

# Bus coupler - IL EC BK-PAC



2702507

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

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Inline, Bus coupler, EtherCAT<sup>®</sup>, 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<sup>®</sup> network and represents the link to the Inline I/O system. Up to 63 Inline devices can be connected to the bus coupler. EtherCAT<sup>®</sup> 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 via the product at [phoenixcontact.net/products](https://www.phoenixcontact.net/products).

## Your advantages

- 2 RJ45 connections
- Automatic addressing
- Station mapped as a modular EtherCAT<sup>®</sup> 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
Product Key	DRI11E
Catalog Page	Page 102 (C-6-2019)
GTIN	4055626258683
Weight per Piece (including packing)	178 g
Weight per Piece (excluding packing)	168 g
Customs tariff number	85176200
Country of origin	DE

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## Technical Data

### Dimensions

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

### Material specifications

Color	green
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### Interfaces

#### EtherCAT<sup>®</sup>

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<sup>®</sup>

System-specific protocols	Mailbox protocols CAN application protocol over EtherCAT <sup>®</sup> Mailbox protocols File access over EtherCAT <sup>®</sup>
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
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## Product properties

Type	modular
Product type	I/O component
Scope of delivery	including Inline connector and labeling field
Diagnostics messages	Messages via object 10F3 <sub>hex</sub> Diagnosis history

## Electrical properties

### Potentials

Power consumption	typ. 1.7 W (entire device)
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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. 70.6 mA (No local bus devices connected)

### Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC
	max. 0.8 A

### 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)
	max. 0.5 A DC

### 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)
	max. 8 A DC (sum of $U_M + U_S$ )

### 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)
	max. 8 A DC (sum of $U_M + U_S$ )

## Connection data

### Connection technology

Connection name	Inline connector
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### Conductor connection

Connection method	Spring-cage connection
Conductor cross section solid	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

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2702507

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Stripping length	8 mm
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## 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

## 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)
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## Mounting

Mounting type	DIN rail mounting
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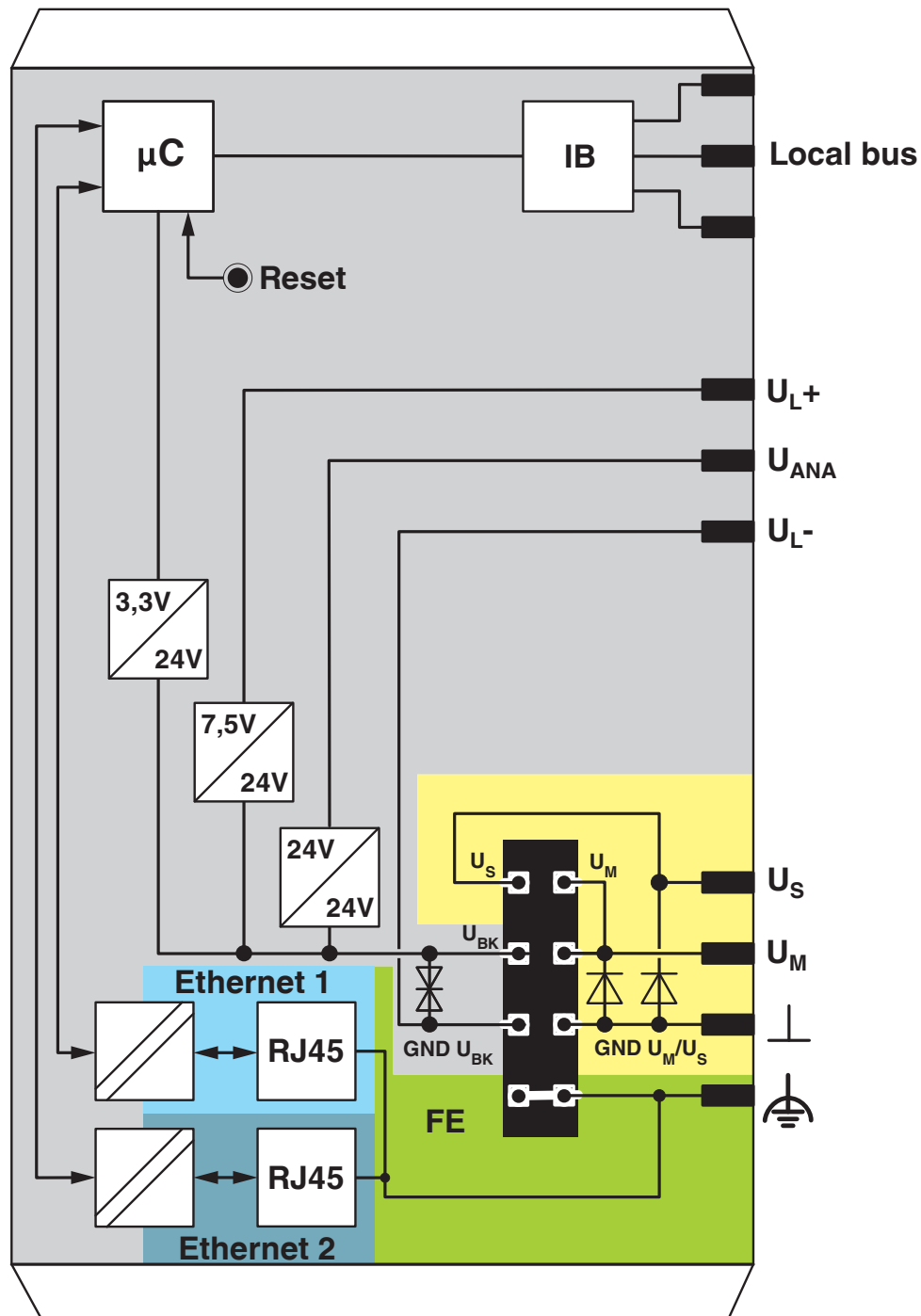
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## Drawings

