

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

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PROFINET bus coupler, 8 inputs, 24 V DC, 4 outputs, 24 V DC, 500 mA, complete with I/O connectors

Product Description

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


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.

Your advantages

- Up to 61 terminals (16 PCP devices) can be connected
- 80 mm design width
- Approved for PROFIsafe applications
- Eight digital inputs, four digital outputs (on-board)
- Automatic speed detection of the system bus



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 041164
GTIN	4046356041164
Weight per Piece (excluding packing)	360.000 g
Custom tariff number	85176200
Country of origin	Germany

Technical data

Note

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
	Use in potentially explosive areas is not permitted in China.

Dimensions

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

Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C (observe derating)
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

Mounting type	DIN rail mounting
Color	green
Net weight	335.7 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
Mounting type	DIN rail mounting

Interfaces

Designation	PROFINET
Number	2
Connection method	RJ45 socket, auto negotiation
Transmission speed	100 Mbps (acc. to PROFINET standard)
Transmission physics	Ethernet in RJ45 twisted pair
Designation	Inline local bus
Connection method	Inline data jumper
Transmission speed	500 kbps / 2 Mbps (automatic detection, no combined system)

Network/bus system

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Technical data

Network/bus system

Amount of process data	max. 488 Byte (max. 244 bytes IN - max. 244 bytes OUT)
	max. 244 Byte (Input)
	max. 244 Byte (Output)
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

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)
Supply current	138 mA
Current consumption	typ. 138 mA (from U_{BK})
	max. 0.91 A DC (from U_{BK})
Power dissipation	typ. 3 W (entire device)

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
Supply voltage range	19.2 V DC ... 30 V DC (via Inline connector)
Current consumption	138 mA (without connected I/O terminal blocks)
	typ. 138 mA
	max. 0.91 A DC
Designation	Communications power (U_L)
Supply voltage	7.5 V DC $\pm 5\%$
Power supply unit	max. 0.8 A DC (observe derating)
Power consumption	typ. 3 W (entire device)
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 (observe derating)
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)

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Technical data

Inline potentials

Power supply unit	max. 8 A DC (Sum of $U_M + U_S$; 4 A, maximum, when used in potentially explosive areas.)
Current consumption	3 mA (without sensors)
	max. 8 A DC
Designation	Segment circuit supply (U_S)
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 $U_M + U_S$; 4 A, maximum, when used in potentially explosive areas.)
Current consumption	max. 8 A DC
Power consumption	typ. 3 W (entire device)
Current consumption	3 mA (without actuators)

Digital inputs

Input name	Digital inputs
Description of the input	EN 61131-2 type 1
Connection method	Inline connector
Connection technology	2-, 3-conductor
Number of inputs	8
Typical response time	approx. 500 μ s
Protective circuit	Reverse polarity protection Polarity protection diode
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	typ. 3 mA
Filter time	3 ms
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
Typical input current per channel	typ. 3 mA
Delay at signal change from 0 to 1	5 ms
Delay at signal change from 1 to 0	5 ms

Digital outputs

Output name	Digital outputs
Connection method	Inline connector
Connection technology	2-, 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)

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Technical data

Digital outputs

Nominal output voltage	24 V DC
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

Immunity to ESD	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
Immunity to EF	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
Immunity to burst	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
Immunity to surge	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (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
Immunity to conducted interference	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
Interference emission	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
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)

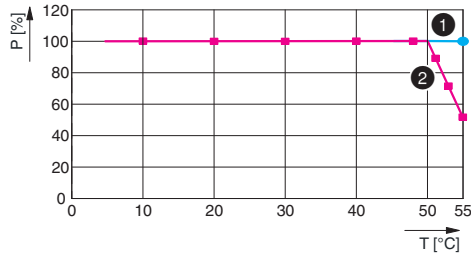
Environmental Product Compliance

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

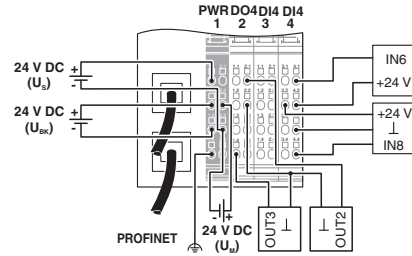
Drawings

Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Diagram



Connection diagram



Derating for different mounting positions

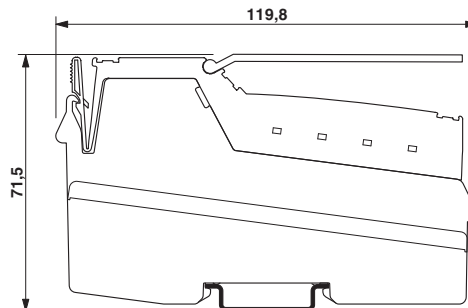
1 - Mounting on a horizontal DIN rail

2 - Other mounting positions

P [%] Power dissipation as a percentage

T [°C] Temperature in °C

Dimensional drawing



Classifications

eCl@ss

eCl@ss 10.0.1	27242608
eCl@ss 11.0	27242608
eCl@ss 4.0	27250200
eCl@ss 4.1	27250200
eCl@ss 5.0	27250200
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242608
eCl@ss 8.0	27242608
eCl@ss 9.0	27242608

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Classifications

ETIM

ETIM 2.0	EC001434
ETIM 3.0	EC001604
ETIM 4.0	EC001604
ETIM 5.0	EC001604
ETIM 6.0	EC001604
ETIM 7.0	EC001604

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201404
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals

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Approvals

DNV GL / BV / LR / ABS / RINA / UL Listed / cUL Listed / PROFINET / cULus Listed

Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Listed

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAA00000BN
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BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	20989/B2_BV
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Bus coupler - IL PN BK DI8 DO4 2TX-PAC - 2703994

Approvals

LR		http://www.lr.org/en	08/20033
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ABS		http://www.eagle.org/eagleExternalPortalWEB/	17-HG1621871-PDA
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RINA		http://www.rina.org/en	ELE001320XG
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UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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PROFINET			Z10506
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cULus Listed			
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Accessories

Accessories

Connector set

Connector set - IL BKDIO-PLSET - 2878599



Connector set, for Inline bus coupler with I/Os mounted in rows

Data cable by the meter

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Accessories

Network cable - FL CAT5 HEAVY - 2744814



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm², solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

Installation cable - FL CAT5 FLEX - 2744830



By the meter, Installation cable, Ethernet CAT5 (100 Mbps), shielded, PUR halogen-free, water blue RAL 5021, 4-wire (2x2xAWG26/7; SF/UTP), color single wire: white/orange-orange, white/green-green, cable length: Free entry (1.0 ... 1000.0 m)

Data plug

Assembly tool - FL CRIMPTOOL - 2744869



Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

End block

End clamp - CLIPFIX 35 - 3022218



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

End clamp - E/UK - 1201442



End clamp, width: 9.5 mm, height: 35.3 mm, material: PA, length: 50.5 mm, Mounting on a DIN rail NS 32 or NS 35, color: gray

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Accessories

Labeling panel

Labeling field - IB IL FIELD 8 - 2727515

Labeling field, width: 48.8 mm



Labeling field - IB IL FIELD 2 - 2727501

Labeling field, width: 12.2 mm



Plug

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.



RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.



Terminal marking

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Accessories

Insert strip - ESL 62X46 - 0809502

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 46 mm, Number of individual labels: 120



Insert strip - ESL 62X10 - 0809492

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72

