# Bus coupler - IL PB BK DI8 DO4/EF-PAC - 2692322

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Inline, Bus coupler, PROFIBUS DP, D-SUB-9 female connector, Digital inputs: 8, 24 V DC, connection method: 3-wire, Digital outputs: 4, 24 V DC, 500 mA, connection method: 3-wire, 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 phoenixcontact.net/products.

## Your advantages

- PROFIBUS connection via 9-pos. D-SUB socket
- Electrical isolation between PROFIBUS interface and logic
- Eight digital inputs, four 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

## Key Commercial Data

| | |
|---|---|
| Packing unit | 1 pc |
| GTIN | 4 046356 315272 |
| GTIN | 4046356315272 |

## Technical data

### Note

| | |
|---|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |

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## Technical data

### Dimensions

| | |
|---|---|
| Width | 80 mm |
| Height | 119.8 mm |
| Depth | 71.5 mm |
| Note on dimensions | Specfications with connectors |

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -25 °C ... 85 °C |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |
| 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) |
| Degree of protection | IP20 |

### General

| | |
|---|---|
| Mounting type | DIN rail |
| Color | green |
| Net weight | 343.2 g |
| Note on weight specifications | with connectors |
| Diagnostics messages | Short-circuit or overload of the digital outputs Yes |
| | Sensor supply failure Yes |
| | Failure of the actuator supply Yes |

### Interfaces

| | |
|---|---|
| Designation | PROFIBUS DP |
| No. of channels | 1 |
| Connection method | D-SUB-9 female connector |
| Transmission speed | 9.6 kbps ... 12 Mbps |
| Number of positions | 9 |
| Designation | Inline local bus |
| Connection method | Inline data jumper |
| Transmission speed | 500 kbps / 2 Mbps (automatic detection, no combined system) |

### Network/bus system

| | |
|---|---|
| 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. 61 (The on-board I/Os are two devices) |
| Number of devices with parameter channel | max. 16 |

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## Technical data

### Network/bus system

| | |
|---|---|
| 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) |

### Inline potentials

| | |
|---|---|
| Designation | Bus coupler supply $U_{BC}$; 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 consumption | 80 mA (without connected I/O terminal blocks) |
| | max. 0.98 A |
| Designation | Communications power ($U_L$) |
| Supply voltage | 7.5 V DC |
| Power supply unit | max. 0.8 A DC |
| Designation | 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 unit | max. 0.5 A DC |
| Designation | Main circuit supply ($U_M$) |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Power supply unit | max. 8 A DC (sum of $U_M$ + $U_S$) |
| Current consumption | max. 8 A DC |
| Designation | 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 unit | max. 8 A DC (sum of $U_M$ + $U_S$) |
| Current consumption | max. 8 A DC |
| Power consumption | typ. 1.7 W (entire device) |
| Current consumption | 6 mA (without connected peripherals) |

### Digital inputs

| | |
|---|---|
| Input name | Digital inputs |
| Description of the input | EN 61131-2 type 1 |
| Connection method | Inline connector |
| Connection technology | 3-wire |
| Number of inputs | 8 |
| Typical response time | approx. 500 µs |
| Protective circuit | Reverse polarity protection Suppressor diode |
| Nominal input voltage $U_{IN}$ | 24 V DC |
| Nominal input current at $U_{IN}$ | typ. 3 mA |
| Input voltage | 24 V DC |

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## Technical data

### Digital inputs

| | |
|---|---|
| Input voltage range "0" signal | -30 V DC ... 5 V DC |
| Input voltage range "1" signal | 15 V DC ... 30 V DC |
| Typical input current per channel | typ. 3 mA |
| Delay at signal change from 0 to 1 | 2.9 ms |
| Delay at signal change from 1 to 0 | 2.9 ms |

### Digital outputs

| | |
|---|---|
| Output name | Digital outputs |
| Connection method | Inline connector |
| Connection technology | 3-wire |
| 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) |
| Nominal output voltage | 24 V DC |
| Maximum output current per channel | 500 mA |
| Maximum output current per module / terminal block | 2 A |
| Maximum output current per module | 2 A |
| Nominal load, inductive | 12 VA (1.2 H, 48 Ω) |
| Nominal load, lamp | 12 W |
| Nominal load, ohmic | 12 W |
| Limitation of the voltage induced on circuit interruption | approx. -30 V |
| Output current when switched off | max. 10 µA (When not loaded, a voltage can be measured even at an output that is not set.) |
| Behavior with overload | Auto restart |
| Behavior with inductive overload | Output can be destroyed |
| Reverse voltage resistance to short pulses | Reverse voltage proof |

