

IL EIP BK DI8 DO4 2TX-XC-PAC - Bus coupler



2702131

<https://www.phoenixcontact.com/us/products/2702131>

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Inline, Bus coupler, EtherNet/IP™, RJ45 jack, Digital inputs: 8, 24 V DC, connection technology: 3-conductor, Digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor, Extreme conditions version, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including Inline connectors and marking fields

Product description

The bus coupler with integrated I/Os is intended for use within an EtherNet/IP™ network and represents the link to the Inline I/O system. Up to 61 Inline devices can be connected to the bus coupler. The bus coupler supports a maximum of 8 PCP devices. A corresponding EDS file is available for integrating the Inline station into the programming system. This file can be downloaded via the product at www.phoenixcontact.com/products. Thanks to special engineering measures and tests, the terminal can be used under extreme ambient conditions.

Your advantages

- 8 digital inputs, 4 digital outputs (on-board)
- EtherNet/IP™, Version 1.2
- Web-based management
- 2 RJ45 connections
- Automatic detection of the transmission speed in the local bus (500 kbps or 2 Mbps)
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Coated PCBs

Commercial data

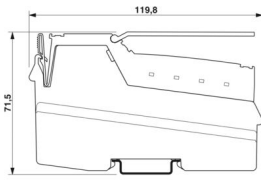
| | |
|--------------------------------------|--------------------------------|
| Item number | 2702131 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | DR01 |
| Product key | DRI11D |
| GTIN | 4046356981071 |
| Weight per piece (including packing) | 360.3 g |
| Weight per piece (excluding packing) | 329 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

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Technical data

Dimensions

| | |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width | 80 mm |
| Height | 119.8 mm |
| Depth | 71.5 mm |
| Note on dimensions | Specifications with connectors |

Material specifications

| | |
|-------|-------|
| Color | green |
|-------|-------|

Interfaces

EtherNet/IP™

| | |
|-------------------------------------|--------------------------------------------------------------|
| Number of interfaces | 2 |
| Connection method | RJ45 jack |
| Note on the connection method | Auto negotiation and autocrossing |
| Permissible conductor cross-section | 0.14 mm ² ... 0.22 mm ² (twisted pair) |
| Transmission speed | 10/100 Mbps (half or full duplex (automatic detection)) |
| Transmission physics | Ethernet in RJ45 twisted pair |

Inline local bus

| | |
|--------------------|-------------------------------------------------------------|
| Connection method | Inline data jumper |
| Transmission speed | 500 kbps / 2 Mbps (automatic detection, no combined system) |

Fieldbus: Local bus gateway

| | |
|----------------------------------|----------------------------------------|
| Max. number of local bus devices | 61 (The on-board I/Os are two devices) |
|----------------------------------|----------------------------------------|

System properties

System limits

| | |
|-------------------------------------------------------------|---------------------------------------------|
| Amount of process data () | max. 504 Byte |
| Amount of process data () | max. 504 Byte |
| 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. 8 |
| Number of supported branch terminals with remote bus branch | 0 |

Programming data

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| | |
|--------------------------|----------|
| Input address area | 8 bit |
| Output address area | 4 bit |
| Register length (bus) | 16 bit |
| Register length (master) | 512 Byte |

Input data

Digital:

| | |
|------------------------------------|-----------------------------------------------|
| Input name | Digital inputs |
| Description of the input | EN 61131-2 type 1 |
| Number of inputs | 8 |
| Connection method | Inline connector |
| Connection technology | 3-conductor |
| 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 voltage U_{IN} | 24 V DC |
| Nominal input current at U_{IN} | typ. 3 mA |
| Current flow | Limited to 3 mA, maximum |
| Typical input current per channel | typ. 3 mA |
| Typical response time | approx. 500 μ s |
| Delay at signal change from 0 to 1 | 1.2 ms |
| Delay at signal change from 1 to 0 | 1.2 ms |
| Protective circuit | Reverse polarity protection; Suppressor diode |

Output data

Digital:

| | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------|
| Output name | Digital outputs |
| Connection method | Inline connector |
| Connection technology | 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) |
| Max. current carrying capacity per output | max. 500 mA |
| Maximum output current per module | max. 2 A |
| Nominal output voltage | 24 V DC |
| Output current when switched off | max. 10 μ A (When not loaded, a voltage can be measured even at an output that is not set.) |
| Nominal load, inductive | 12 VA (1.2 H, 48 Ω) |
| Nominal load, lamp | 12 W |
| Nominal load, ohmic | 12 W |
| Reverse voltage resistance to short pulses | Reverse voltage proof |
| Behavior with overload | Auto restart |
| Behavior with inductive overload | Output can be destroyed |

| | |
|--------------------------------|---------------------------------------------------|
| Behavior at voltage switch-off | The output follows the power supply without delay |
| Signal delay | typ. 1.2 ms |
| Overcurrent shut-down | min. 0.7 A |