Block diagram

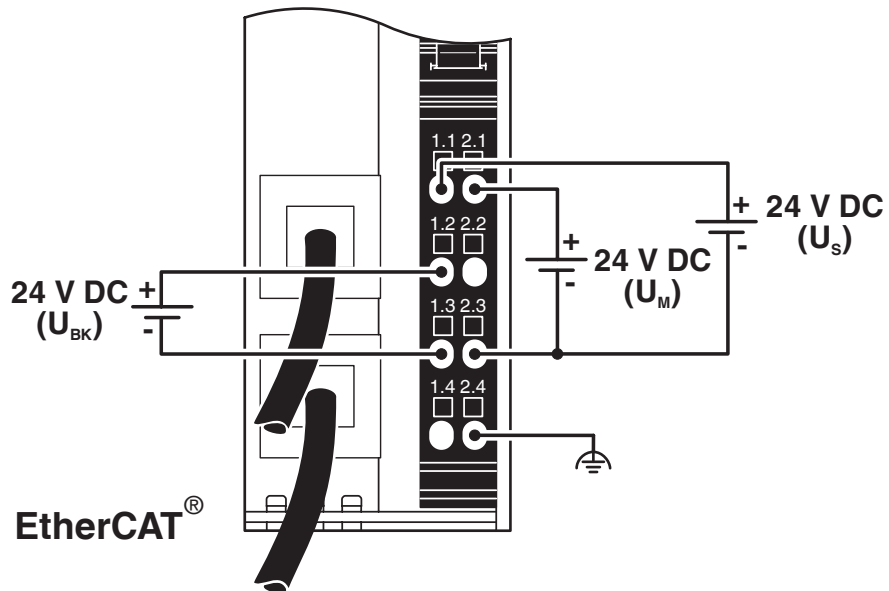


# Bus coupler - IL EC BK-PAC

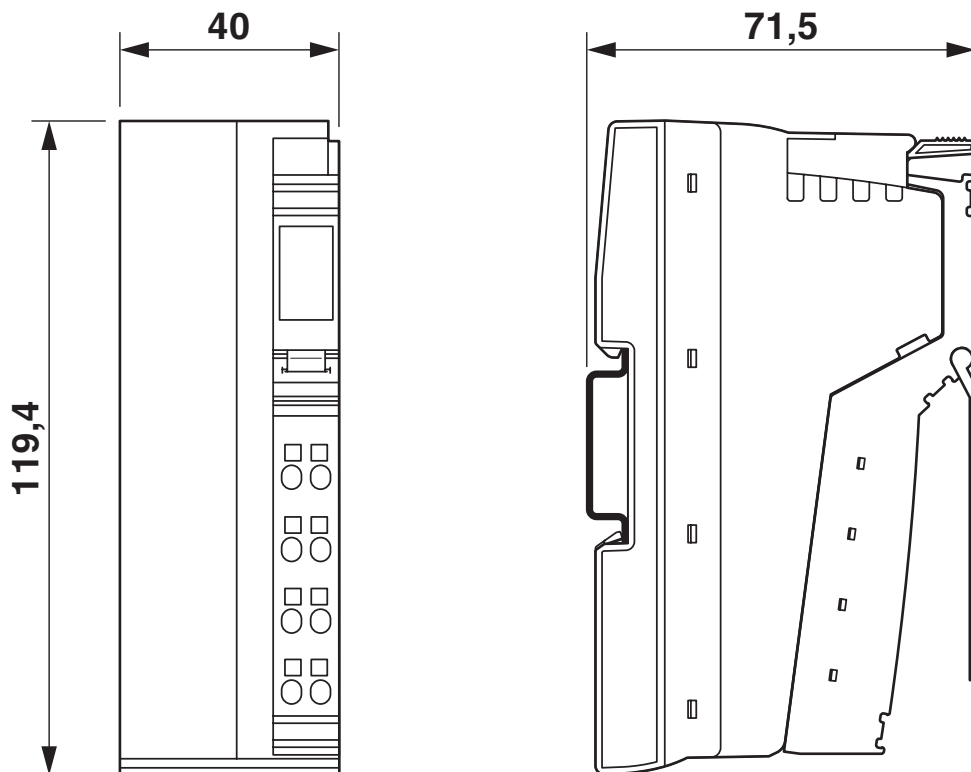
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Connection diagram



Dimensional drawing



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## Approvals



**UL Listed**

Approval ID: FILE E 238705



**cUL Listed**

Approval ID: FILE E 238705

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27242608
ECLASS-10.0.1	27242608
ECLASS-11.0	27242608

### ETIM

ETIM 8.0	EC001604
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### UNSPSC

UNSPSC 21.0	32151600
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## Environmental Product Compliance

REACH SVHC

Lead 7439-92-1

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## Accessories

### Labeling field

Labeling field - IB IL FIELD 2 - 2727501

<https://www.phoenixcontact.com/pc/products/2727501>

Labeling field, width: 12.2 mm



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### Insert strip

Insert strip - ESL 62X10 - 0809492

<https://www.phoenixcontact.com/pc/products/0809492>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems:  
Laser printer, mounting type: insert, lettering field size: 62 x 10 mm, Number of  
individual labels: 72



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## End clamp

End clamp - CLIPFIX 35-5 - 3022276

<https://www.phoenixcontact.com/pc/products/3022276>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

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## End clamp

End clamp - CLIPFIX 35 - 3022218

<https://www.phoenixcontact.com/pc/products/3022218>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

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## RJ45 connector

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

