

## Bus coupler - IL EIP BK DI8 DO4 2TX-PAC - 2897758

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EtherNet/IP™ 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 EtherNet/IP™ 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.

### Product Features

- Up to 61 terminals (16 PCP devices) can be connected
- 8 digital inputs, 4 digital outputs onboard
- EtherNet/IP™, Version 1.2
- Web-based management
- 2 RJ45 connections
- Automatic speed detection of the system bus
- Diagnostic and status indicators
- 80 mm design width



### Key Commercial Data

|                                      |          |
|--------------------------------------|----------|
| Packing unit                         | 1 pc     |
| Weight per Piece (excluding packing) | 340.0 g  |
| 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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## Technical data

### 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                                  |
| 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  |
| Net weight                    | 320 g   |
| Note on weight specifications | with connectors                                     |
| Diagnostics messages          | Short-circuit / overload of the digital outputs Yes |
|                               | Sensor supply failure Yes                           |
|                               | Failure of the actuator supply Yes                  |

### Interfaces

|                                     |   |
|-------------------------------------|---|
| Fieldbus system                     | EtherNet/IP™  |
| Designation                         | EtherNet/IP™  |
| Connection method                   | RJ45 socket   |
| Note on connection method           | Auto negotiation and autocrossing                               |
| Transmission speed                  | 10/100 MBit/s (half or full duplex (automatic detection))       |
| Transmission physics                | Ethernet in RJ45 twisted pair                                   |
| Permissible conductor cross section | 0.14 mm² ... 0.22 mm² (twisted pair)                            |
| Fieldbus system                     | Lokalbus  |
| Designation                         | Inline local bus  |
| 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. 512 Byte (per station)      |
| Number of supported devices | max. 63 (per station)            |

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### Technical data

#### System limits of the bus coupler

|   |   |
|---|---|
| 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. 8                                  |
| 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             | typ. 70 mA   |
| Current consumption        | max. 0.98 A (from $U_{BK}$ )   |
| Power dissipation          | typ. 3 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 circuit supply $U_S$   | 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 $U_M + U_S$ )                                  |
| 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 |
| Connection method        | Inline connector  |
|                          | 3-conductor       |
| Number of inputs         | 8                 |

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## Technical data

### Digital inputs

|  |  |
|--|--|
| Typical response time                    | approx. 500 µs                               |
| Protective circuit                       | Reverse polarity protection Suppressor 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 <sub>IN</sub> | 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  |
| Connection method                                  | Inline connector   |
|  | 3-conductor  |
| 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 Ω)  |
| Nominal load, lamp                                 | 12 W   |
| Nominal load, ohmic                                | 12 W   |

### Standards and Regulations

|                                |   |
|--------------------------------|---|
| Conformity 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 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 |
|                                | 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   |

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### Standards and Regulations

|                                  |   |
|----------------------------------|---|
|                                  | 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  |

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27250203 |
| eCl@ss 4.1 | 27250203 |
| eCl@ss 5.0 | 27250203 |
| eCl@ss 5.1 | 27242608 |
| eCl@ss 6.0 | 27242608 |
| eCl@ss 7.0 | 27242608 |
| eCl@ss 8.0 | 27242604 |
| eCl@ss 9.0 | 27242604 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001434 |
| ETIM 3.0 | EC001604 |
| ETIM 4.0 | EC001604 |
| 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

UL Recognized / cUL Recognized / cULus Recognized

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### Approvals

Ex Approvals

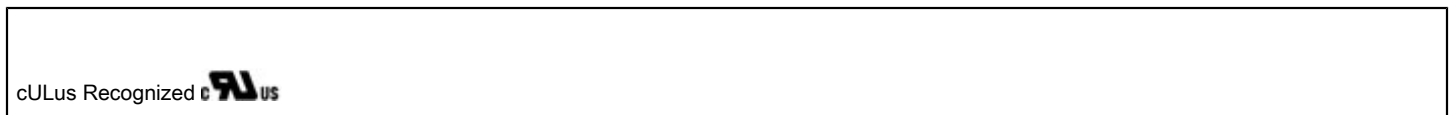
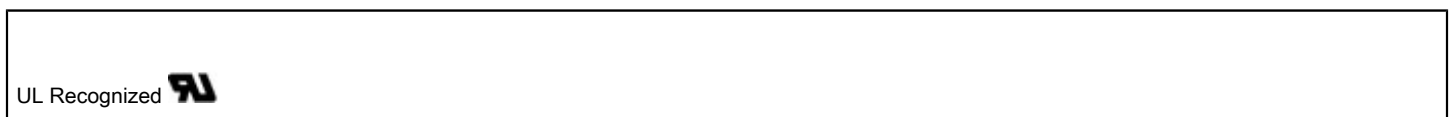
UL Listed / cUL Listed / cULus Listed

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Approvals submitted

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### Approval details



### 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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Data cable by the meter

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 mm<sup>2</sup>, solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

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### Accessories

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Network cable - FL CAT5 FLEX - 2744830



CAT5-SF/UTP cable (J-LI02YS(ST)C H 2 x 2 x 26 AWG), light-duty, flexible installation cable 2 x 2 x 0.14 mm<sup>2</sup>, stranded, shielded, outer sheath: 5.75 mm ± 0.15 mm diameter

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### 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

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End clamp - E/UK - 1201442



End clamp, Width: 9.5 mm, Height: 35.3 mm, Length: 50.5 mm, Color: gray

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### Labeling panel

Labeling field - IB IL FIELD 8 - 2727515

Labeling field, width: 48.8 mm



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### Accessories

Labeling field - IB IL FIELD 2 - 2727501

Labeling field, width: 12.2 mm



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### 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.



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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.



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### Terminal marking

Insert strip - ESL 62X46 - 0809502

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, Plotter: Laser printer, Mounting type: Insert, Lettering field: 62 x 46 mm



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Insert strip - ESL 62X10 - 0809492

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, Plotter: Laser printer, Mounting type: Insert, Lettering field: 62 x 10 mm





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## Accessories

### Universal tools

Assembly tool - FL CRIMPTOOL - 2744869



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

### Software - IPASSIGN - 2701094

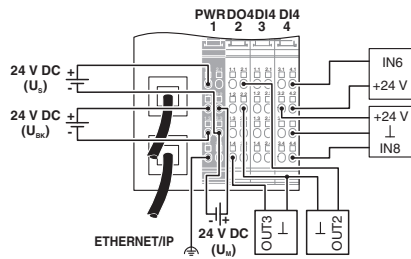


IPAssign is an easy to use tool for setting the IP address of devices which rely on BOOTP. No installation or administrative rights are required to use IPAssign.

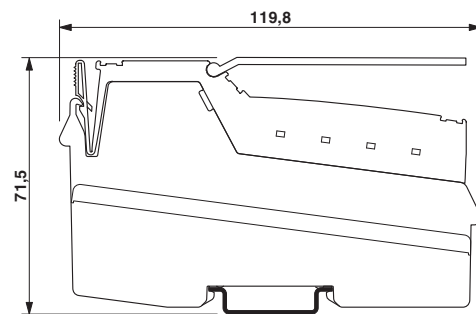
This product is free and only available from the "Downloads" tab.

## Drawings

Connection diagram



Dimensional drawing



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