Product properties

| | |
|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| Product type | I/O component |
| Product family | Inline |
| Type | modular Inline |
| Scope of supply | including Inline connectors and marking fields |
| No. of channels | 12 |
| Special properties | Extreme conditions version |
| Diagnosics messages | Short-circuit or overload of the digital outputs yes Sensor supply failure yes Failure of the actuator supply yes |

Electrical properties

| | |
|-------------------|----------------------------|
| Power dissipation | typ. 1.7 W (entire device) |
|-------------------|----------------------------|

Potentials

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Protective circuit | Short-circuit protection of the communications power; electronic Short-circuit protection of the analog supply; electronic |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------|

Potentials: Bus coupler supply U_{BK} ; 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 draw | max. 0.98 A min. 80 mA (without connected I/O terminal blocks) |

Potentials: Communications power (U_L)

| | |
|----------------|---------------|
| Supply voltage | 7.5 V DC |
| Power supply | max. 0.8 A DC |

Potentials: 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 | max. 0.5 A DC |

Potentials: Main circuit supply (U_M)

| | |
|----------------------|--------------------------------------------------------------------|
| Supply voltage | 24 V DC (via Inline connector) |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Power supply | max. 8 A DC (sum of $U_M + U_S$) |
| Current draw | max. 8 A DC min. 3 mA (without sensors) |

Potentials: Segment circuit supply (U_S)

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| | |
|----------------------|--------------------------------------------------------------------|
| Supply voltage | 24 V DC (via Inline connector) |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Power supply | max. 8 A DC (sum of $U_M + U_S$) |
| Current draw | max. 8 A DC min. 6 mA (without actuators) |

Connection data

Connection technology

| | |
|-----------------|------------------|
| Connection name | Inline connector |
|-----------------|------------------|

Inline connector

| | |
|-----------------------------------|----------------------------------------------|
| Connection method | Spring-cage connection |
| Conductor cross-section, rigid | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 28 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature (operation) | -25 °C ... 60 °C (Standard) -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.) |
| Degree of protection | IP20 |
| 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) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |

Mechanical test

| | |
|--------------------------------------------------------------------|---------------------------------------------------------------|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse |

Standards and regulations

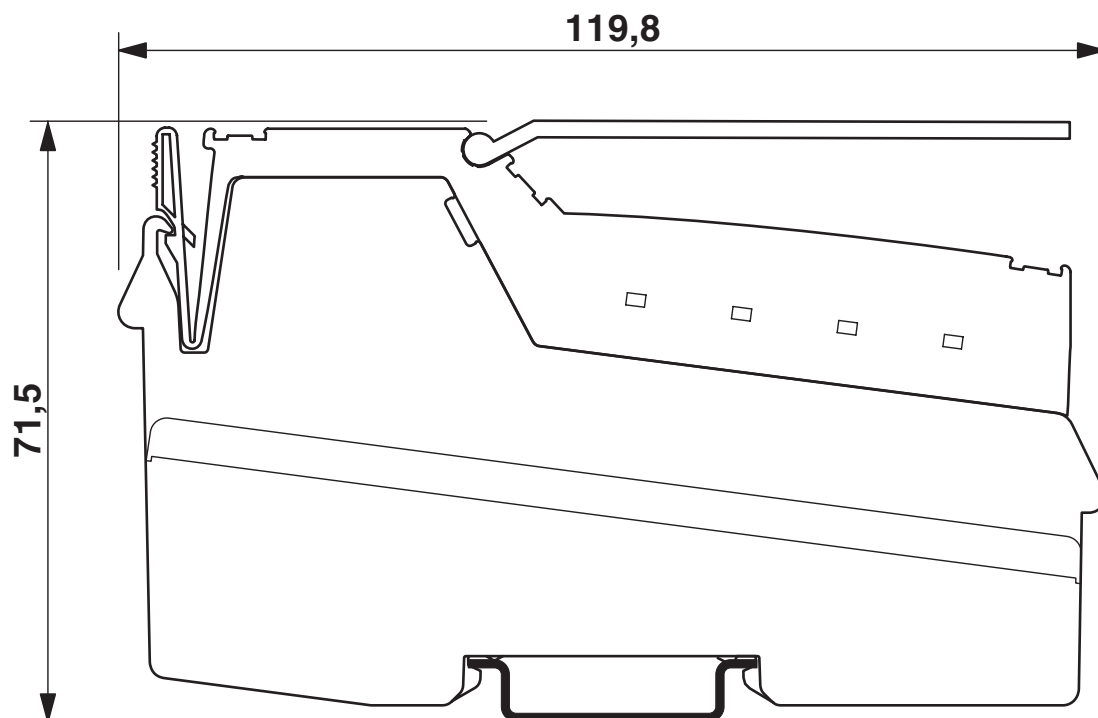
| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

