL/KS1488   | T4 | -25...+60°C | 24Vdc        | --- |
| 8-channel digital input terminal 24 V DC, filter 0.2 ms, 1-wire system, negative switching                         | KL/KS1498   | T4 | -25...+60°C | 24Vdc        | --- |
| up/down counter 24 V DC, 100 kHz, 32 bit counter   | KL/KS1501   | T4 | -25...+60°C | 24Vdc        | --- |
| 2-channel, up/down counter, 24 V DC, 1 kHz, 16 bit counter   | KL/KS1512   | T4 | -25...+60°C | 24Vdc        | --- |
| 2-channel digital input terminal 120 V AC to 230 V AC, 4-wire system   | KL/KS1702   | T4 | -25...+60°C | 120...230Vac | --- |
| 2-channel digital input terminal 120 V AC/DC, 4-wire system  | KL/KS1712   | T4 | -25...+60°C | 120...230Vac | --- |
| 2-channel digital input terminal 120 V AC to 230 V AC, without power contacts, 4-wire system                       | KL/KS1722   | T4 | -25...+60°C | 120...230Vac | --- |
| HD Bus Terminals, 4-channel digital input 24 V DC, 3-wire connection, filter 3.0 ms                                | KL1804      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminal, 8-channel digital input 24 V DC, 2-wire connection  | KL1808      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminals, 16-channel digital input 24 V DC, filter 3.0 ms  | KL1809      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminals, 4-channel digital input 24 V DC, 3-wire connection, filter 0.2 ms                                | KL1814      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminals, 16-channel digital input 24 V DC, filter 0.2 ms  | KL1819      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminal, 8-channel digital input + 8-channel digital output 24 V DC  | KL1859      | T4 | -25...+60°C | 24Vdc        | --- |
| 16-channel digital input terminals 24 V DC, type 3, flat-ribbon cable connection, filter 3.0 ms                    | KL1862      | T4 | -25...+60°C | 24Vdc        | --- |
| 16-channel digital input 24 V DC, 3.0 ms, flat-ribbon cable connection, switching to ground potential              | KL1862-0010 | T4 | -25...+60°C | 24Vdc        | --- |
| 16-channel digital input terminals 24 V DC, type 3, flat-ribbon cable connection, filter 0.2 ms                    | KL1872      | T4 | -25...+60°C | 24Vdc        | --- |
| HD Bus Terminal, 16-channel digital input 24 V DC, 0 V (ground) switching  | KL1889      | T4 | -25...+60°C | 24Vdc        | --- |
| 4-channel digital input terminal, TwinSAFE, 24 V DC  | KL1904      | T4 | -25...+60°C | 24Vdc        | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A, 4-wire system  | KL/KS2012   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 2-channel digital output terminal 24 V DC, 2.0 A, 4-wire system  | KL/KS2022   | T4 | -25...+60°C | 24Vdc/2A     | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A with polarity protection, 4-wire system                           | KL/KS2032   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 4-channel digital output terminal 24 V DC, 0.5 A,  | KL/KS2114   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 4-channel digital output terminal 5 V DC, 0.02 A,  | KL/KS2124   | T4 | -25...+60°C | 5Vdc         | --- |
| 4-channel digital output terminal 24 V DC, 0.5 A with polarity protection  | KL/KS2134   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 4-channel digital output terminal 24 V DC, negative switching, 0.5 A   | KL/KS2184   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A, 4-wire system  | KL/KS2212   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 4-channel digital output terminal 24 V DC, 0.5 A with polarity protection, 2-wire system                           | KL/KS2404   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |
| 8-channel digital output terminal 24V DC, 0.5 A  | KL/KS2408   | T4 | -25...+60°C | 24Vdc/0,5A   | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |             |    |             |                   |     |
|--|-------------|----|-------------|-------------------|-----|
| 4-channel digital output terminal 24 V DC, 2 A with polarity protection, 2-wire system                         | KL/KS2424   | T4 | -25...+60°C | 24Vdc/2A          | --- |
| 8-channel digital output terminal 24 V DC, 0.5 A, total current 3 A, 1-wire system, negative switching         | KL/KS2488   | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 2-channel pulse width output terminal 24 V DC, 0.1 A, 4-wire system  | KL/KS2502   | T4 | -25...+60°C | 24Vdc             | --- |
| 2-channel pulse width output terminal 24 V DC, 1 A, 4-wire system, switching to negative potential             | KL/KS2512   | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 1-channel pulse train output terminal, 2 RS422 outputs (5 V level)   | KL/KS2521   | T4 | -25...+60°C | 5Vdc              | --- |
| 2-channel triac output terminal 12...230V AC, 0,5A   | KL/KS2712   | T4 | -25...+60°C | 230Vac/0,5A       | --- |
| 2-channel solid state load relay up to 230 V AC/DC, 0,3 A  | KL/KS2702   | T4 | -25...+60°C | 230Vac/0,3A       | --- |
| 2-channel triac output terminal 12...230V AC, 0,5A   | KL/KS2712   | T4 | -25...+60°C | 230Vac/0,5A       | --- |
| 2-channel triac output terminal 12...230 V AC, 1 A with mutually locked outputs                                | KL/KS2722   | T4 | -25...+60°C | 230Vac/1A         | --- |
| 4-channel digital output terminal 24 V AC/DC, 1 A, short-circuit-proof   | KL/KS2784   | T4 | -25...+60°C | 30Vac, 48Vdc / 1A | --- |
| 4-channel digital output terminal 24 V AC/DC, 1 A, potential-free, short-circuit-proof                         | KL/KS2794   | T4 | -25...+60°C | 30Vac, 48Vdc / 1A | --- |
| HD EtherCAT Terminal, 8-channel digital output 24 V DC, 0.5 A  | KL2808      | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| HD EtherCAT Terminal, 16-channel digital output 24 V DC, 0.5 A   | KL2809      | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 16-channel digital output terminal 24 V DC, 0.5 A, flat-ribbon cable connection                                | KL2872      | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 16-channel digital output terminal 24 V DC, 0.5 A, flat-ribbon cable connection, switching to ground potential | KL2872-0010 | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| HD EtherCAT Terminal, 16-channel digital output 24 V DC, 0.5 A, 0 V (ground) switching                         | KL2889      | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 4-channel digital output terminal, TwinSAFE, 24 V DC, 0.5 A  | KL2904      | T4 | -25...+60°C | 24Vdc/0,5A        | --- |
| 1-channel analog input terminal -10 V...+10 V, differential input, 12 bit                                      | KL/KS3001   | T4 | -25...+60°C | -10V...+10V       | --- |
| 2-channel analog input terminal -10 V...+10 V, differential input, 12 bit                                      | KL/KS3002   | T4 | -25...+60°C | -10V...+10V       | --- |
| 1-channel analog input terminal 0...20 mA, differential input, 12 bit  | KL/KS3011   | T4 | -25...+60°C | 0...20mA          | --- |
| 2-channel analog input terminal 0...20 mA, differential input, 12 bit  | KL/KS3012   | T4 | -25...+60°C | 0...20mA          | --- |