### Standards and Regulations

| | |
|---|---|
| Mechanical tests | Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g |
| | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse |
| Connection in acc. with standard | CUL |
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |

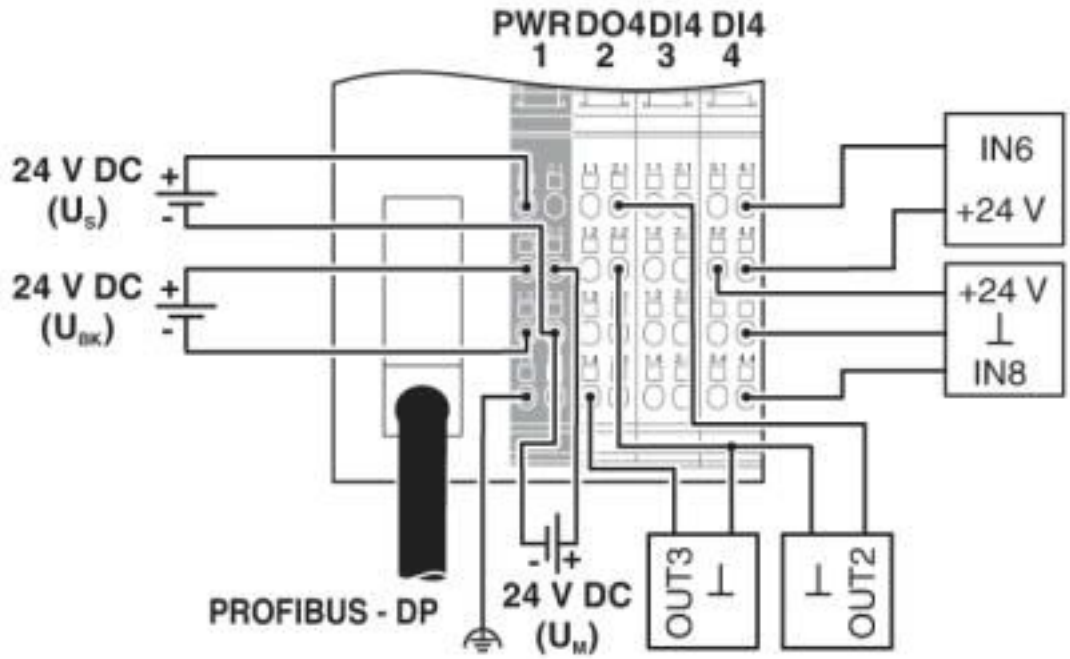
### Environmental Product Compliance

| | |
|---|---|
