

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 PROFI-safe applications
- Eight digital inputs, four digital outputs (on-board)
- Automatic speed detection of the system bus



Key Commercial Data

| | |
|--------------|---------------|
| Packing unit | 1 pc |
| GTIN | |
| GTIN | 4046356041164 |

Technical data

Note

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

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 ... 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 |
| No. of channels | 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

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

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Technical data

Power supply for module electronics

| | |
|---------------------|--|
| 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 ±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) |
| 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-wire |

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Technical data

Digital inputs

| | |
|------------------------------------|---|
| Number of inputs | 8 |
| Typical response time | approx. 500 µs |
| 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-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 |
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |

Environmental Product Compliance

| | |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

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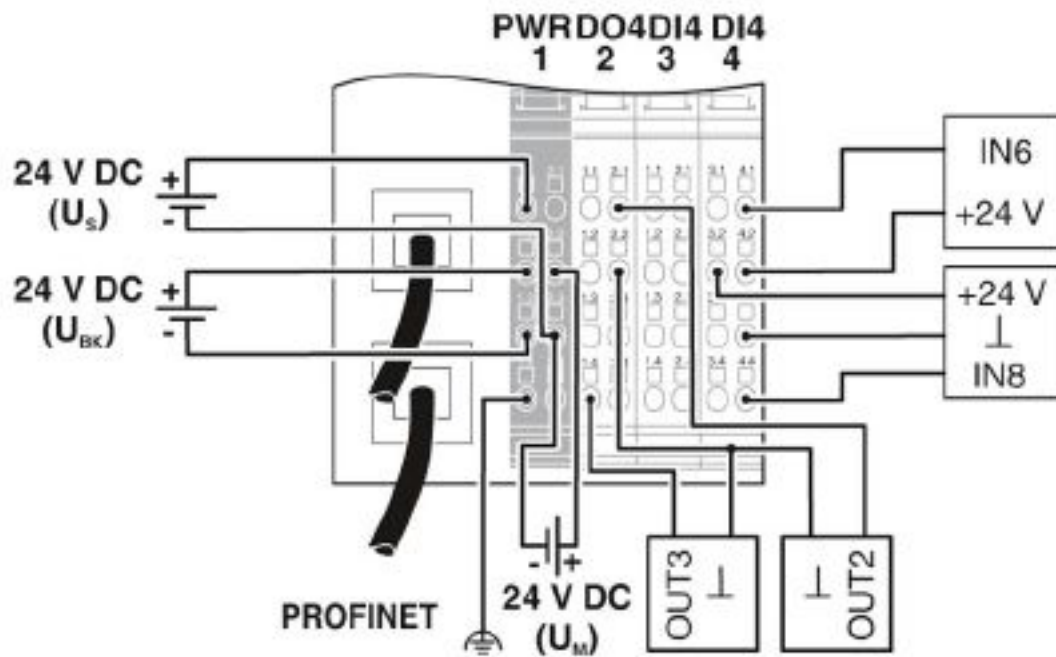
Technical data

Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

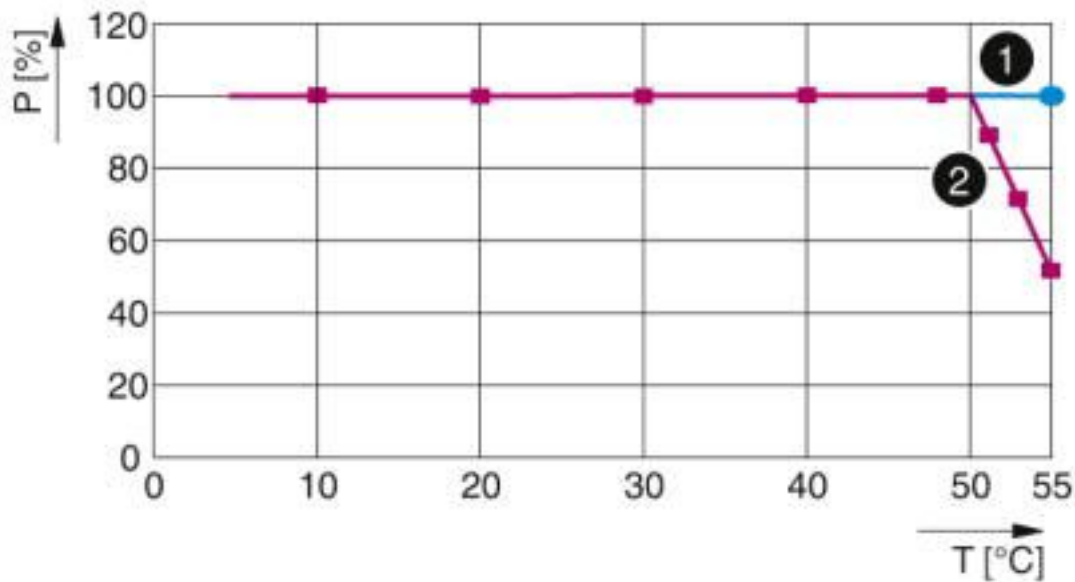
Drawings

Connection diagram



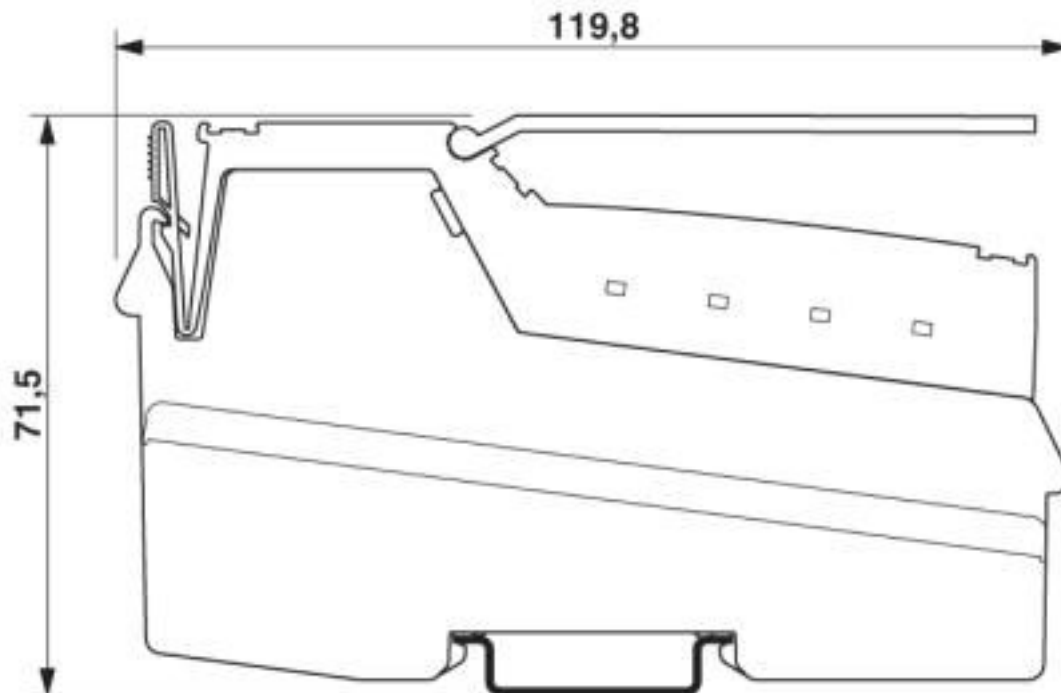
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Diagram



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



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Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 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 |

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

Approvals

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

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Approvals

| | | | |
|--------------|--|---|------------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAA00000BN |
| BV | | http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials | 20989/B2_BV |
| LR | | http://www.lr.org/en | 08/20033 |
| ABS | | http://www.eagle.org/eagleExternalPortalWEB/ | 17-HG1621871-PDA |
| RINA | | http://www.rina.org/en | ELE001320XG |
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 140324 |
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 140324 |
| PROFINET | | | Z10506 |
| cULus Listed | | | |

Accessories

Accessories

Connector set

Connector set - IL BKDIO-PLSET - 2878599



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

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Accessories

Data cable by the meter

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

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



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Accessories

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

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