

# IL EC BK-PAC - Bus coupler



2702507

<https://www.phoenixcontact.com/us/products/2702507>

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Inline, Bus coupler, EtherCAT®, RJ45 jack, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including Inline connector and labeling field

## Product description

The bus coupler is intended for use within an EtherCAT® network and represents the link to the Inline I/O system. Up to 63 Inline devices can be connected to the bus coupler. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany. A corresponding ESI file is available for integrating the Inline station into the programming system. This file can be downloaded at: [www.phoenixcontact.net/product/2702507](http://www.phoenixcontact.net/product/2702507)

## Your advantages

- 2 RJ45 connections
- Automatic addressing
- Station mapped as a modular EtherCAT® device using a modular device profile (MDP)
- Acyclic data communication (mailbox protocols)
- SafetyBridge V3 supported
- Firmware can be updated

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2702507       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DR01          |
| Product key                          | DRI11E        |
| GTIN                                 | 4055626258683 |
| Weight per piece (including packing) | 178 g         |
| Weight per piece (excluding packing) | 168 g         |
| Customs tariff number                | 85176200      |
| Country of origin                    | DE            |

## Technical data

### Dimensions

|                     |  |  |
|---------------------|--|--|
| Dimensional drawing |  |  |
| Width               | 40 mm  |  |
| Height              | 119.4 mm   |  |
| Depth               | 71.5 mm  |  |
| Note on dimensions  | Housing dimensions   |  |

### Notes

#### Note on application

|                     |                         |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

### Interfaces

#### EtherCAT®

|                               |                                   |
|-------------------------------|-----------------------------------|
| Number of interfaces          | 2                                 |
| Connection method             | RJ45 jack                         |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission speed            | 100 Mbps (Full duplex)            |
| Transmission physics          | Ethernet in RJ45 twisted pair     |

#### Inline local bus

|                      |   |
|----------------------|---|
| Number of interfaces | 1   |
| Connection method    | Inline data jumper  |
| Transmission speed   | 500 kbps / 2 Mbps (automatic detection, no combined system) |

#### EtherCAT®

|                           |   |
|---------------------------|---|
| System-specific protocols | Mailbox protocols CAN application protocol over EtherCAT®<br>Mailbox protocols File access over EtherCAT® |
| Specification             | ETG.1000 V1.02  |

## System properties

#### System limits

|   |                       |
|---|-----------------------|
| Number of supported devices                                 | max. 63 (per station) |
| Number of local bus devices that can be connected           | max. 63               |
| Number of devices with parameter channel                    | max. 16               |
| Number of supported branch terminals with remote bus branch | 0                     |

## Module

|               |      |
|---------------|------|
| ID code (hex) | none |
|---------------|------|

## Product properties

|                      |   |
|----------------------|---|
| Product type         | I/O component   |
| Product family       | Inline  |
| Type                 | modular   |
| Mounting position    | any   |
| Scope of supply      | including Inline connector and labeling field             |
| Diagnostics messages | Messages via object 10F3 <sub>hex</sub> Diagnosis history |

## Insulation characteristics

|                      |                              |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree     | 2 (IEC 60664-1, EN 60664-1)  |

## Electrical properties

|   |       |
|---|-------|
| Maximum power dissipation for nominal condition | 3.6 W |
|---|-------|

Potentials: Bus coupler supply  $U_{BK}$ ; Communications power  $U_L$  (7.5 V) and the analog supply  $U_{ANA}$  (24 V) are generated from the bus coupler supply.

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC (via Inline connector)                                     |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw         | max. 0.9 A (with max. number of connected I/O terminal blocks)     |
|                      | typ. 50 mA (no local bus devices connected, as of HW 04)           |
|                      | typ. 70.6 mA (no local bus devices connected, up to HW 03)         |

## Potentials: Communications power ( $U_L$ )

|                |          |
|----------------|----------|
| Supply voltage | 7.5 V DC |
|----------------|----------|

## Potentials: Supply of analog modules ( $U_{ANA}$ )

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC  |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |

## Potentials: Main circuit supply ( $U_M$ )

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC (via Inline connector)                                     |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |

## Potentials: Segment circuit supply ( $U_S$ )

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC (via Inline connector)                                     |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |

## Electrical isolation/isolation of the voltage ranges

|   |                         |
|---|-------------------------|
| Test voltage: Ethernet interface 1 / Ethernet interface 2                   | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface 1 / logic ( $U_{BK}$ , $U_L$ , $U_{ANA}$ ) | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface 1 / I/O ( $U_M$ , $U_S$ )                  | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface 1 / functional ground                      | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface 2 / logic ( $U_{BK}$ , $U_L$ , $U_{ANA}$ ) | 1500 V AC, 50 Hz, 1 min |

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|   |                         |
|---|-------------------------|
| Test voltage: Ethernet interface 2 / I/O ( $U_M$ , $U_S$ )                                  | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface 2 / functional ground                                      | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Communications power ( $U_{BK}$ , $U_L$ , $U_{ANA}$ ) / I/O ( $U_M$ , $U_S$ ) | 500 V AC, 50 Hz, 1 min  |
| Test voltage: Communications power ( $U_{BK}$ , $U_L$ , $U_{ANA}$ ) / functional ground     | 500 V AC, 50 Hz, 1 min  |
| Test voltage: I/O ( $U_M$ , $U_S$ ) / functional ground                                     | 500 V AC, 50 Hz, 1 min  |