| 1-channel analog input terminal 4...20 mA, differential input, 12 bit  | KL/KS3021   | T4 | -25...+60°C | 4...20mA          | --- |
| 2-channel analog input terminal 4...20 mA, differential input, 12 bit  | KL/KS3022   | T4 | -25...+60°C | 4...20mA          | --- |
| 1-channel loop-powered input terminal 0...20 mA, with power supply for transducers via power contacts, 12 bit  | KL/KS3041   | T4 | -25...+60°C | 0...20mA          | --- |
| 2-channel loop-powered input terminal 0...20 mA, with power supply for transducers via power contacts, 12 bit  | KL/KS3042   | T4 | -25...+60°C | 0...20mA          | --- |
| 4-channel analog input terminal 0...20 mA, 12 bit  | KL/KS3044   | T4 | -25...+60°C | 0...20mA          | --- |
| 1-channel loop-powered input terminal 4...20 mA, with power supply for transducers via power contacts, 12 bit  | KL/KS3051   | T4 | -25...+60°C | 4...20mA          | --- |
| 2-channel loop-powered input terminal 4...20 mA, with power supply for transducers via power contacts, 12 bit  | KL/KS3052   | T4 | -25...+60°C | 4...20mA          | --- |
| 4-channel analog input terminal 4...20 mA, 12 bit  | KL/KS3054   | T4 | -25...+60°C | 4...20mA          | --- |
| 1-channel analog input terminal 0...10 V, single-ended, 12 bit   | KL/KS3061   | T4 | -25...+60°C | 0...10V           | --- |
| 2-channel analog input terminal 0...10 V, single-ended, 12 bit   | KL/KS3062   | T4 | -25...+60°C | 0...10V           | --- |
| 4-channel analog input terminal 0...10 V, single-ended, 12 bit   | KL/KS3064   | T4 | -25...+60°C | 0...10V           | --- |
| 2-channel analog input terminal -10 V...+10 V, differential input, 16 bit                                      | KL/KS3102   | T4 | -25...+60°C | -10V...+10V       | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |             |    |             |                      |     |
|--|-------------|----|-------------|----------------------|-----|
| 2-channel analog input terminal 0...20 mA, differential input, 16 bit  | KL/KS3112   | T4 | -25...+60°C | 0...20mA             | --- |
| 2-channel analog input terminal 4...20 mA, differential input, 16 bit  | KL/KS3122   | T4 | -25...+60°C | 4...20mA             | --- |
| 2-channel analog input terminal -10 V...+10 V, differential input, 16 bit, ±0,05 % accuracy                  | KL/KS3132   | T4 | -25...+60°C | -10V...+10V          | --- |
| 2-channel analog input terminal 0...20 mA, differential input, 16 bit, ±0,05 % accuracy                      | KL/KS3142   | T4 | -25...+60°C | 0...20mA             | --- |
| 2-channel analog input terminal 4...20 mA, differential input, 16 bit, ±0,05 % accuracy                      | KL/KS3152   | T4 | -25...+60°C | 4...20mA             | --- |
| 2-channel analog input terminal 0...10 V, differential input, 16 bit, ±0,05 % accuracy                       | KL/KS3162   | T4 | -25...+60°C | 0...10V              | --- |
| 2-channel analog input terminal 0...2 V, differential input, 16 bit, ±0,05 % accuracy                        | KL/KS3172   | T4 | -25...+60°C | 0...2V               | --- |
| 2-channel analog input terminal -2 V...2 V, differential input, 16 bit, ±0,05 % accuracy                     | KL/KS3182   | T4 | -25...+60°C | -2V...+2V            | --- |
| 1-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 3-wire system                           | KL/KS3201   | T4 | -25...+60°C | PT100 (RTD)          | --- |
| 2-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 3-wire system                           | KL/KS3202   | T4 | -25...+60°C | PT100 (RTD)          | --- |
| 4-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 2-wire system                           | KL/KS3204   | T4 | -25...+60°C | PT100 (RTD)          | --- |
| HD Bus Terminal, 8-channel input terminal PT1000, Ni1000 (RTD)   | KL3208-0010 | T4 | -25...+60°C | PT1000, Ni1000 (RTD) | --- |
| 2-channel input terminal PT100 (RTD) for 4-wire connection, high-precision                                   | KL/KS3222   | T4 | -25...+60°C | PT100 (RTD)          | --- |
| 8-channel input terminal PT1000, Ni1000 (RTD) for resistance sensors, resolution 0.1 °C, 1-wire system       | KL/KS3228   | T4 | -25...+60°C | PT1000, Ni1000 (RTD) | --- |
| 1-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit                | KL3311      | T4 | -25...+60°C | Thermocouple         | --- |
| 2-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit                | KL3312      | T4 | -25...+60°C | Thermocouple         | --- |
| 4-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit                | KL3314      | T4 | -25...+60°C | Thermocouple         | --- |
| 1-channel resistor bridge input terminal (strain gauge), 16 bit  | KL/KS3351   | T4 | -25...+60°C | Resistor bridge      | --- |
| 1-channel accurate resistance bridge evaluation, with self-calibration, 16 bit                               | KL/KS3356   | T4 | -25...+60°C | Resistor bridge      | --- |
| 1-channel oscilloscope terminal, -20 mV...20 mV, 100 µs sampling time, decentralised analog value processing | KL/KS3361   | T4 | -25...+60°C | -20mV...+20mV        | --- |
| 2-channel oscilloscope terminal, -10 V...+10 V, 100 µs sampling time, decentralised analog value processing  | KL/KS3362   | T4 | -25...+60°C | -10V...+10V          | --- |
| 4-channel analog input terminal -10 V...+10 V, 12 bit, 4 x 2-wire system                                     | KL/KS3404   | T4 | -25...+60°C | -10V...+10V          | --- |
| 8-channel analog input terminal -10 V...+10 V, 12 bit, 1-wire system   | KL/KS3408   | T4 | -25...+60°C | -10V...+10V          | --- |
| 4-channel analog input terminal 0...20 mA, 12 bit, 4 x 2-wire system   | KL/KS3444   | T4 | -25...+60°C | 0...20mA             | --- |
| 8-channel analog input terminal 0...20 mA, 12 bit, 1-wire system   | KL/KS3448   | T4 | -25...+60°C | 0...20mA             | --- |
| 4-channel analog input terminal 4...20 mA, 12 bit, 4 x 2-wire system   | KL/KS3454   | T4 | -25...+60°C | 4...20mA             | --- |
| 8-channel analog input terminal 4...20 mA, 12 bit, 1-wire system   | KL/KS3458   | T4 | -25...+60°C | 4...20mA             | --- |
| 4-channel analog input terminal 0...10 V, 12 bit, 4 x 2-wire system  | KL/KS3464   | T4 | -25...+60°C | 0...10V              | --- |
| 8-channel analog input terminal 0...10 V, 12 bit, 1-wire system  | KL/KS3468   | T4 | -25...+60°C | 0...10V              | --- |
| 1-channel analog output terminal 0...10 V, 12 bit  | KL/KS4001   | T4 | -25...+60°C | 0...10V              | --- |
| 2-channel analog output terminal 0...10 V, 12 bit  | KL/KS4002   | T4 | -25...+60°C | 0...10V              | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|   |           |    |             |             |     |
|---|-----------|----|-------------|-------------|-----|
| 4-channel analog output terminal 0...10 V, 12 bit                                 | KL/KS4004 | T4 | -25...+60°C | 0...10V     | --- |
| 1-channel analog output terminal 0...20 mA, 12 bit                                | KL/KS4011 | T4 | -25...+60°C | 0...20mA    | --- |
| 2-channel analog output terminal 0...20 mA, 12 bit                                | KL/KS4012 | T4 | -25...+60°C | 0...20mA    | --- |
