

# IL PB BK DI8 DO4/EF-XC-PAC - Bus coupler



2702132

<https://www.phoenixcontact.com/us/products/2702132>

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The figure shows the standard item

Inline, Bus coupler, PROFIBUS DP, D-SUB-9 female connector, Digital inputs: 8, 24 V DC, connection technology: 3-conductor, Digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor, Extreme conditions version, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including Inline connectors and marking fields

## Product description

The bus coupler with integrated I/Os is intended for use within a PROFIBUS network and represents the link to the Inline I/O system. Up to 61 Inline devices can be connected to the bus coupler. A corresponding GSD file is available for integrating the Inline station into the programming system. This file can be downloaded via the product at [www.phoenixcontact.com/products](http://www.phoenixcontact.com/products).

## Your advantages

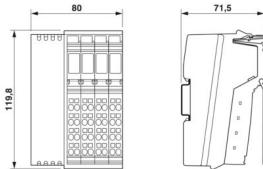
- PROFIBUS connection via 9-pos. D-SUB socket
- 8 digital inputs, 4 digital outputs (on-board)
- Connection of a maximum of 16 PCP devices
- DP/V1 for class 1 and class 2 masters
- PROFIBUS data transmission speed of 9.6 kbps to 12 Mbps
- I&M functions
- Diagnostic and status indicators
- IO-Link call
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Coated PCBs

## Commercial data

Item number	2702132
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DR01
Product key	DRI112
GTIN	4046356981774
Weight per piece (including packing)	339.9 g
Weight per piece (excluding packing)	339.9 g
Customs tariff number	85176200
Country of origin	DE

## Technical data

### Dimensions

Dimensional drawing	
Width	80 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Specifications with connectors

### Material specifications

Color	green
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### Interfaces

#### PROFIBUS DP

No. of channels	1
Connection method	D-SUB-9 female connector
Number of positions	9
Transmission speed	9.6 kbps ... 12 Mbps

#### Inline local bus

Connection method	Inline data jumper
Transmission speed	500 kbps / 2 Mbps (automatic detection, no combined system)

#### Fieldbus: Local bus gateway

Max. number of local bus devices	61 (The on-board I/Os are two devices)
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### System properties

#### System limits

Amount of process data ( )	max. 244 Byte (Input)
Amount of process data ( )	max. 244 Byte (Output)
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 61 (The on-board I/Os are two devices)
Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	0
Response time of I/Os	typ. 4 ms (aligned I/Os; transmission speed: PROFIBUS 1.5 Mbps, local bus 500 kbps)

#### Module

ID code (hex)	0B50
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Input address area	8 bit (or 1 byte, selection in the GSD file)
Output address area	4 bit (or 1 byte, selection in the GSD file)
Register length	16 bit

## Input data

Digital:

Input name	Digital inputs
Description of the input	EN 61131-2 type 1
Number of inputs	8
Connection method	Inline connector
Connection technology	3-conductor
Input voltage	24 V DC
Input voltage range "0" signal	-30 V DC ... 5 V DC
Input voltage range "1" signal	15 V DC ... 30 V DC
Nominal input voltage $U_{IN}$	24 V DC
Nominal input current at $U_{IN}$	typ. 3 mA
Typical input current per channel	typ. 3 mA
Typical response time	approx. 500 $\mu$ s
Delay at signal change from 0 to 1	2.9 ms
Delay at signal change from 1 to 0	2.9 ms
Protective circuit	Reverse polarity protection; Suppressor diode

## Output data

Digital:

Output name	Digital outputs
Connection method	Inline connector
Connection technology	3-conductor
Number of outputs	4
Protective circuit	Short-circuit and overload protection; Freewheeling circuit in the output driver
Output voltage	24 V DC -1 V (At nominal current)
Maximum output current per module	max. 2 A
Nominal output voltage	24 V DC
Output current when switched off	max. 10 $\mu$ A (When not loaded, a voltage can be measured even at an output that is not set.)
Nominal load, inductive	12 VA (1.2 H, 48 $\Omega$ )
Nominal load, lamp	12 W
Nominal load, ohmic	12 W
Reverse voltage resistance to short pulses	Reverse voltage proof
Behavior with overload	Auto restart
Behavior with inductive overload	Output can be destroyed
Behavior at voltage switch-off	The output follows the power supply without delay
Signal delay	typ. 2.9 ms
Overcurrent shut-down	min. 0.7 A