## Connection data

### Connection technology

|                 |                  |
|-----------------|------------------|
| Connection name | Inline connector |
|-----------------|------------------|

### Conductor connection

|                                  |  |
|----------------------------------|--|
| Connection method                | Spring-cage connection                       |
| Conductor cross-section rigid    | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section flexible | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section AWG      | 28 ... 16                                    |
| Stripping length                 | 8 mm   |

### Inline connector

|                                   |  |
|-----------------------------------|--|
| Connection method                 | Spring-cage connection                       |
| Conductor cross-section, rigid    | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section, flexible | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section AWG       | 28 ... 16                                    |
| Stripping length                  | 8 mm   |

## Environmental and real-life conditions

### Ambient conditions

|  |   |
|--|---|
| Ambient temperature (operation)          | -25 °C ... 55 °C                                  |
| Degree of protection                     | IP20  |
| Air pressure (operation)                 | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport)         | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Ambient temperature (storage/transport)  | -40 °C ... 85 °C                                  |
| Permissible humidity (operation)         | 10 % ... 95 % (non-condensing)                    |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing)                    |

## Standards and regulations

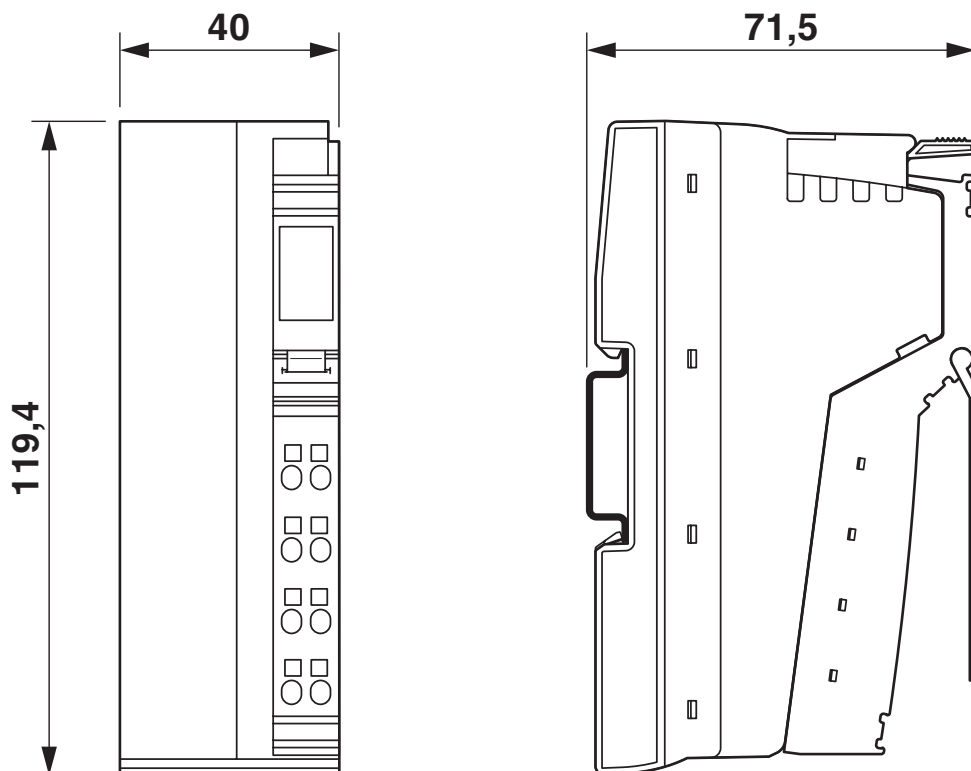
|                  |                                       |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

## Mounting

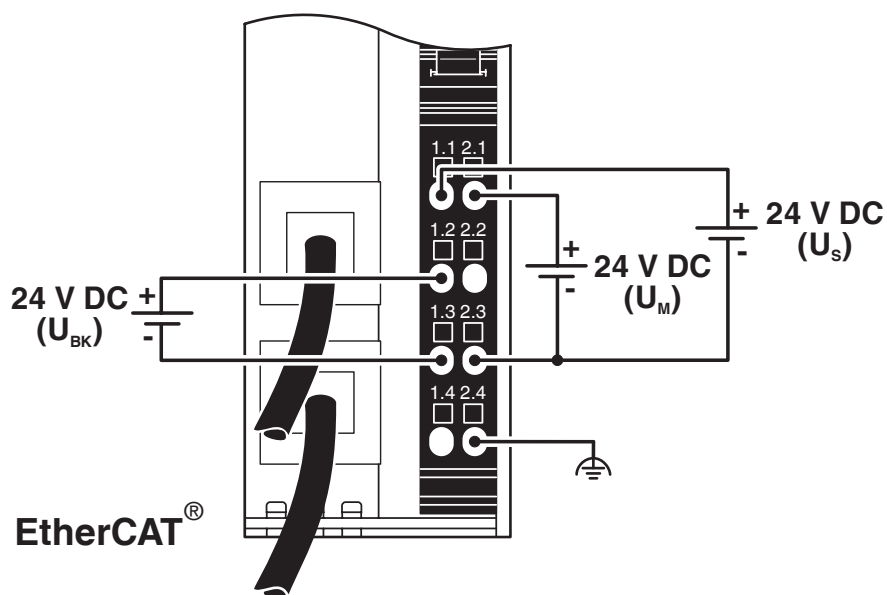
|                   |                   |
|-------------------|-------------------|
| Mounting type     | DIN rail mounting |
| Mounting position | any               |