| 1-channel analog output terminal 4...20 mA, 12 bit                                | KL/KS4021 | T4 | -25...+60°C | 4...20mA    | --- |
| 2-channel analog output terminal 4...20 mA, 12 bit                                | KL/KS4022 | T4 | -25...+60°C | 4...20mA    | --- |
| 1-channel analog output terminal -10 V...+10 V, 12 bit                            | KL/KS4031 | T4 | -25...+60°C | -10V...+10V | --- |
| 2-channel analog output terminal -10 V...+10 V, 12 bit                            | KL/KS4032 | T4 | -25...+60°C | -10V...+10V | --- |
| 4-channel analog output terminal -10 V...+10 V, 12 bit                            | KL/KS4034 | T4 | -25...+60°C | -10V...+10V | --- |
| 2-channel analog output terminal 0...20 mA, 16 bit                                | KL/KS4112 | T4 | -25...+60°C | 0...20mA    | --- |
| 2-channel analog output terminal -10 V...+10 V, 16 bit                            | KL/KS4132 | T4 | -25...+60°C | -10V...+10V | --- |
| 4-channel analog output terminal 0...10 V, 12 bit, 4 x 2-wire system              | KL/KS4404 | T4 | -25...+60°C | 0...10V     | --- |
| 8-channel analog output terminal 0...10 V, 12 bit, 1-wire system                  | KL/KS4408 | T4 | -25...+60°C | 0...10V     | --- |
| 4-channel analog output terminal 0...20 mA, 12 bit, 4 x 2-wire system             | KL/KS4414 | T4 | -25...+60°C | 0...20mA    | --- |
| 8-channel analog output terminal 0...20 mA, 12 bit, 1-wire system                 | KL/KS4418 | T4 | -25...+60°C | 0...20mA    | --- |
| 4-channel analog output terminal 4...20 mA, 12 bit, 4 x 2-wire system             | KL/KS4424 | T4 | -25...+60°C | 4...20mA    | --- |
| 8-channel analog output terminal 4...20 mA, 12 bit, 1-wire system                 | KL/KS4428 | T4 | -25...+60°C | 4...20mA    | --- |
| 4-channel analog output terminal -10 V...+10 V, 12 bit, 4 x 2-wire system         | KL/KS4434 | T4 | -25...+60°C | -10V...+10V | --- |
| 8-channel analog output terminal -10 V...+10 V, 12 bit, 1-wire system             | KL/KS4438 | T4 | -25...+60°C | -10V...+10V | --- |
| 2-channel analog input, 2-channel analog output terminal -10 V...+10 V, 12 bit    | KL/KS4494 | T4 | -25...+60°C | -10V...+10V | --- |
| SSI sensor interface  | KL/KS5001 | T4 | -25...+60°C | ---         | --- |
| SSI sensor interface bidirectional for digifas® drives                            | KL/KS5051 | T4 | -25...+60°C | ---         | --- |
| Incremental encoder interface with complementary inputs                           | KL/KS5101 | T4 | -25...+60°C | ---         | --- |
| Incremental encoder interface with single inputs                                  | KL/KS5111 | T4 | -25...+60°C | ---         | --- |
| Incremental encoder interface with programmable outputs                           | KL/KS5121 | T4 | -25...+60°C | ---         | --- |
| 1-channel incremental encoder interface, 32 bit                                   | KL/KS5151 | T4 | -25...+60°C | ---         | --- |
| 2-Kanal-Inkremental-Encoder-Interface, 32 Bit                                     | KL/KS5152 | T4 | -25...+60°C | ---         | --- |
| Serial interface RS232, 9.6 kbaud   | KL/KS6001 | T4 | -25...+60°C | ---         | --- |
| Serial interface TTY, 20 mA current loop  | KL/KS6011 | T4 | -25...+60°C | 20mA        | --- |
| Serial interface RS422/RS485, 9.6 kbaud   | KL/KS6021 | T4 | -25...+60°C | ---         | --- |
| Serial interface RS232, 115.2 kbaud   | KL/KS6031 | T4 | -25...+60°C | ---         | --- |
| Serial interface RS422/RS485, 115.2 kbaud   | KL/KS6041 | T4 | -25...+60°C | ---         | --- |
| Data exchange terminal with serial interface, 32 bit                              | KL/KS6051 | T4 | -25...+60°C | ---         | --- |
| AS-Interface master terminal  | KL/KS6201 | T4 | -25...+60°C | ---         | --- |
| EIB Bus Terminal  | KL/KS6301 | T4 | -25...+60°C | ---         | --- |
| LON Bus Terminal  | KL/KS6401 | T4 | -25...+60°C | ---         | --- |
| MP-Bus master terminal  | KL/KS6771 | T4 | -25...+60°C | ---         | --- |
| DSI/DALI master and power supply terminal   | KL/KS6811 | T4 | -25...+60°C | ---         | --- |
| TwinSAFE Logic Bus Terminal with 4 digital outputs 24 V DC, 0.5 A                 | KL6904    | T4 | -25...+60°C | 24Vdc/0,5A  | --- |
| Bus end terminal  | KL9010    | T4 | -25...+60°C | ---         | --- |
| Terminal bus extension, end terminal at KL9050                                    | KL9020    | T4 | -25...+60°C | ---         | --- |
| Terminal bus extension, coupler terminal from KL9020 or KL9050                    | KL9050    | T4 | -25...+60°C | ---         | --- |
| Shield terminal, 8 x shield   | KL/KS9070 | T4 | -25...+60°C | ---         | --- |
| Isolation terminal  | KL9080    | T4 | -25...+60°C | ---         | --- |
| Power supply terminal, 24 V DC  | KL/KS9100 | T4 | -25...+60°C | 24Vdc       | --- |
| Power supply terminal with diagnostics, 24 V DC                                   | KL/KS9110 | T4 | -25...+60°C | 24Vdc       | --- |
| Potential distribution terminal with 2 clamps per power contact                   | KL/KS9180 | T4 | -25...+60°C | ---         | --- |
| HD Bus Terminal, 16-channel potential distribution, 8x 24V contact, 8x 0V contact | KL9184    | T4 | -25...+60°C | 24Vdc       | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|   |             |    |             |                          |       |
|---|-------------|----|-------------|--------------------------|-------|
| Potential distribution terminal with 4 clamps per power contact   | KL/KS9185   | T4 | -25...+60°C | ---                      | ---   |
| Potential distribution terminal, 8 x 24 V DC  | KL/KS9186   | T4 | -25...+60°C | 24Vdc                    | ---   |
| Potential distribution terminal, 8 x 0 V  | KL/KS9187   | T4 | -25...+60°C | ---                      | ---   |
| HD Bus Terminal, 16-channel potential distribution, 16x 24V contact   | KL9188      | T4 | -25...+60°C | 24Vdc                    | ---   |
| HD Bus Terminal, 16-channel potential distribution, 16x 0v contact  | KL9189      | T4 | -25...+60°C | ---                      | ---   |
| Power supply terminal for any voltage up to 230 V, without LED  | KL/KS9190   | T4 | -25...+60°C | Up to 230V               | ---   |
| Shield terminal, potential distribution terminal with connection to earth   | KL/KS9195   | T4 | -25...+60°C | ---                      | ---   |
| Power supply terminal with fuse, 24 V DC  | KL9200      | T4 | -25...+60°C | 24Vdc                    | ---   |
| Power supply terminal with fuse and diagnostics, 24 V DC  | KL9210      | T4 | -25...+60°C | 24Vdc                    | ---   |
| Power supply terminal with fuse, 125 V AC...230 V AC  | KL9250      | T4 | -25...+60°C | 125Vac...230Vac          | ---   |
| Power supply terminal with fuse and diagnostics, 230 V AC   | KL9260      | T4 | -25...+60°C | 230Vac                   | ---   |
| Power supply terminal, up to 400 V AC   | KL9290      | T4 | -25...+60°C | Up to 400Vac             | ---   |
| Diode array terminal, 4 potential-free diodes, 1 A, to 1000 V AC/DC   | KL/KS9300   | T4 | -25...+60°C | ---                      | ---   |
| Diode array terminal, 7 diodes (common cathode), 1 A, to 1000 V AC/DC   | KL/KS9301   | T4 | -25...+60°C | ---                      | ---   |
