

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



2692322

<https://www.phoenixcontact.com/us/products/2692322>

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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, 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
- Electrical isolation between PROFIBUS interface and logic
- 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
- Rotary coding switches for setting the PROFIBUS address
- Supported PROFIBUS addresses from 0 to 126
- I&M functions
- IO-Link call (firmware 2.0 or later)
- Operation of PROFIsafe devices

## Commercial data

Item number	2692322
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR01
Product key	DRI112
GTIN	4046356315272
Weight per piece (including packing)	325.3 g
Weight per piece (excluding packing)	343.2 g
Customs tariff number	85389091
Country of origin	DE

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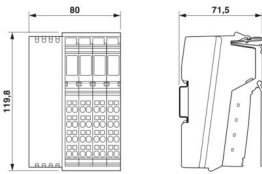


2692322

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## Technical data

### Dimensions

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

### Notes

Note on application	
Note on application	Only for industrial use
Utilization restriction	
CCCex note	Use in potentially explosive areas is not permitted in China.

### Interfaces

PROFIBUS DP	
Number of interfaces	1
Connection method	D-SUB-9 female connector
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)

### System properties

System limits	
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
Input address area	8 bit (or 1 byte, selection in the GSD file)

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2692322

<https://www.phoenixcontact.com/us/products/2692322>

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

## 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

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2692322

<https://www.phoenixcontact.com/us/products/2692322>

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

## 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	6.3 W
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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
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## 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)
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)
Current draw	max. 8 A DC
	min. 3 mA (without connected peripherals)

## Electrical isolation/isolation of the voltage ranges

Test voltage: PROFIBUS interface / communications power ( $U_{BK}$ , $U_L$ , $U_{ANA}$ )	500 V AC, 50 Hz, 1 min
Test voltage: PROFIBUS interface / I/O ( $U_M$ , $U_S$ )	500 V AC, 50 Hz, 1 min
Test voltage: PROFIBUS interface / functional ground	500 V AC, 50 Hz, 1 min

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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
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### 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 ... 60 °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)	-25 °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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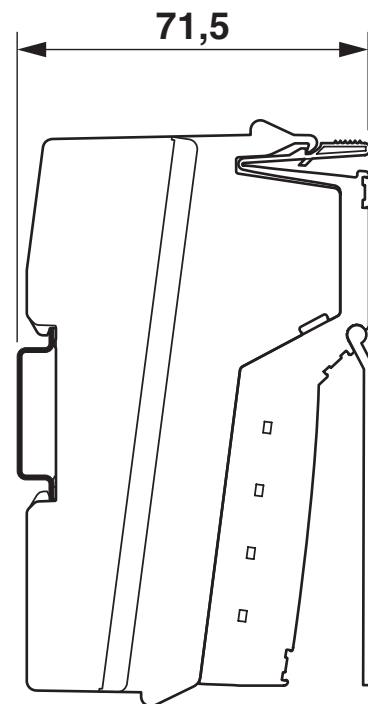
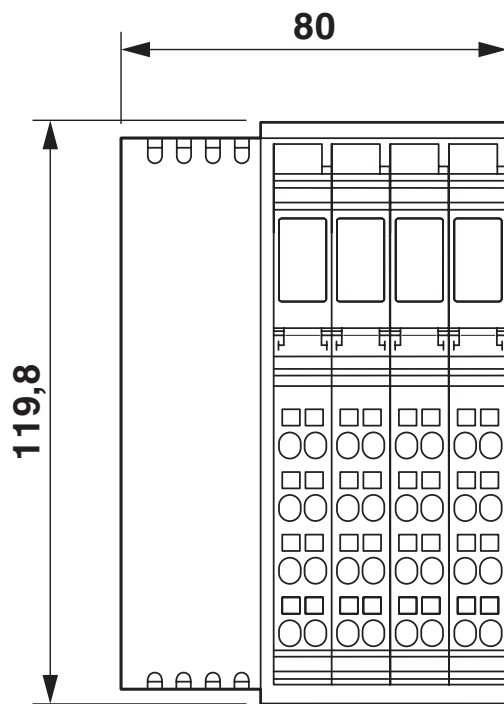
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## Drawings