| REACh SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

## Drawings

# Bus coupler - IL PB BK DI8 DO4/EF-PAC - 2692322

Connection diagram



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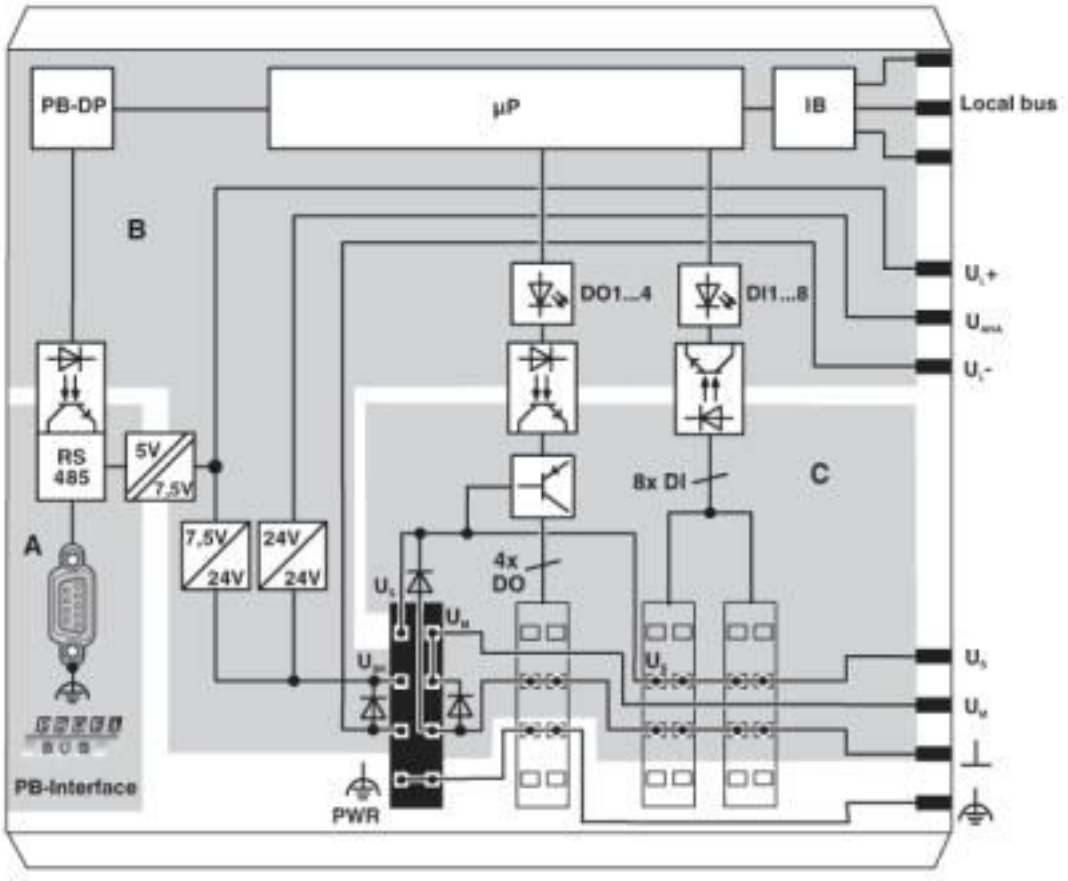
Block diagram



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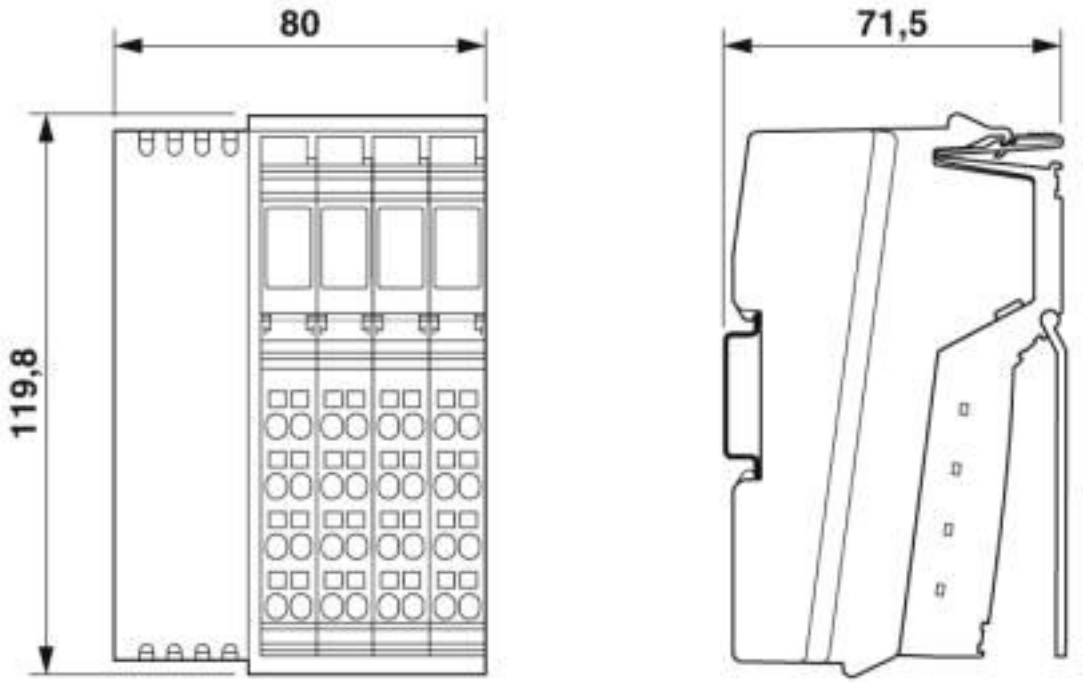
Dimensional drawing




Dimensional drawing