| Diode array terminal, 7 diodes (common anode), 1 A, to 1000 V AC/DC   | KL/KS9302   | T4 | -25...+60°C | ---                      | ---   |
| Power supply unit terminal for the K-bus, 24 V DC, 2 A  | KL/KS9400   | T4 | -25...+60°C | 24Vdc/2A                 | ---   |
| Power supply unit terminal 24 V DC, output 5 V DC, 0,5 A  | KL/KS9505   | T4 | -25...+60°C | 24Vdc, output 5Vdc/0,5A  | ---   |
| Power supply unit terminal 24 V DC, output 8 V DC, 0,5 A  | KL/KS9508   | T4 | -25...+60°C | 24Vdc, output 8Vdc/0,5A  | ---   |
| Power supply unit terminal 24 V DC, output 10 V DC, 0,5 A   | KL/KS9510   | T4 | -25...+60°C | 24Vdc, output 10Vdc/0,5A | ---   |
| Power supply unit terminal 24 V DC, output 12 V DC, 0,5 A   | KL/KS9512   | T4 | -25...+60°C | 24Vdc, output 12Vdc/0,5A | ---   |
| Power supply unit terminal 24 V DC, output 15 V DC, 0,5 A   | KL/KS9515   | T4 | -25...+60°C | 24Vdc, output 15Vdc/0,5A | ---   |
| Surge filter field supply   | KL/KS9540   | T4 | -25...+60°C | ---                      | ---   |
| Surge filter system and field supply  | KL/KS9550   | T4 | -25...+60°C | ---                      | ---   |
| Power supply unit terminal 24V DC, 0,1A   | KL/KS9560   | T4 | -25...+60°C | 24Vdc/0,1A               | ---   |
| Buffer capacitor terminal   | KL/KS9570   | T4 | -25...+60°C | ---                      | ---   |
| EtherCAT "Economy plus" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)                           | BK1120      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)                                | BK1150      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT "Compact" Coupler between EtherCAT Terminals (E-bus) and Bus Terminals (K-bus), adapter terminal           | BK1250      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT Coupler  | EK1100      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT Coupler with ID switch for E-bus terminals (ELxxxx)  | EK1101      | T4 | -25...+60°C | ---                      | 24Vdc |
| 2-port EtherCAT junction  | EK1122      | T4 | -25...+60°C | ---                      | 24Vdc |
| 2-port EtherCAT junction with M8 connection   | EK1122-0008 | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT extension for EK1000 or EK1100   | EK1110      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT Coupler with ID switch, multimode fibre optic for E-bus terminals (ELxxxx)                                 | EK1501      | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT Coupler with ID switch, singlemode fibre optic for E-bus terminals (ELxxxx)                                | EK1501-0010 | T4 | -25...+60°C | ---                      | 24Vdc |
| EtherCAT Coupler with ID switch, media converter (multimode fibre optic IN, RJ45 OUT), for E-bus terminals (ELxxxx) | EK1501-0100 | T4 | -25...+60°C | ---                      | 24Vdc |
| 1-port EtherCAT multi-mode fibre optic junction   | EK1521      | T4 | -25...+60°C | ---                      | 24Vdc |
| PROFIBUS Bus Coupler  | EK3100      | T4 | -25...+60°C | ---                      | 24Vdc |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|   |           |    |             |       |       |
|---|-----------|----|-------------|-------|-------|
| CANopen Bus Coupler   | EK5100    | T4 | -25...+60°C | ---   | 24Vdc |
| DeviceNet Bus Coupler   | EK5200    | T4 | -25...+60°C | ---   | 24Vdc |
| Ethernet Bus Coupler  | EK9000    | T4 | -25...+60°C | ---   | 24Vdc |
| PROFINET RT Bus Coupler   | EK9300    | T4 | -25...+60°C | ---   | 24Vdc |
| PROFINET IRT Bus Coupler  | EK9310    | T4 | -25...+60°C | ---   | 24Vdc |
| EtherNet/IP Bus Coupler   | EK9500    | T4 | -25...+60°C | ---   | 24Vdc |
| SERCOS III Bus Coupler  | EK9700    | T4 | -25...+60°C | ---   | 24Vdc |
| EtherCAT Coupler with ID switch and diagnostics   | EKM1101   | T4 | -25...+60°C | ---   | 24Vdc |
| 2-channel digital input terminal 24 V DC, 3 ms  | EL/ES1002 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, 3 ms  | EL/ES1004 | T4 | -25...+60°C | 24Vdc | ---   |
| 8-channel digital input terminal 24 V DC, 3 ms  | EL/ES1008 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC, filter 10 µs, 3-wire system   | E/ESL1012 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, filter 10 µs, 2-wire system   | EL/ES1014 | T4 | -25...+60°C | 24Vdc | ---   |
| 8-channel digital input terminal 24 V DC, filter 10 µs, 1-wire system   | EL/ES1018 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC for type 2 sensors, IEC 61131-2, filter 3.0 ms, 2-wire system        | EL/ES1024 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC for type 1 sensors, IEC 61131-2, potential-free inputs, filter 10 µs | EL/ES1034 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal NAMUR  | EL/ES1052 | T4 | -25...+60°C | ---   | ---   |
| 4-channel digital input terminal NAMUR  | EL/ES1054 | T4 | -25...+60°C | ---   | ---   |
| 4-channel digital input terminal 24 V DC, negative switching, filter 3.0 ms, 2-wire system                    | EL/ES1084 | T4 | -25...+60°C | 24Vdc | ---   |
| 8-channel digital input terminal 24 V DC, negative switching, filter 3.0 ms, 1-wire system                    | EL/ES1088 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, negative switching, filter 10 µs, 2-wire system                     | EL/ES1094 | T4 | -25...+60°C | 24Vdc | ---   |
| 8-channel digital input terminal 24 V DC, negative switching, filter 10 µs, 1-wire system                     | EL/ES1098 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, filter 3.0 ms, 2 inputs 3-wire system, 2 inputs 1-wire system       | EL/ES1104 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 24 V DC, filter 10 µs, 2 inputs 3-wire system, 2 inputs 1-wire system        | EL/ES1114 | T4 | -25...+60°C | 24Vdc | ---   |
| 4-channel digital input terminal 5 V DC, filter 10 µs, 2 inputs 3-wire system, 2 inputs 1-wire system         | EL/ES1124 | T4 | -25...+60°C | 5Vdc  | ---   |
| 4-channel digital input terminal 48 V DC, filter 10 µs, 2 inputs 3-wire system, 2 inputs 1-wire system        | EL/ES1134 | T4 | -25...+60°C | 48Vdc | ---   |
| 4-channel digital input terminal 12 V DC, filter 10 µs, 2 inputs 3-wire system, 2 inputs 1-wire system        | EL/ES1144 | T4 | -25...+60°C | 12Vdc | ---   |
| 2-channel digital input terminal 24 V DC, TON/TOFF 1 µs   | EL/ES1202 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal 24 V DC, filter 1 µs, with time stamp  | EL/ES1252 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel digital input terminal with oversampling  | EL/ES1262 | T4 | -25...+60°C | 24Vdc | ---   |
| Up/down counter 24 V DC, 100 kHz, 32 bit counter depth  | EL/ES1502 | T4 | -25...+60°C | 24Vdc | ---   |
| 2-channel, up/down counter, 24 V DC, 1 kHz, 16 bit counter  | EL/ES1512 | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminals, 4-channel digital input 24 V DC, 3-wire connection, filter 3.0 ms                      | EL1804    | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminal, 8-channel digital input 24 V DC, 2-wire connection                                      | EL1808    | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminals, 16-channel digital input 24 V DC, filter 3.0 ms  | EL1809    | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminals, 4-channel digital input 24 V DC, 3-wire connection, filter 10 µs                       | EL1814    | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminals, 16-channel digital input 24 V DC, filter 10 µs   | EL1819    | T4 | -25...+60°C | 24Vdc | ---   |