## Drawings

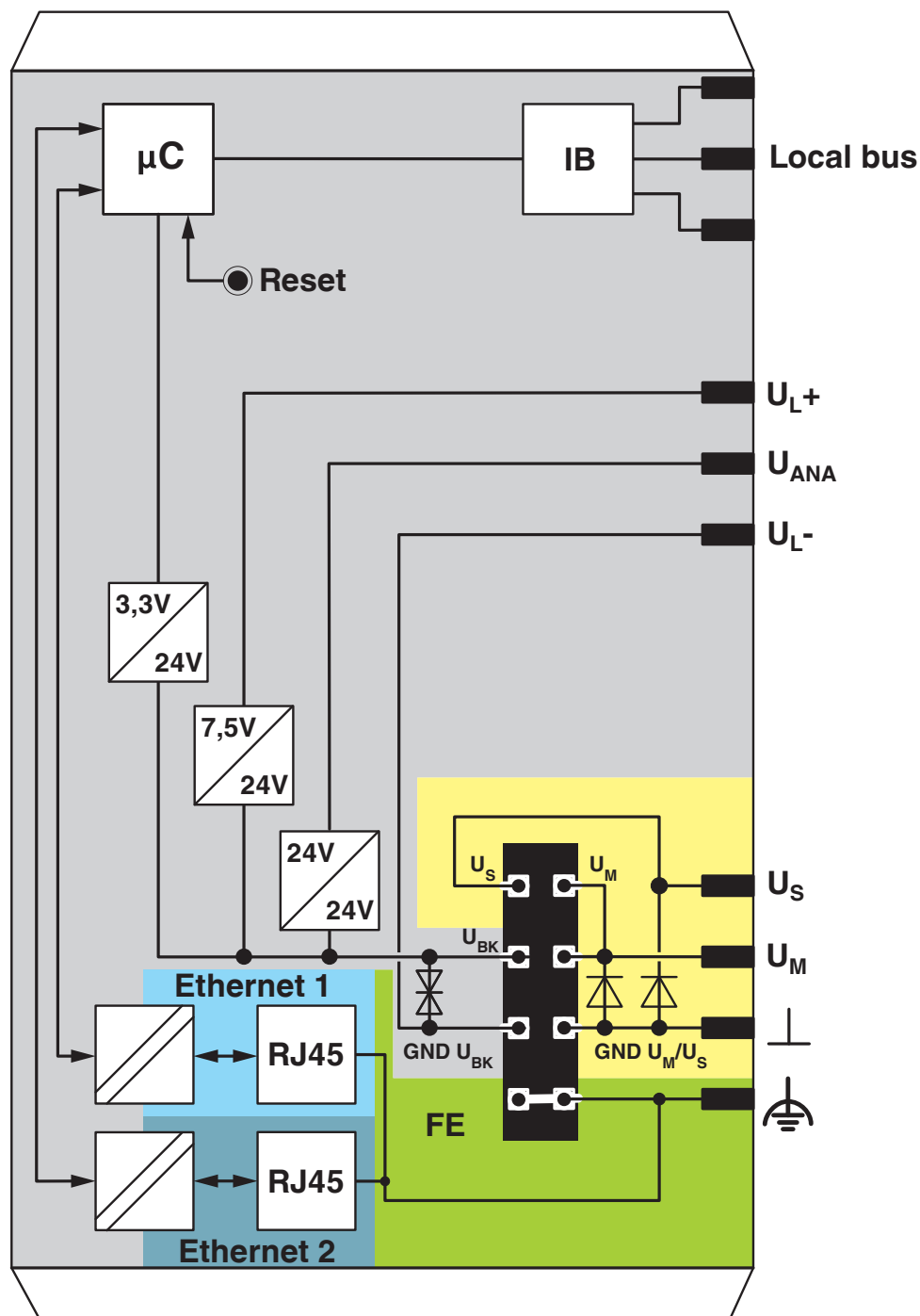
Dimensional drawing



Connection diagram



Block diagram




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## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702507>



**cULus Listed**

Approval ID: E238705



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27242608 |
| ECLASS-15.0 | 27242608 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001604 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|



## Environmental product compliance

### EU RoHS

|   |              |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 7(a), 7(c)-I |

### China RoHS

|  |   |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50   |
|  | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 9cba4bf3-dfdd-471d-b3b7-e112abf1e545 |