## Product properties

Product type	I/O component
Product family	Inline
Type	modular Inline
Scope of supply	including Inline connectors and marking fields
No. of channels	12
Special properties	Extreme conditions version
Diagnosics messages	Short-circuit or overload of the digital outputs yes Sensor supply failure yes Failure of the actuator supply yes

## Electrical properties

Power dissipation	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. 0.98 A (with max. number of connected I/O terminal blocks) min. 80 mA (without connected I/O terminal blocks)

Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC
Power supply	max. 0.8 A 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)
Power supply	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)
Power supply	max. 8 A DC (sum of $U_M + U_S$ )
Current draw	max. 8 A DC min. 3 mA (without connected peripherals)

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)
Power supply	max. 8 A DC (sum of $U_M + U_S$ )
Current draw	max. 8 A DC min. 6 mA (without connected peripherals)

## Connection data

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## Connection technology

Connection name	Inline connector
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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

## Environmental and real-life conditions

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.)
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 % (according to DIN EN 61131-2)

## 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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# IL PB BK DI8 DO4/EF-XC-PAC - Bus coupler

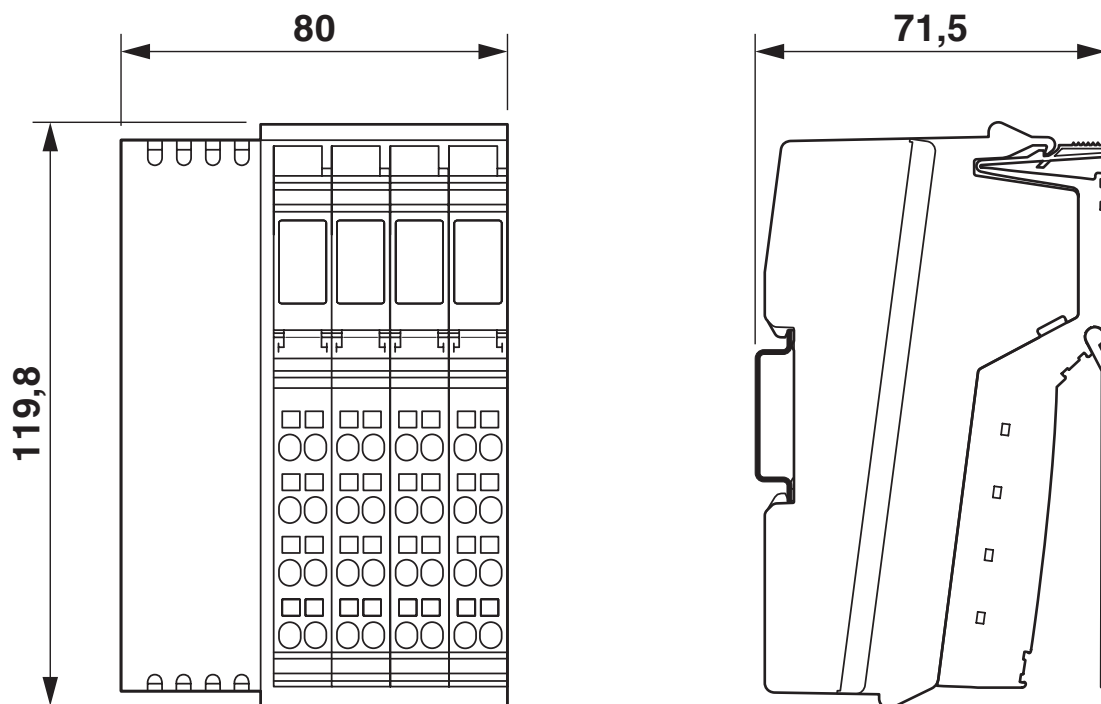


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## Drawings

Dimensional drawing



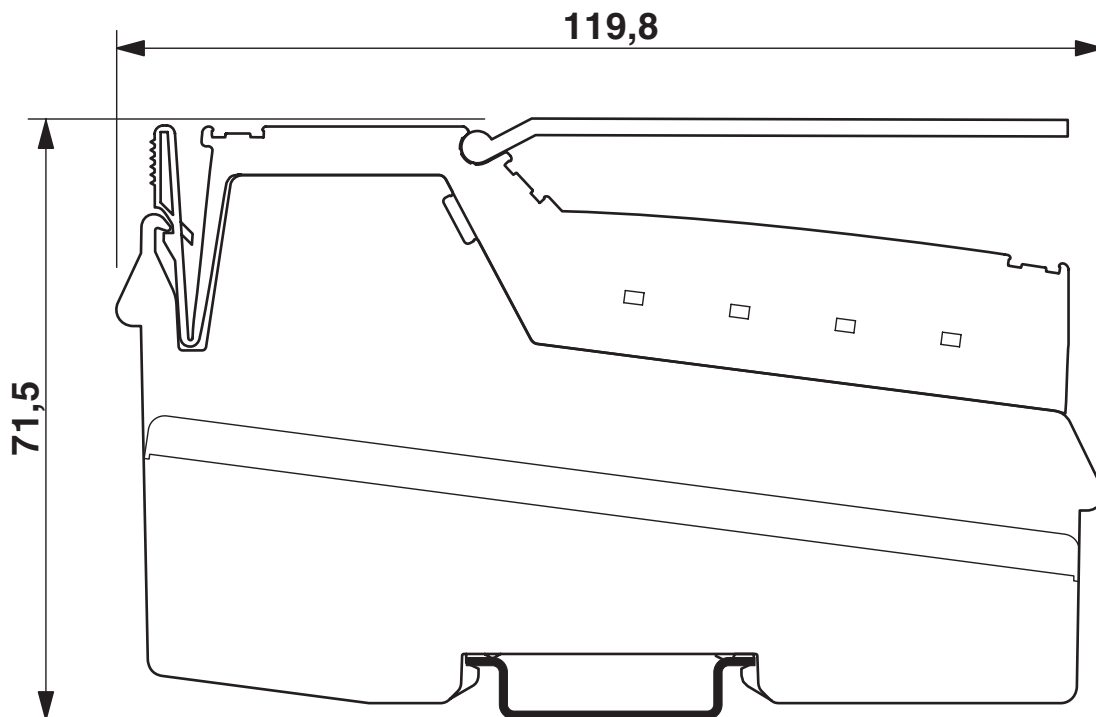
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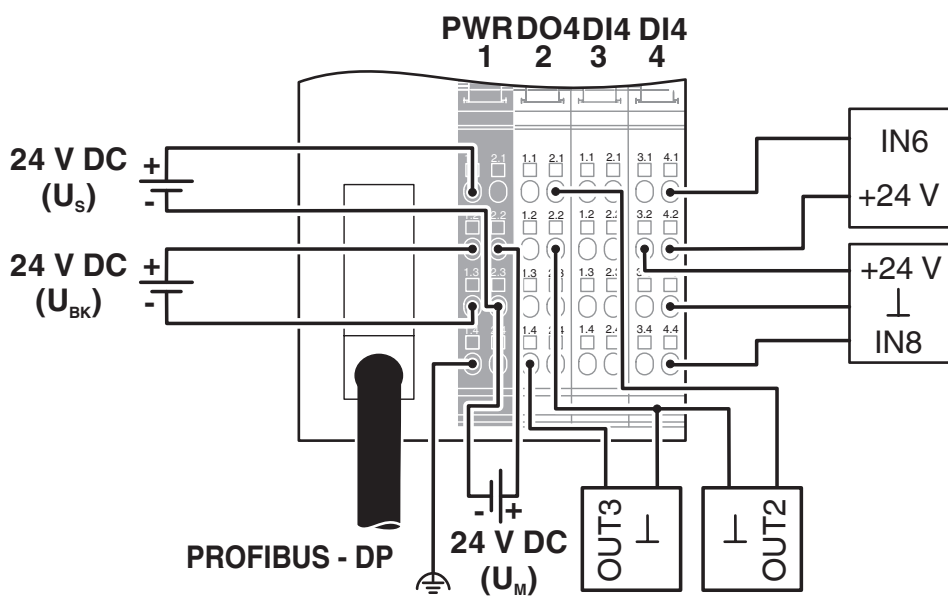
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Dimensional drawing



Connection diagram



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## Classifications

### UNSPSC

UNSPSC 21.0	32151600
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## Environmental product compliance

### 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.)	No substance above 0.1 wt%
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