| HD EtherCAT Terminal, 8-channel digital input + 8-channel digital output 24 V DC                              | EL1859    | T4 | -25...+60°C | 24Vdc | ---   |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |                |    |             |                      |     |
|--|----------------|----|-------------|----------------------|-----|
| EtherCAT Terminal, 16-channel digital input, 24 V DC, 3 ms, flat-ribbon cable                          | EL1862         | T4 | -25...+60°C | 24Vdc                | --- |
| EtherCAT Terminal, 16-channel digital input, 24 V DC, 3 ms, ground switching, flat-ribbon cable        | EL1862-0010    | T4 | -25...+60°C | 24Vdc                | --- |
| EtherCAT Terminal, 16-channel digital input, 24 V DC, 10 µs, flat-ribbon cable                         | EL1872         | T4 | -25...+60°C | 24Vdc                | --- |
| HD EtherCAT Terminal, 16-channel digital input 24 V DC, 0 V (ground) switching                         | EL1889         | T4 | -25...+60°C | 24Vdc                | --- |
| 4-channel digital input terminal, TwinSAFE, 24 V DC  | EL1904         | T4 | -25...+60°C | 24Vdc                | --- |
| 8-channel digital input terminal, TwinSAFE, 24 V DC, TwinSAFE Logic                                    | EL1918         | T4 | -25...+60°C | 24Vdc                | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A, 3-wire system  | EL/ES2002      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 4-channel digital output terminal 24 V DC, 0.5 A, 2-wire system  | EL/ES2004      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 8-channel digital output terminal 24 V DC, 0.5 A   | EL/ES2008      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 4-channel digital output terminal 24 V DC, 0.5 A, with diagnostics                                     | EL2014         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 2-channel digital output terminal 24 V DC, 2 A   | EL/ES2022      | T4 | -25...+60°C | 24Vdc/2A             | --- |
| 4-channel digital output terminal 24 V DC, 2 A, 2-wire system  | EL/ES2024      | T4 | -25...+60°C | 24Vdc/2A             | --- |
| 4-channel digital output terminal 12 V DC, 2 A, 2-wire system  | EL2024-0010    | T4 | -25...+60°C | 12Vdc/2A             | --- |
| 2-channel digital output terminal 24 V DC, 2 A, with diagnostics, 3-wire system                        | EL/ES2032      | T4 | -25...+60°C | 24Vdc/2A             | --- |
| 4-channel digital output terminal 24 V DC, 2 A, with diagnostics, 2-wire system                        | EL/ES2034      | T4 | -25...+60°C | 24Vdc/2A             | --- |
| 4-channel digital output terminal 24 V DC, negative switching, 0.5 A, 2-wire system                    | EL/ES2084      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 8-channel digital output terminal 24 V DC, 0.5 A, total current 3 A, negative switching, 1-wire system | EL/ES2088      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 4-channel digital output terminal 5V DC  | EL/ES2124      | T4 | -25...+60°C | 5Vdc                 | --- |
| 2-channel digital output terminal 24 V DC, TON/TOFF 1 µs, push-pull outputs                            | EL/ES2202      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A, 4-wire system, high-speed outputs with time stamp    | EL/ES2252      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 2-channel digital output terminal 24 V DC, 0.5 A, 4-wire system, high-speed outputs with oversampling  | EL/ES2262      | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 2-channel pulse width output terminal 24 V DC, 1 A, 4-wire system                                      | EL/ES2502      | T4 | -25...+60°C | 24Vdc/1A             | --- |
| 1-channel pulse train output terminal, 2 RS422 outputs (5 V level)                                     | EL/ES2521      | T4 | -25...+60°C | 24Vdc                | --- |
| 1-channel pulse train output terminal, 2 outputs 24 V DC (supplied from an external source)            | EL/ES2521-0024 | T4 | -25...+60°C | 24Vdc                | --- |
| 2-channel pulse width current terminals 24 V DC  | EL/ES2535-0002 | T4 | -25...+60°C | 24Vdc/±2A            | --- |
| 2-channel pulse width current terminal 24 V DC, 5 A  | EL2535-0005    | T4 | -25...+60°C | 24Vdc/±5A            | --- |
| 2-channel pulse width current terminal 24 V DC, 50 mA  | EL2535-0050    | T4 | -25...+60°C | 24Vdc/±50mA          | --- |
| EtherCAT Terminal, 2-channel PWM output, 12...48 V DC, 3 A, current-controlled                         | EL2535-0103    | T4 | -25...+60°C | 12Vdc...48Vdc/3A     | --- |
| 4-channel digital output terminal 30 V AC/DC, 2 A, solid state   | EL2794         | T4 | -25...+60°C | 30Vac/2A<br>30Vdc/2A | --- |
| HD EtherCAT Terminal, 8-channel digital output 24 V DC, 0.5 A  | EL2808         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| HD EtherCAT Terminal, 16-channel digital output 24 V DC, 0.5 A   | EL2809         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| HD EtherCAT Terminal, 16-channel digital output 24 V DC, 0.5 A, 0 V (ground) switching                 | EL2889         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| EtherCAT Terminal, 16-channel digital output, 24 V DC, 0.5 A, flat-ribbon cable                        | EL2872         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| EtherCAT Terminal, 16-channel digital output, 24 V DC, 0.5 A, ground switching, flat-ribbon cable      | EL2872-0010    | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 4-channel digital output terminal, TwinSAFE, 24 V DC, 0.5 A  | EL2904         | T4 | -25...+60°C | 24Vdc/0,5A           | --- |
| 1-channel analog input terminal -10 V...+10 V, single-ended, 12 bit                                    | EL/ES3001      | T4 | -25...+60°C | -10V...+10V          | --- |

### Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |             |    |             |             |     |
|--|-------------|----|-------------|-------------|-----|
| 2-channel analog input terminal -10 V...+10 V, single-ended, 12 bit                    | EL/ES3002   | T4 | -25...+60°C | -10V...+10V | --- |
| 4-channel analog input terminal -10 V...+10 V, single-ended, 12 bit, 4 x 2-wire system | EL/ES3004   | T4 | -25...+60°C | -10V...+10V | --- |
| 8-channel analog input terminal -10 V...+10 V, single-ended, 12 bit, 1-wire system     | EL/ES3008   | T4 | -25...+60°C | -10V...+10V | --- |
| 1-channel analog input terminal 0...20 mA, differential input, 12 bit                  | EL/ES3011   | T4 | -25...+60°C | 0...20mA    | --- |
| 2-channel analog input terminal 0...20 mA, differential input, 12 bit                  | EL/ES3012   | T4 | -25...+60°C | 0...20mA    | --- |
| 4-channel analog input terminal 0...20 mA, differential input, 12 bit                  | EL/ES3014   | T4 | -25...+60°C | 0...20mA    | --- |