Dimensional drawing



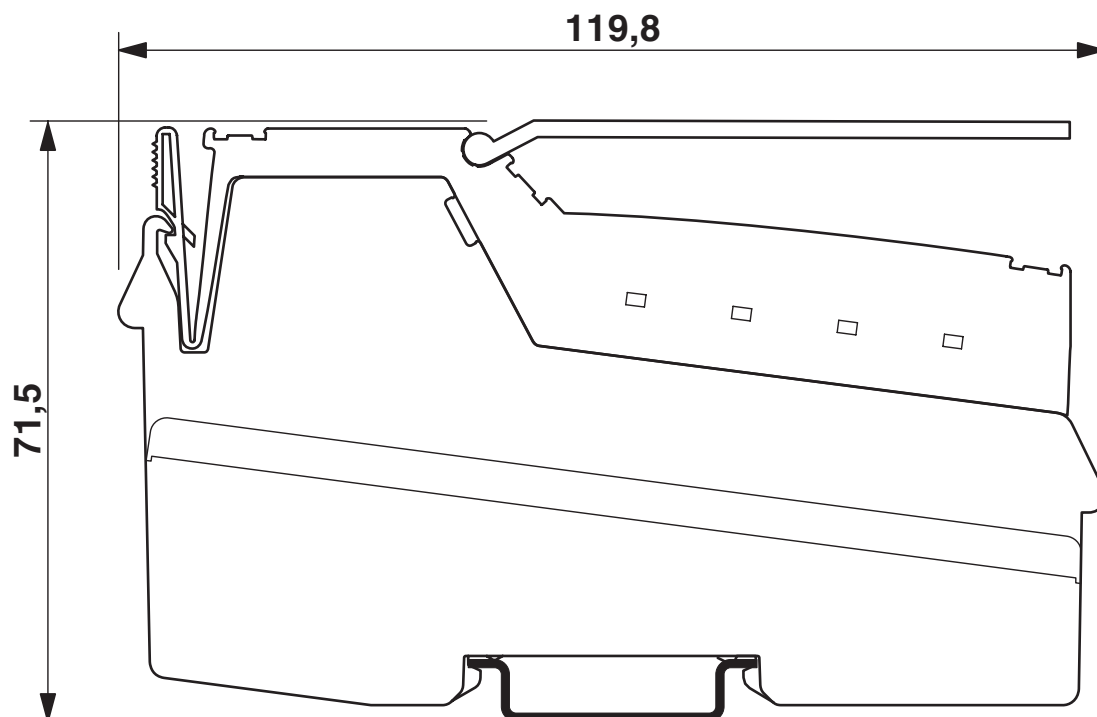
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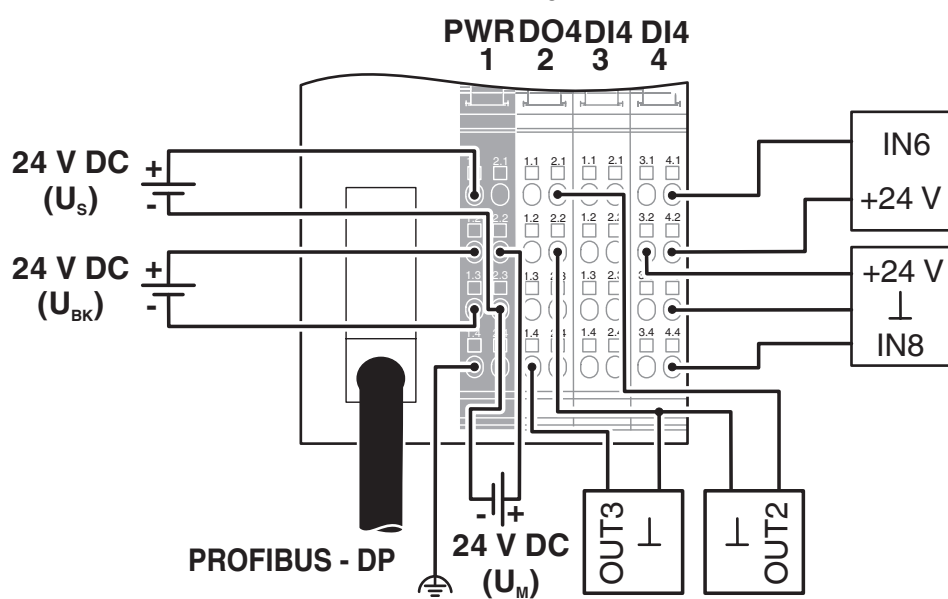
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Dimensional drawing



