

# IL PB BK DI8 DO4-PAC - Bus coupler



2878926

<https://www.phoenixcontact.com/us/products/2878926>

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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). **The bus coupler does not support PROFIsafe modules. Use the IL PB BK DI8 DO4/EF-PAC bus coupler for this.**

## Your advantages

- I&M functions
- PROFIBUS connection via 9-pos. D-SUB socket
- 8 digital inputs, 4 digital outputs (on-board)
- PROFIBUS data transmission speed of 9.6 kbps to 12 Mbps
- DP/V1 for class 1 and class 2 masters
- Connection of a maximum of 16 PCP devices

## Commercial data

Item number	2878926
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DR01
Product key	DRI112
GTIN	4046356048637
Weight per piece (including packing)	357.3 g
Weight per piece (excluding packing)	335.3 g
Customs tariff number	85389091
Country of origin	DE

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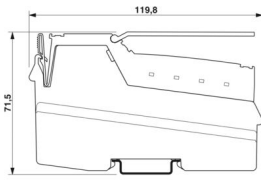


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## Technical data

### Dimensions

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

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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### Material specifications

Color	green
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### Interfaces

#### PROFIBUS DP

No. of channels	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

Amount of process data	max. 488 Byte (per station)
	max. 244 Byte (Input)
	max. 244 Byte (Output)
Number of parameter data	max. 244 Byte (including 14 bytes for the bus coupler, DP/V1, and the local inputs and outputs)
Number of configuration data	max. 244 Byte (including 5 bytes for the local inputs and outputs)
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 62 (On board I/Os are one device)

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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)

## Programming data

Input address area	1 Byte
Output address area	1 Byte
Parameter channel (PCP)	0 bit
Register length (bus)	16 bit
Register length (master)	510 Byte

## 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
Current flow	Limited to 3 mA, maximum
Typical input current per channel	typ. 3 mA
Typical response time	approx. 500 $\mu$ s
Delay at signal change from 0 to 1	1.2 ms
Delay at signal change from 1 to 0	1.2 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)
Max. current carrying capacity per output	max. 500 mA
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

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	at an output that is not set.)
Nominal load, inductive	12 VA (1.2 H, 48 Ω)
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. 1.2 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
Diagnostics 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

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 $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)
Current draw	max. 8 A DC min. 3 mA (without sensors)

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## 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 $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)
Current draw	max. 8 A DC
	min. 3 mA (without actuators)

## Connection data

### 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

## 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)

### Mechanical test

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse

## Standards and regulations

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

Mounting type	DIN rail mounting
	DIN rail mounting

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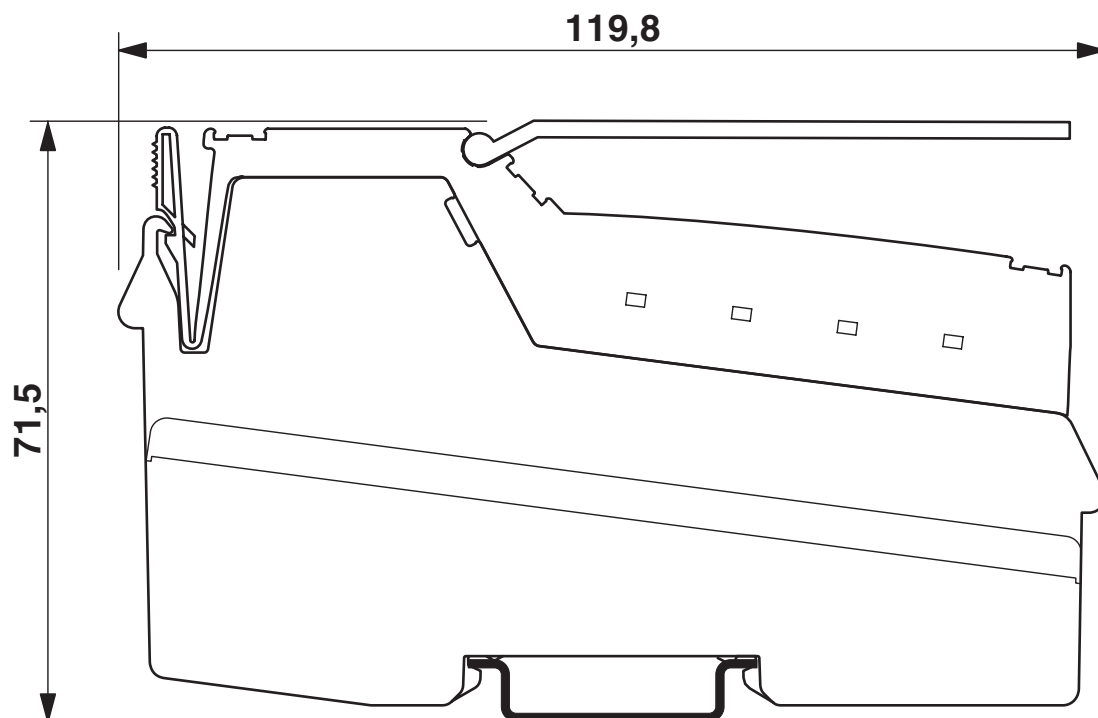