| 1-channel analog input terminal 4...20 mA, differential input, 12 bit                  | EL/ES3021   | T4 | -25...+60°C | 4...20mA    | --- |
| 2-channel analog input terminal 4...20 mA, differential input, 12 bit                  | EL/ES3022   | T4 | -25...+60°C | 4...20mA    | --- |
| 4-channel analog input terminal 4...20 mA, differential input, 12 bit                  | EL/ES3024   | T4 | -25...+60°C | 4...20mA    | --- |
| 1-channel analog supply terminal 0...20 mA, single-ended, 12 bit                       | EL/ES3041   | T4 | -25...+60°C | 0...20mA    | --- |
| 2-channel analog supply terminal 0...20 mA, single-ended, 12 bit                       | EL/ES3042   | T4 | -25...+60°C | 0...20mA    | --- |
| 4-channel analog input terminal 0...20 mA, single-ended, 12 bit                        | EL/ES3044   | T4 | -25...+60°C | 0...20mA    | --- |
| 8-channel analog input terminal 0...20 mA, single-ended, 12 bit, 1-wire system         | EL/ES3048   | T4 | -25...+60°C | 0...20mA    | --- |
| 1-channel analog supply terminal 4...20 mA, single-ended, 12 bit                       | EL/ES3051   | T4 | -25...+60°C | 4...20mA    | --- |
| 2-channel analog supply terminal 4...20 mA, single-ended, 12 bit                       | EL/ES3052   | T4 | -25...+60°C | 4...20mA    | --- |
| 4-channel analog input terminal 4...20 mA, single-ended, 12 bit, 4 x 2-wire system     | EL/ES3054   | T4 | -25...+60°C | 4...20mA    | --- |
| 8-channel analog input terminal 4...20 mA, single-ended, 12 bit, 1-wire system         | EL/ES3058   | T4 | -25...+60°C | 4...20mA    | --- |
| 1-channel analog input terminal 0...10 V, single-ended, 12 bit                         | EL/ES3061   | T4 | -25...+60°C | 0...10V     | --- |
| 2-channel analog input terminal 0...10 V, single-ended, 12 bit                         | EL/ES3062   | T4 | -25...+60°C | 0...10V     | --- |
| 2-channel analog input terminal 0...30 V, single-ended, 12 bit                         | EL3062-0030 | T4 | -25...+60°C | 0...30V     | --- |
| 4-channel analog input terminal 0...10 V, single-ended, 12 bit, 4 x 2-wire system      | EL/ES3064   | T4 | -25...+60°C | 0...10V     | --- |
| 8-channel analog input terminal 0...10 V, single-ended, 12 bit, 1-wire system          | EL/ES3068   | T4 | -25...+60°C | 0...10V     | --- |
| 1-channel analog input terminal -10 V...+10 V, differential input, 16 bit              | EL/ES3101   | T4 | -25...+60°C | -10V...+10V | --- |
| 2-channel analog input terminal -10 V...+10 V, differential input, 16 bit              | EL/ES3102   | T4 | -25...+60°C | -10V...+10V | --- |
| 4-channel analog input terminal -10 V...+10 V, differential input, 16 bit              | EL/ES3104   | T4 | -25...+60°C | -10V...+10V | --- |
| 1-channel analog input terminal 0...20 mA, differential input, 16 bit                  | EL/ES3111   | T4 | -25...+60°C | 0...20mA    | --- |
| 2-channel analog input terminal 0...20 mA, differential input, 16 bit                  | EL/ES3112   | T4 | -25...+60°C | 0...20mA    | --- |
| 4-channel analog input terminal 0...20 mA, differential input, 16 bit                  | EL/ES3114   | T4 | -25...+60°C | 0...20mA    | --- |
| 1-channel analog input terminal 4...20 mA, differential input, 16 bit                  | EL/ES3121   | T4 | -25...+60°C | 4...20mA    | --- |
| 2-channel analog input terminal 4...20 mA, differential input, 16 bit                  | EL/ES3122   | T4 | -25...+60°C | 4...20mA    | --- |
| 4-channel analog input terminal 4...20 mA, differential input, 16 bit                  | EL/ES3124   | T4 | -25...+60°C | 4...20mA    | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|   |             |    |             |                                  |     |
|---|-------------|----|-------------|----------------------------------|-----|
| 1-channel analog supply terminal 0...20 mA, single-ended, 16 bit  | EL/ES3141   | T4 | -25...+60°C | 0...20mA                         | --- |
| 2-channel analog supply terminal 0...20 mA, single-ended, 16 bit  | EL/ES3142   | T4 | -25...+60°C | 0...20mA                         | --- |
| 4-channel analog input terminal 0...20 mA, single-ended, 16 bit, 4 x 2-wire system                                  | EL/ES3144   | T4 | -25...+60°C | 0...20mA                         | --- |
| 1-channel analog supply terminal 4...20 mA, single-ended, 16 bit  | EL/ES3151   | T4 | -25...+60°C | 4...20mA                         | --- |
| 2-channel analog supply terminal 4...20 mA, single-ended, 16 bit  | EL/ES3152   | T4 | -25...+60°C | 4...20mA                         | --- |
| 4-channel analog input terminal 4...20 mA, single-ended, 16 bit, 4 x 2-wire system                                  | EL/ES3154   | T4 | -25...+60°C | 4...20mA                         | --- |
| 1-channel analog input terminal 0...10 V, single-ended, 16 bit  | EL/ES3161   | T4 | -25...+60°C | 0...10V                          | --- |
| 2-channel analog input terminal 0...10 V, single-ended, 16 bit  | EL/ES3162   | T4 | -25...+60°C | 0...10V                          | --- |
| 4-channel analog input terminal 0...10 V, single-ended, 16 bit, 4 x 2-wire system                                   | EL/ES3164   | T4 | -25...+60°C | 0...10V                          | --- |
| 4-channel analog input, -10/0...+10 V, -20/0/+4...+20 mA, 16 bit  | EL3174      | T4 | -25...+60°C | -10/0...+10 V, -20/0/+4...+20 mA | --- |
| 4-channel analog input, -10/0...+10 V, -20/0/+4...+20 mA, electrically isolated, 16 bit                             | EL3174-0002 | T4 | -25...+60°C | 10/0...+10 V, -20/0/+4...+20 mA  | --- |
| 4-channel analog input terminal, -3...+3 V, -20/0/+4...+20 mA, electrically isolated, 16 bit                        | EL3174-0032 | T4 | -25...+60°C | -3...+3 V, -20/0/+4...+20 mA     | --- |
| 2-channel analog input terminal 4...20 mA, single-ended, 16 bit, HART   | EL/ES3182   | T4 | -25...+60°C | 4...20mA                         | --- |
| 1-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 4-wire system                                  | EL/ES3201   | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| 1-channel input terminals PT100 (RTD) for 2-, 3- or 4-wire connection, high-precision                               | EL3201-0010 | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| 1-channel input terminals PT100 (RTD) for 2-, 3- or 4-wire connection, high-precision, with calibration certificate | EL3201-0020 | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| 2-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 2-, 3-wire system                              | EL/ES3202   | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| 2-channel input terminal PT100 (RTD) for 4-wire connection, high-precision  | EL3202-0010 | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| 4-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 2-wire system                                  | EL/ES3204   | T4 | -25...+60°C | PT100 (RTD)                      | --- |
| HD EtherCAT Terminal, 5-channel input, potentiometer measurement with sensor supply                                 | EL3255      | T4 | -25...+60°C | 0...10V                          | --- |