<https://www.phoenixcontact.com/pc/products/2744856>



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.

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## RJ45 connector

RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

<https://www.phoenixcontact.com/pc/products/2744571>



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.

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## Network cable

Network cable - FL CAT5 HEAVY - 2744814

<https://www.phoenixcontact.com/pc/products/2744814>



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm<sup>2</sup>, solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

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## Installation cable

Installation cable - FL CAT5 FLEX - 2744830

<https://www.phoenixcontact.com/pc/products/2744830>



By the meter, Installation cable, Ethernet CAT5 (100 Mbps), shielded, PUR halogen-free, water blue RAL 5021, 4-wire (2x2xAWG26/7; SF/UTP), color single wire: white/orange-orange, white/green-green, cable length: Free entry (1.0 ... 1000.0 m)

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2702507

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## Assembly tool

Assembly tool - FL CRIMPTOOL - 2744869

<https://www.phoenixcontact.com/pc/products/2744869>

Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site



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## Surge protection device

Surge protection device - D-LAN-CAT.5-FP - 2800723

<https://www.phoenixcontact.com/pc/products/2800723>



Fine surge protection for data networks up to 1 Gbps. For use in Ethernet, Power over Ethernet (PoE, mode A and mode B), token ring, ISDN, and DS1. RJ45 attachment plug with separate grounding cable and snap-on foot for NS 35 DIN rails.

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