Connection diagram



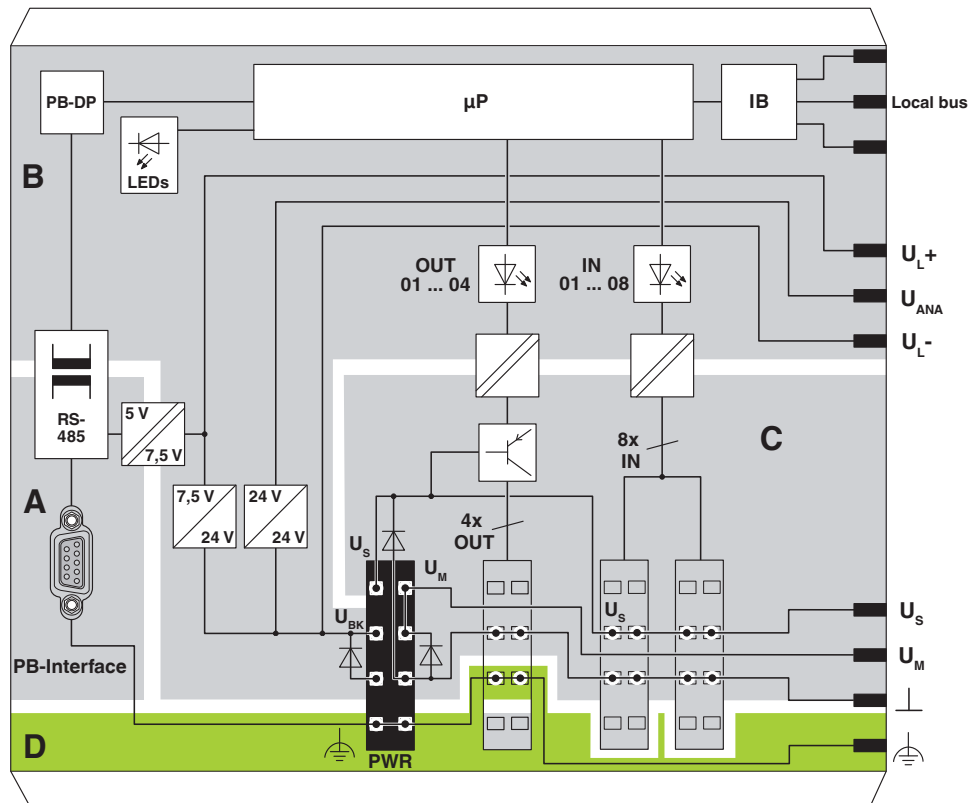
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Block diagram





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## Approvals

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**EAC**

Approval ID: TR TS\_S\_03508-21



**BV**

Approval ID: 20977/C1 BV



**RINA**

Approval ID: ELE121121XG

**DNV**

Approval ID: TAA00002CU



**cULus Recognized**

Approval ID: E140324



**BV**

Approval ID: 21725/C1 BV

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## Classifications

### ECLASS

ECLASS-13.0	27242608
ECLASS-15.0	27242608

### ETIM

ETIM 9.0	EC001604
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### UNSPSC

UNSPSC 21.0	32151600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(a), 6(a)-I, 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	ec83c317-fef4-4cbe-9543-f03e0f4d2b4d

### EF3.0 Climate Change

CO2e kg	21.112 kg CO2e
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