| 1-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit                       | EL3311      | T4 | -25...+60°C | Thermocouple                     | --- |
| 2-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit                       | EL3312      | T4 | -25...+60°C | Thermocouple                     | --- |
| 4-channel thermocouple input terminal with open-circuit recognition   | EL3314      | T4 | -25...+60°C | Thermocouple                     | --- |
| HD EtherCAT Terminal, 8-channel thermocouple input with open-circuit recognition                                    | EL3318      | T4 | -25...+60°C | Thermocouple                     | --- |
| 1-channel resistor bridge input terminal (strain gauge), 16 bit   | EL/ES3351   | T4 | -25...+60°C | Resistor bridge                  | --- |
| 1-channel input terminal, accurate resistance bridge evaluation, with self-calibration, 16 bit                      | EL/ES3356   | T4 | -25...+60°C | Resistor bridge                  | --- |
| 1-channel precise load cell analysis (resistor bridge), 24 bit  | EL3356-0010 | T4 | -25...+60°C | Resistor bridge                  | --- |
| 2-channel analog input terminal -10...+10V, differential inputs, 24 bit   | EL/ES3602   | T4 | -25...+60°C | -10V...+10V                      | --- |
| 2-channel analog input terminal -75...+75 mV, differential input, 24 bit  | EL3602-0010 | T4 | -25...+60°C | -75mV...+75mV                    | --- |
| 2-channel analog input terminal 0...20 mA, differential input, 24 bit   | EL/ES3612   | T4 | -25...+60°C | 0...20mA                         | --- |

### Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|  |                |    |             |                             |     |
|--|----------------|----|-------------|-----------------------------|-----|
| 2-channel analog input terminal, $\pm 5$ V, for Condition Monitoring (IEPE)  | EL3632         | T4 | -25...+60°C |                             | --- |
| 2-channel resistance measurement terminal<br>10 m $\Omega$ ...10 M $\Omega$ , high-precision   | EL3692         | T4 | -25...+60°C | Resistance measurement      | --- |
| 2-channel analog input terminal -10...+10 V with oversampling  | EL/ES3702      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 2-channel analog input terminal 0...20 mA, differential inputs, 16 bit, oversampling   | EL/ES3742      | T4 | -25...+60°C | 0...20mA                    | --- |
| 1-channel analog input terminal, 24 bit, oversampling, parameterisable:<br>$\pm 30/10/5/2.5/1.25$ V, $\pm 640/320/160/80/40/20/10/5$ mV, 0...5/10 V, $\pm 20$ mA, 0/4...20 mA, NAMUR NE43, 0...5 k $\Omega$ , RTD PT100/PT1000, Ni, KTY, $\frac{1}{4}$ bridge (350 $\Omega$ + 120 $\Omega$ ), $\frac{1}{2}$ bridge ( $\pm 16$ mV/V), full bridge ( $\pm 32$ mV/V), potentiometer $\geq 1$ k $\Omega$ | EL3751         | T4 | -25...+60°C | Various signal level inputs | --- |
| 1-channel analog output terminal 0...10 V, 12 bit  | EL/ES4001      | T4 | -25...+60°C | 0...10V                     | --- |
| 2-channel analog output terminal 0...10 V, 12 bit  | EL/ES4002      | T4 | -25...+60°C | 0...10V                     | --- |
| 4-channel analog output terminal 0...10 V, 12 bit  | EL/ES4004      | T4 | -25...+60°C | 0...10V                     | --- |
| 8-channel analog output terminal 0...10 V, 12 bit  | EL/ES4008      | T4 | -25...+60°C | 0...10V                     | --- |
| 1-channel analog output terminal 0...20 mA, 12 bit   | EL/ES4011      | T4 | -25...+60°C | 0...20mA                    | --- |
| 2-channel analog output terminal 0...20 mA, 12 bit   | EL/ES4012      | T4 | -25...+60°C | 0...20mA                    | --- |
| 4-channel analog output terminal 0...20 mA, 12 bit   | EL/ES4014      | T4 | -25...+60°C | 0...20mA                    | --- |
| 8-channel analog output terminal 0...20 mA, 12 bit, 1-wire system  | EL/ES4018      | T4 | -25...+60°C | 0...20mA                    | --- |
| 1-channel analog output terminal 4...20 mA, 12 bit   | EL/ES4021      | T4 | -25...+60°C | 4...20mA                    | --- |
| 2-channel analog output terminal 4...20 mA, 12 bit   | EL/ES4022      | T4 | -25...+60°C | 4...20mA                    | --- |
| 4-channel analog output terminal 4...20 mA, 12 bit, 4 x 2-wire system  | EL/ES4024      | T4 | -25...+60°C | 4...20mA                    | --- |
| 8-channel analog output terminal 4...20 mA, 12 bit, 1-wire system  | EL/ES4028      | T4 | -25...+60°C | 4...20mA                    | --- |
| 1-channel analog output terminal -10 V...+10 V, 12 bit   | EL/ES4031      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 2-channel analog output terminal -10 V...+10 V, 12 bit   | EL/ES4032      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 4-channel analog output terminal -10 V...+10 V, 12 bit, 4 x 2-wire system  | EL/ES4034      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 8-channel analog output terminal -10 V...+10 V, 12 bit, 1-wire system  | EL/ES4038      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 2-channel analog output terminal 0...10 V, 16 bit  | EL/ES4102      | T4 | -25...+60°C | 0...10V                     | --- |
| 4-channel analog output terminal 0...10 V, 16 bit  | EL/ES4104      | T4 | -25...+60°C | 0...10V                     | --- |
| 2-channel analog output terminal 0...20 mA, 16 bit   | EL/ES4112      | T4 | -25...+60°C | 0...20mA                    | --- |
| 2-channel analog output terminal -10...+10 mA, 16 bit  | EL/ES4112-0010 | T4 | -25...+60°C | -10mA...+10mA               | --- |
| 4-channel analog output terminal 0...20 mA, 16 bit   | EL/ES4114      | T4 | -25...+60°C | 0...20mA                    | --- |
| 2-channel analog output terminal 4...20 mA, 16 bit   | EL/ES4122      | T4 | -25...+60°C | 4...20mA                    | --- |
| 4-channel analog output terminal 4...20 mA, 16 bit   | EL/ES4124      | T4 | -25...+60°C | 4...20mA                    | --- |
| 2-channel analog output terminal -10 V...+10 V, 16 bit   | EL/ES4132      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 4-channel analog output terminal -10 V...+10 V, 16 bit   | EL/ES4134      | T4 | -25...+60°C | -10V...+10V                 | --- |
| 2-channel analog output terminal 0...20 mA with oversampling   | EL/ES4712      | T4 | -25...+60°C | 0...20mA                    | --- |
| 2-channel analog output terminal -10...+10 V with oversampling   | EL/ES4732      | T4 | -25...+60°C | -10V...+10V                 | --- |
| SSI encoder interface  | EL/ES5001      | T4 | -25...+60°C | ---                         | --- |
| 1-channel SSI monitor terminal   | EL5001-0011    | T4 | -25...+60°C | ---                         | --- |
| 2-channel SSI encoder interface  | EL/ES5002      | T4 | -25...+60°C | ---                         | --- |
| 1-channel SinCos encoder interface, 1 VSS  | EL/ES5021      | T4 | -25...+60°C | ---                         | --- |
| Incremental encoder interface with differential input, 16 bit  | EL/ES5101      | T4 | -25...+60°C | ---                         | --- |
| 1-channel incremental encoder interface, 32 bit  | EL/ES5151      | T4 | -25...+60°C | ---                         | --- |
| 2-channel incremental encoder interface, 32 bit  | EL/ES5152      | T4 | -25...+60°C | ---                         | --- |
