

IL PB BK DI8 DO4-PAC


Order No.: 2878926



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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



Commercial data	
GTIN (EAN)	 4 046356 048637
sales group	K410
Pack	1 pcs.
Customs tariff	85389091
Catalog page information	Page 254 (AX-2009)

Product notes

WEEE/RoHS-compliant since:
06/20/2007



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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.

Technical data

General data

Width	80 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Specifications with male connectors
Weight	320 g
Note on weight specifications	with male connectors
Mounting type	DIN rail
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-45 °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
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 IEC 60068-2-6 5g
	Shock test in acc. with IEC 60068-2-27 Operation: 25 g, 11 ms duration, semi-sinusoidal shock impulse
Diagnostics messages	Short-circuit / overload of the digital outputs Yes
	Sensor supply failure Yes

Interface

Fieldbus system	Lokalbus
Name	Inline local bus
Type of connection	Inline data jumper
Transmission speed	500 Kbit / 2 MBaud
	500 kBit/s, 2 MBit/s (Automatic detection, no combined system)
Fieldbus system	PROFIBUS-DP
Name	PROFIBUS DP
Type of connection	D-SUB-9 female connector
Transmission speed	9,6 kBit/s bis 12 MBit/s
Number of positions	9

System limits of the bus coupler

Number 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)
Number of devices with parameter channel (PCP)	max. 16
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

Type of connection	Spring-cage connection
Name	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})

Inline potential routing

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 $U_M + U_S$; 4 A, maximum, when used in potentially explosive areas.)
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)
Power supply at U_S	max. 8 A DC (Sum of $U_M + U_S$; 4 A, maximum, when used in potentially explosive areas.)
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
Description of the input	EN 61131-2 type 1
Type of connection	Spring-cage connection
Connection method	2, 3-wire
Number of inputs	8
Typical response time	Approx. 500 μ s
Protective circuit	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	1.2 ms
Delay at signal change from 1 to 0	1.2 ms

Digital outputs

Output name	Digital outputs
Type of connection	Spring-cage connection
Connection method	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	1.2 VA (1.2 H; 48 Ω)
Nominal load, lamp	12 W
Nominal load, ohmic	12 W

Certificates / Approvals



Certification ABS, BV, CUL, DNV, GL, LR, UL

Certification Ex: PxC-EX

Accessories

Item	Designation	Description
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Assembly

3022218	CLIPFIX 35	Snap-on end bracket, for 35 mm NS 35/7.5 or NS 35/15 DIN rail, can be fitted with Zack strip ZB 8 and ZB 8/27, terminal strip marker KLM 2 and KLM, width: 9.5 mm, color: gray
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Marking

0809492	ESL 62X10	Insert strip for laser printer, lettering field: 62 x 10 mm
0809502	ESL 62X46	Insert strip for laser printer, lettering field: 62 x 46 mm
2727501	IB IL FIELD 2	Labeling field, width: 12.2 mm
2727515	IB IL FIELD 8	Labeling field, width: 48.8 mm

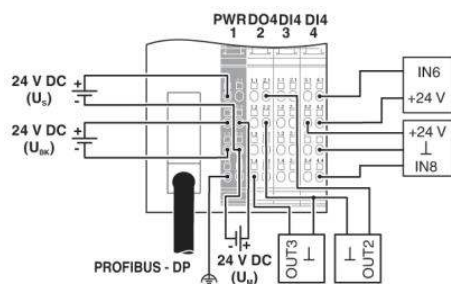
Plug/Adapter

2727611	IB IL SCN-12-ICP	Connector, color coded, for digital 4, or 16-channel Inline input terminals
2727624	IB IL SCN-12-OCP	Connector, colored identification, for digital 4, or 16-channel Inline output terminal blocks
2878599	IL BKDIO-PLSET	Connector set, for Inline bus coupler with I/Os mounted in rows

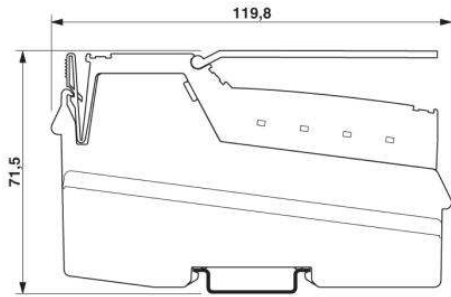
2313672	SUBCON-PLUS-PROFIB/90/IDC	D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection
2313685	SUBCON-PLUS-PROFIB/90/PG/IDC	D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB female connector for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection
2313708	SUBCON-PLUS-PROFIB/90/PG/SC	D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB female connector for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks
2313698	SUBCON-PLUS-PROFIB/90/SC	D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks
2744380	SUBCON-PLUS-PROFIB/AX/SC	D-SUB connector, 9-pos., male connector, axial version with two cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks
2708245	SUBCON-PLUS-PROFIB/PG/SC2	D-SUB connector, 9-pos., male connector, cable entry < 35°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB female connector for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks
2708232	SUBCON-PLUS-PROFIB/SC2	D-SUB connector, 9-pos., male connector, cable entry < 35°, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

Diagrams/Drawings

Connection diagram



Dimensioned drawing



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