Drawings

Dimensional drawing



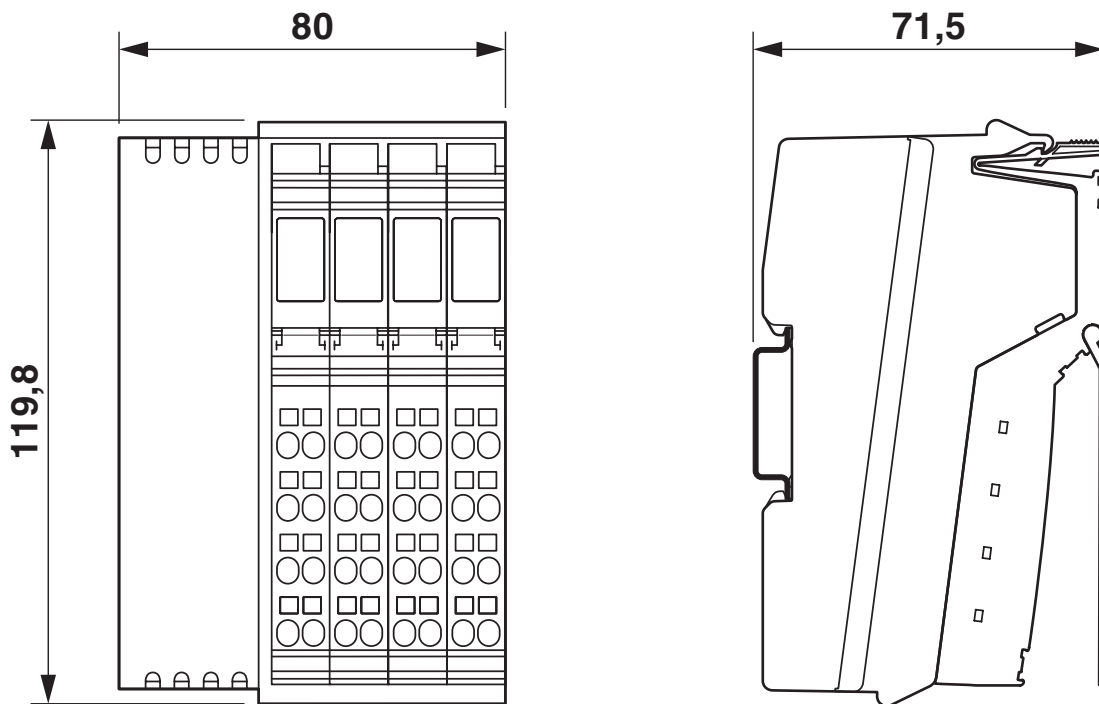
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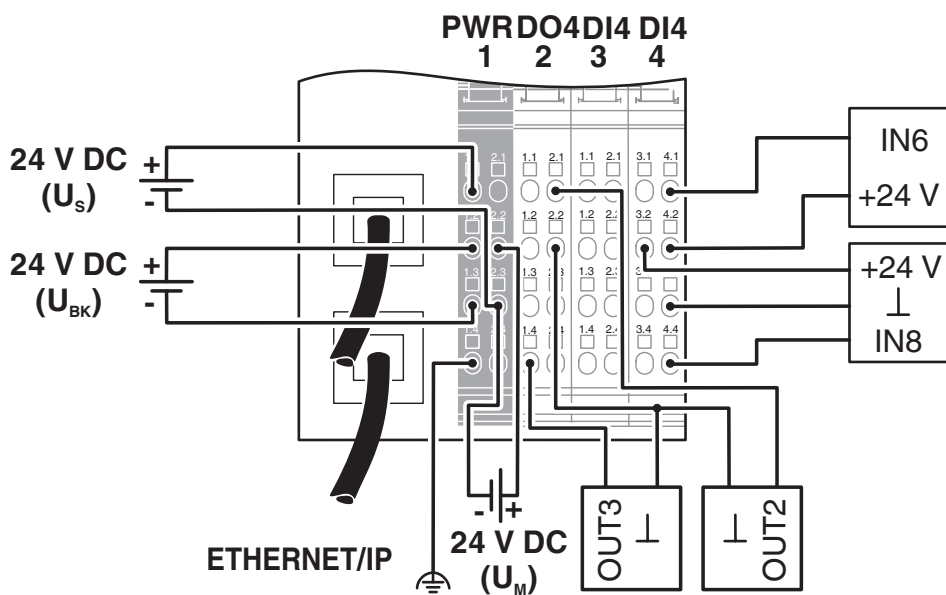
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Dimensional drawing



Connection diagram



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Environmental product compliance

China RoHS

| | |
|----------------------------------------|------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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