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## Drawings

Dimensional drawing

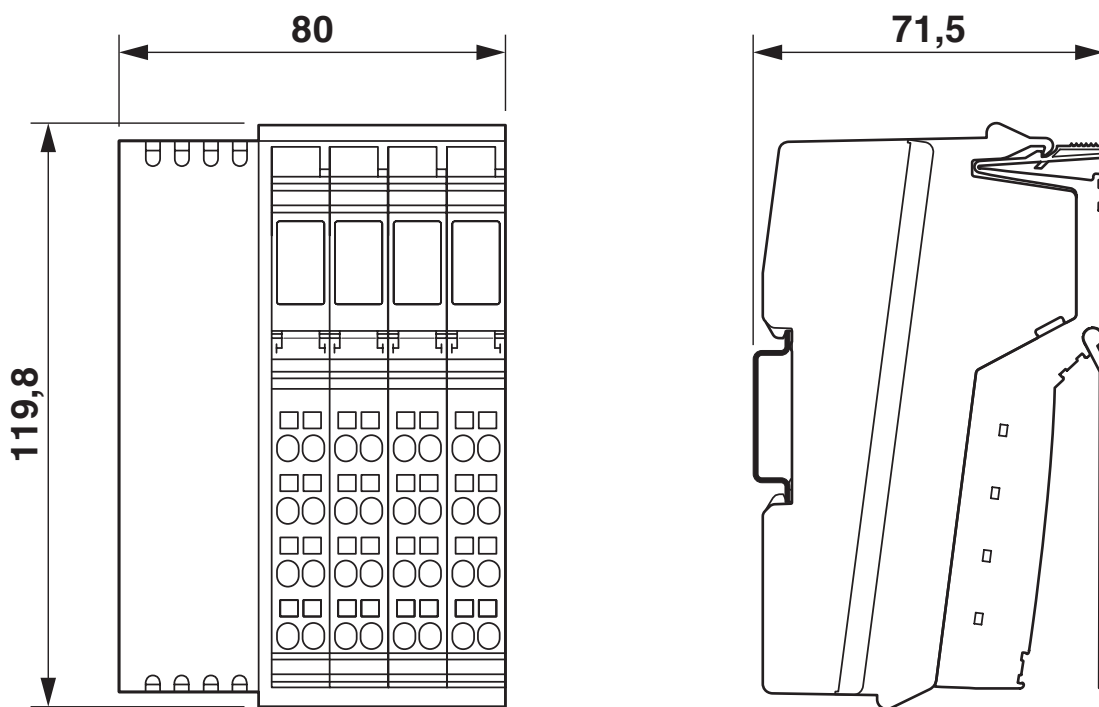


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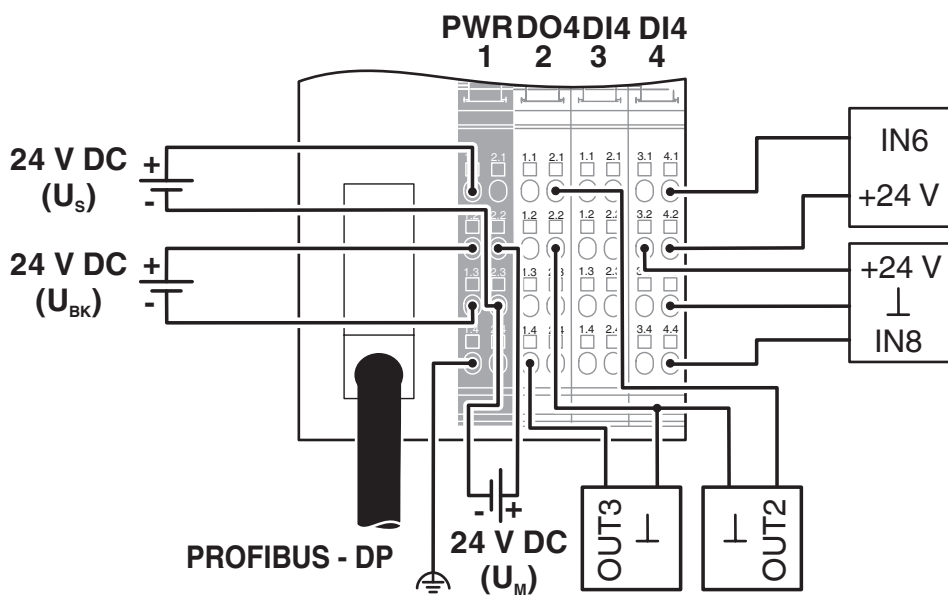
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Dimensional drawing



Connection diagram

