

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

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Inline Modular PROFIBUS bus coupler DP/V1, 8 inputs: 24 V DC, 4 outputs: 24 V DC, 500 mA, 2, 3-conductor connection method

### Product description

The bus coupler for the PROFIBUS has 4 digital outputs and 8 digital inputs. This package contains all the necessary Inline connectors for connecting the supply and the I/Os.

For project planning, the relevant GSD (device master data) file can be downloaded in the download area of Phoenixcontact.com.

The Inline terminals can be labeled using pull-out labeling fields. The fields have insert cards that can be labeled individually to suit the application. Additionally, there is the ZBFM-6... Zack marker strip for labeling the terminal points.

### Product Features

- IO-Link calls supported
- Operation of PROFIsafe devices



### Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	340.0 GRM
Custom tariff number	85389091
Country of origin	Germany

### Technical data

#### Note

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

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

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### Technical data

#### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	10 % ... 95 % (according to DIN EN 61131-2)
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

Weight	320 g
Note on weight specifications	with connectors
Mounting type	DIN rail
Protection class	III, IEC 61140, EN 61140, VDE 0140-1
Conformance with EMC directives	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B; 6 kV contact discharge, 8 kV air discharge
	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A; Field intensity: 10 V/m
	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion A; all interfaces 1 kV Criterion B; all interfaces 2 kV
	Noise immunity test in accordance with EN 61000-6-2 Transient surge voltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B; supply lines DC: 0.5 kV/0.5 kV (symmetrical/asymmetrical); fieldbus cable shield 1 kV
	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A; Test voltage 10 V
	Noise emission test as per EN 61000-6-4 EN 55011 Class A
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
Diagnostics messages	Short-circuit / overload of the digital outputs Yes
	Sensor supply failure Yes

#### Interfaces

Fieldbus system	PROFIBUS DP
Designation	PROFIBUS DP
Connection method	D-SUB-9 female connector
Transmission speed	9,6 kBit/s ... 12 MBit/s
Number of positions	9
Fieldbus system	Lokalbus
Designation	Inline local bus

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### Technical data

#### Interfaces

Connection method	Inline data jumper
Transmission speed	500 kBit/s / 2 MBit/s (Automatic detection, no combined system)

#### System limits of the bus coupler

Designation	System limits of the bus coupler
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 (on board I/Os are two devices)
Number of devices with parameter channel	max. 16
Number of 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)

#### Power supply for module electronics

Connection method	Spring-cage connection
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	max. 0.98 A (from $U_{BK}$ )
Power loss	typ. 1.7 W (entire device)
Communications power $U_L$	7.5 V DC
Current consumption	0.8 A
Power consumption	typ. 1.7 W

#### Inline potentials

Communications power $U_L$	7.5 V DC $\pm 5\%$
Power supply at $U_L$	max. 0.8 A DC
Main circuit supply $U_M$	24 V DC
Supply voltage range $U_M$	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply at $U_M$	max. 8 A DC (Sum of $U_M + U_S$ )
Current consumption from $U_M$	max. 8 A DC
Segment supply voltage $U_S$	24 V DC
Supply voltage range $U_S$	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

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### Technical data

#### Inline potentials

Power supply at $U_S$	max. 8 A DC (Sum of $U_M + U_S$ )
Current consumption from $U_S$	max. 8 A DC
I/O supply voltage $U_{ANA}$	24 V DC
Supply voltage range $U_{ANA}$	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply at $U_{ANA}$	max. 0.5 A DC

#### Digital inputs

Input name	Digital inputs
Connection method	Inline connector
	2, 3-wire
Number of inputs	8 (EN 61131-2 type 1)
Typical response time	approx. 500 $\mu$ s
Protective circuit	Protection against polarity reversal Polarity protection diode
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 current at $U_{IN}$	typ. 3 mA
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
	2, 3-wire
Number of outputs	4
Protective circuit	Short-circuit and overload protection Free running circuit
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 $\Omega$ )
Nominal load, lamp	12 W
Nominal load, ohmic	12 W

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## Classifications

### eCl@ss

eCl@ss 4.0	27250302
eCl@ss 4.1	27250302
eCl@ss 5.0	27250302
eCl@ss 5.1	27242604
eCl@ss 6.0	27242604
eCl@ss 7.0	27242604
eCl@ss 8.0	27242608

### ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201404
UNSPSC 13.2	43201404

## Approvals

### Approvals

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#### Approvals

LR / GL / BV / DNV / ABS / RINA / PROFIBUS / GL-SW / UL Recognized / cUL Recognized / GL / cULus Recognized

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#### Ex Approvals

ATEX

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#### Approvals submitted

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### Approval details

LR
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### Approvals

GL

BV


DNV


ABS

RINA



PROFIBUS

GL-SW

UL Recognized 

cUL Recognized 

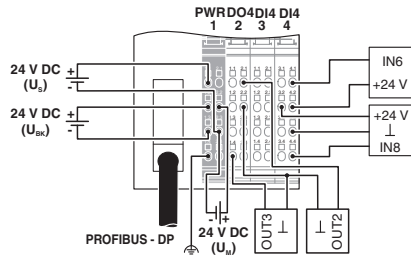
GL

cULus Recognized  

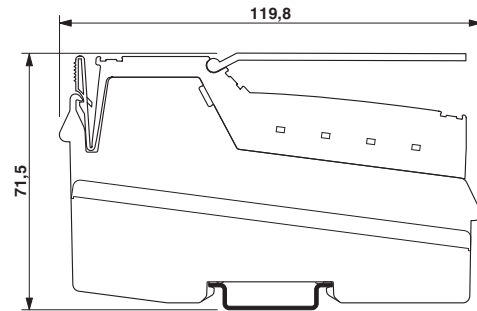
### Drawings

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

Connection diagram



Dimensioned drawing



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