| Serial interface RS232   | EL/ES6001      | T4 | -25...+60°C | ---                         | --- |
| 2-channel serial interfaces RS232, D-sub connection  | EL6002         | T4 | -25...+60°C | ---                         | --- |
| Serial interface RS422/RS485   | EL/ES6021      | T4 | -25...+60°C | ---                         | --- |
| Serial Communication terminal, 1 channel, RS485, timestamp receive   | EL6021-1001    | T4 | -25...+60°C | ---                         | --- |

## Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X

|   |             |    |             |                          |       |
|---|-------------|----|-------------|--------------------------|-------|
| 2-channel serial interfaces RS422/RS485, D-sub connection   | EL6022      | T4 | -25...+60°C | ---                      | ---   |
| License key terminal for TwinCAT 3.1  | EL6070      | T4 | -25...+60°C | ---                      | ---   |
| EtherCAT memory terminal 128 kbyte  | EL6080      | T4 | -25...+60°C | ---                      | ---   |
| IO-Link terminal  | EL/ES6224   | T4 | -25...+60°C | ---                      | ---   |
| EtherCAT Terminal, 1-channel communication interface, ASi, master   | EL/ES6201   | T4 | -25...+60°C | ---                      | ---   |
| Ethernet switch port terminal   | EL6601      | T4 | -25...+60°C | ---                      | ---   |
| 4-port Ethernet Switch terminal   | EL6614      | T4 | -25...+60°C | ---                      | ---   |
| PROFINET IO controller terminal   | EL6631      | T4 | -25...+60°C | ---                      | ---   |
| ROFINET IO device terminal  | EL6631-0010 | T4 | -25...+60°C | ---                      | ---   |
| PROFINET IRT controller   | EL6632      | T4 | -25...+60°C | ---                      | ---   |
| IEEE 1588 external synchronisation interface  | EL6688      | T4 | -25...+60°C | ---                      | ---   |
| EtherCAT bridge terminal  | EL6692      | T4 | -25...+60°C | ---                      | 24Vdc |
| Lightbus master terminal  | EL6720      | T4 | -25...+60°C | ---                      | ---   |
| PROFIBUS master terminal  | EL6731      | T4 | -25...+60°C | ---                      | ---   |
| PROFIBUS slave terminal   | EL6731-0010 | T4 | -25...+60°C | ---                      | ---   |
| Interbus slave terminal   | EL6740      | T4 | -25...+60°C | ---                      | ---   |
| CANopen master terminal   | EL6751      | T4 | -25...+60°C | ---                      | ---   |
| CANopen slave terminal  | EL6751-0010 | T4 | -25...+60°C | ---                      | ---   |
| DeviceNet master terminal   | EL6752      | T4 | -25...+60°C | ---                      | ---   |
| DeviceNet slave terminal  | EL6752-0010 | T4 | -25...+60°C | ---                      | ---   |
| DMX master terminal   | EL/ES6851   | T4 | -25...+60°C | ---                      | ---   |
| TwinSAFE Logic Terminal   | EL6900      | T4 | -25...+60°C | ---                      | ---   |
| EtherCAT Terminal communication interface, TwinSAFE Logic   | EL6910      | T4 | -25...+60°C | ---                      | ---   |
| E-bus end terminal  | EL9010      | T4 | -25...+60°C | ---                      | ---   |
| Bus end cap   | EL9011      | T4 | -25...+60°C | ---                      | ---   |
| Isolation terminal  | EL9080      | T4 | -25...+60°C | ---                      | ---   |
| Passive potential feed terminal, 24 V DC  | EL/ES9100   | T4 | -25...+60°C | 24Vdc/10A                | ---   |
| Power supply terminal with diagnostics, 24 V DC   | EL/ES9110   | T4 | -25...+60°C | 24Vdc                    | ---   |
| Power supply terminal, 230 V AC   | KL/KS9150   | T4 | -25...+60°C | 230Vac                   | ---   |
| Power supply terminal with diagnostics, 230 V AC  | KL/KS9160   | T4 | -25...+60°C | 230Vac                   | ---   |
| Potential distribution terminal with 2 clamps per power contact   | EL/ES9180   | T4 | -25...+60°C | ---                      | ---   |
| Potential distribution terminal, 8 x 2 potentials   | EL9181      | T4 | -25...+60°C | ---                      | ---   |
| HD Bus Terminal, 16-channel potential distribution, 8x 24V contact, 8x 0V contact                             | EL9184      | T4 | -25...+60°C | 24Vdc                    | ---   |
| Potential distribution terminal with 4 clamps per power contact   | EL/ES9185   | T4 | -25...+60°C | ---                      | ---   |
| Potential distribution terminal, 8 x 24 V DC  | EL/ES9186   | T4 | -25...+60°C | 24Vdc                    | ---   |
| Potential distribution terminal, 8 x 0 V  | EL/ES9187   | T4 | -25...+60°C | ---                      | ---   |
| HD Bus Terminal, 16-channel potential distribution, 16x 24V contact   | EL9188      | T4 | -25...+60°C | 24Vdc                    | ---   |
| HD Bus Terminal, 16-channel potential distribution, 16x 0v contact  | EL9189      | T4 | -25...+60°C | ---                      | ---   |
| shield terminal   | EL/ES9195   | T4 | -25...+60°C | ---                      | ---   |
| Power supply terminal with fuse, 24 V DC  | EL9200      | T4 | -25...+60°C | 24Vdc                    | ---   |
| Power supply terminal with fuse and diagnostics, 24 V DC  | EL9210      | T4 | -25...+60°C | 24Vdc                    | ---   |
| Overcurrent protection terminal, 24 V DC, 2-channel, max. $\Sigma$ 10 A, adjustable, extended functionalities | EL9227-5500 | T4 | -25...+60°C | 24Vdc/10A                | ---   |
| Power supply terminal for E-bus, 24 V DC, 2 A   | EL/ES9400   | T4 | -25...+60°C | 24Vdc/2A                 | ---   |
| Power supply terminal for E-bus, 24 V DC, 2 A with diagnostics  | EL/ES9410   | T4 | -25...+60°C | 24Vdc/2A                 | ---   |
| Power supply unit terminal 24 V DC, output 5 V DC, 0.5 A  | EL/ES9505   | T4 | -25...+60°C | 24Vdc, output 5Vdc/0,5A  | ---   |
| Power supply unit terminal 24 V DC, output 8 V DC, 0.5 A  | EL/ES9508   | T4 | -25...+60°C | 24Vdc, output 8Vdc/0,5A  | ---   |
| Power supply unit terminal 24 V DC, output 10 V DC, 0.5 A   | EL/ES9510   | T4 | -25...+60°C | 24Vdc, output 10Vdc/0,5A | ---   |

**Annex 1 to NL/DEK/ExTR16.0109/07 and IECEx DEK 16.0078X**

|   |                |    |             |                          |     |
|---|----------------|----|-------------|--------------------------|-----|
| Power supply unit terminal 24 V DC, output 12 V DC, 0.5 A | EL/ES9512      | T4 | -25...+60°C | 24Vdc, output 12Vdc/0,5A | --- |
| Power supply unit terminal 24 V DC, output 15 V DC, 0.5 A | EL/ES9515      | T4 | -25...+60°C | 24Vdc, output 15Vdc/0,5A | --- |
| AS-Interface potential feed terminal with filter          | EL9520         | T4 | -25...+60°C | ---                      | --- |
| Surge filter field supply                                 | EL/ES9540      | T4 | -25...+60°C | ---                      | --- |
| System terminal, surge filter and field supply            | EL/ES9540-0010 | T4 | -25...+60°C | ---                      | --- |
| System terminal, surge filter system and field supply     | EL/ES9550      | T4 | -25...+60°C | ---                      | --- |
| Buffer capacitor terminal                                 | EL/ES9570      | T4 | -25...+60°C | ---                      | --- |