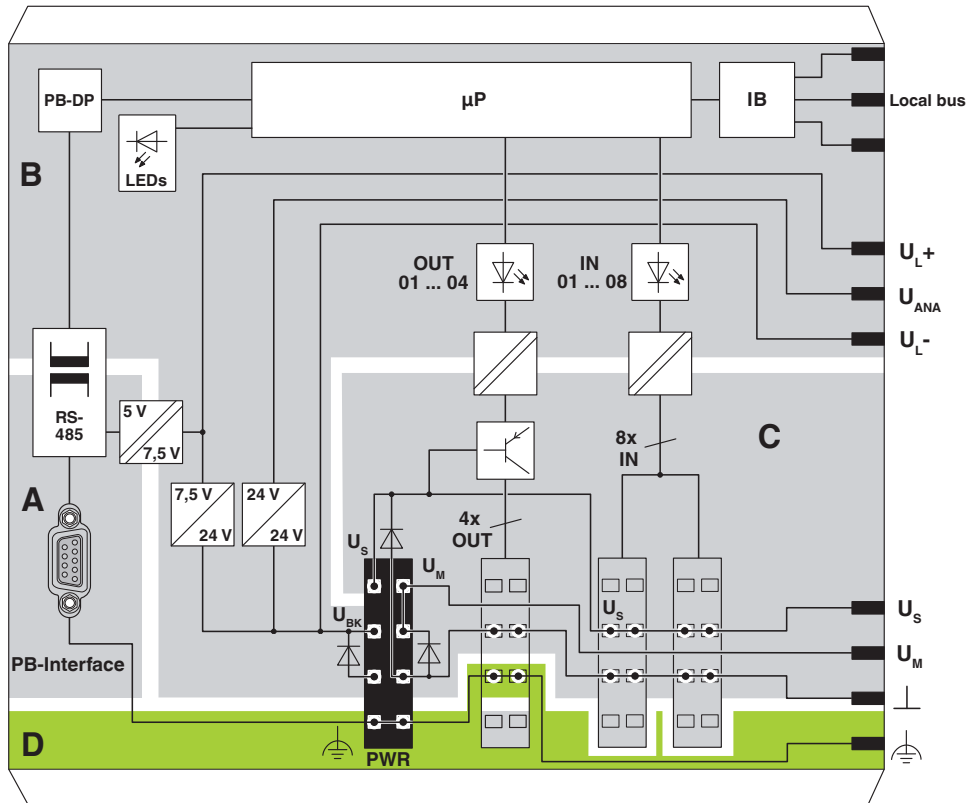


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Block diagram



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## Environmental product compliance

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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