

IL PN BK-PAC - Bus coupler



2403696

<https://www.phoenixcontact.com/us/products/2403696>

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Inline, Bus coupler, PROFINET, RJ45 jack, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including Inline connector

Product description

The bus coupler is intended for use within a PROFINET network. The bus coupler creates the link to the Inline I/O system and the industrial I/O signals connected to it. Up to 63 Inline devices can be connected to the bus coupler. Device descriptions for Phoenix Contact controllers are integral parts of the engineering tools PC Worx and PLCnext Engineer. Corresponding GSDML files are available for integrating the Inline station into other programming systems. These files can be downloaded at: www.phoenixcontact.net/product/2403696.

Your advantages

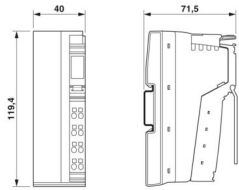
- 2 Ethernet ports (with integrated switch)
- Conformance with PROFINET specification V2.3
- Supports PROFI-safe (firmware version 1.10 or later)
- Supports PROFINET S2 system redundancy (firmware version 1.10 or later)
- PROFINET RT and IRT
- Minimum cycle time of PROFINET for RT and IRT is 250 μ s
- Automatic detection of the transmission speed in the local bus (500 kbps or 2 Mbps)
- Support for three branch terminals as a remote bus branch (32 remote bus devices in total)
- Web-based management

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2403696 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DRI11A |
| GTIN | 4055626346137 |
| Weight per piece (including packing) | 168.8 g |
| Weight per piece (excluding packing) | 168.5 g |
| Customs tariff number | 85176200 |
| Country of origin | DE |

Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 40 mm |
| Height | 119.4 mm |
| Depth | 71.5 mm |
| Note on dimensions | Housing dimensions |

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Interfaces

| | |
|---------------------|----------|
| Supported protocols | PROFINET |
| | TFTP |
| | PTCP |
| | LLDP |
| | SNMP |
| | MRP |
| | DCP |

PROFINET

| | |
|-------------------------------|--------------------------------------|
| Number of interfaces | 2 |
| Connection method | RJ45 jack |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission speed | 100 Mbps (acc. to PROFINET standard) |
| Transmission physics | Ethernet in RJ45 twisted pair |

Inline local bus

| | |
|----------------------|---|
| Number of interfaces | 1 |
| Connection method | Inline data jumper |
| Transmission speed | 500 kbps / 2 Mbps (automatic detection, no combined system) |

System properties

System limits

| | |
|----------------------------|-------------------------|
| Amount of process data () | max. 1012 Byte (Input) |
| Amount of process data () | max. 1012 Byte (Output) |

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| | |
|---|-----------------------|
| Number of supported devices | max. 63 (per station) |
| Number of local bus devices that can be connected | max. 63 |
| Number of devices with parameter channel | max. 16 |
| Number of supported branch terminals with remote bus branch | 3 |

PROFINET

| | |
|-------------------|---------------------|
| Device function | PROFINET device |
| Specification | Version 2.3 |
| Conformance Class | Conformance Class C |
| Device ID | 0140 _{hex} |
| Vendor ID | 00B0 _{hex} |

Module

| | |
|-----------------|--------|
| ID code (hex) | none |
| Register length | 16 bit |

Product properties

| | |
|-------------------|----------------------------|
| Product type | I/O component |
| Product family | Inline |
| Type | modular |
| Mounting position | any |
| Scope of supply | including Inline connector |
| No. of channels | 12 |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|---|-------|
| Maximum power dissipation for nominal condition | 3.8 W |
|---|-------|

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. 0.91 A DC (with max. number of connected I/O terminal blocks) typ. 85 mA (no local bus devices connected) |

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 |

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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 $U_M + U_S$) |

Potentials: Segment circuit supply (U_S)

| | |
|----------------------|--|
| 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 $U_M + U_S$) |

Electrical isolation/isolation of the voltage ranges

| | |
|---|-------------------------|
| Test voltage: PROFINET interface 1 / PROFINET interface 2 | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 1 / communications power (U_{BK} , U_L , U_{ANA}) | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 1 / I/O (U_M , U_S) | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 1 / functional ground | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 2 / communications power (U_{BK} , U_L , U_{ANA}) | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 2 / I/O (U_M , U_S) | 1500 V AC, 50 Hz, 1 min |
| Test voltage: PROFINET interface 2 / functional ground | 1500 V AC, 50 Hz, 1 min |
| Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / I/O (U_M , U_S) | 500 V AC, 50 Hz, 1 min |
| Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: I/O (U_M , U_S) / functional ground | 500 V AC, 50 Hz, 1 min |

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 ... 55 °C |
| 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) |

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| | |
|--|--------------------------------|
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |
|--|--------------------------------|

Standards and regulations

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

Mounting

| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |

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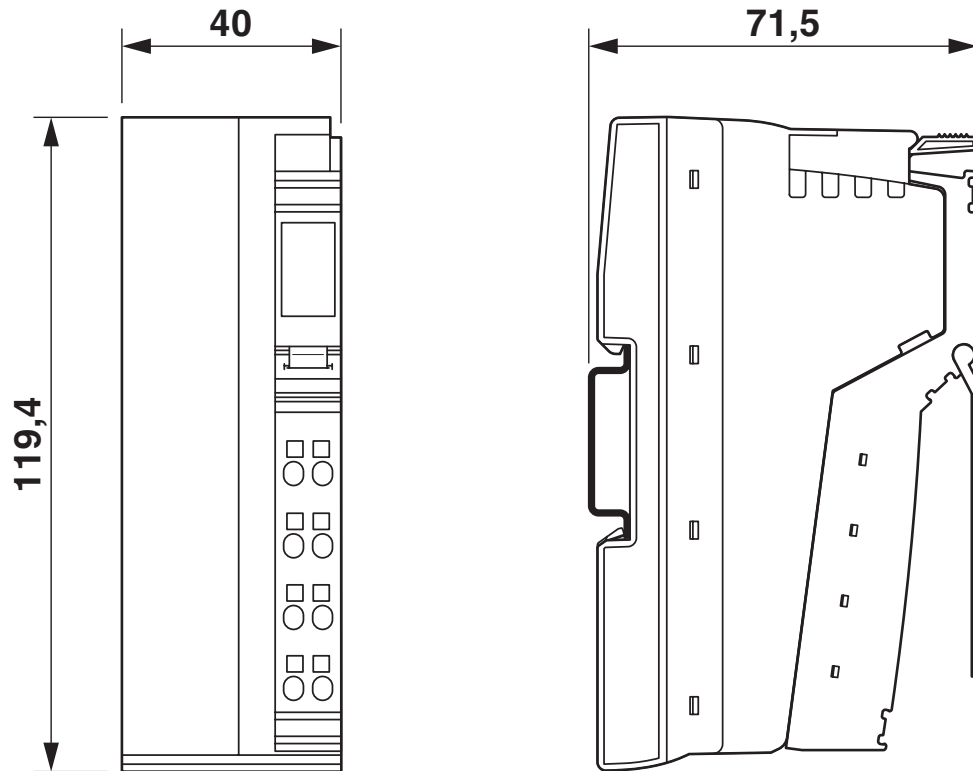
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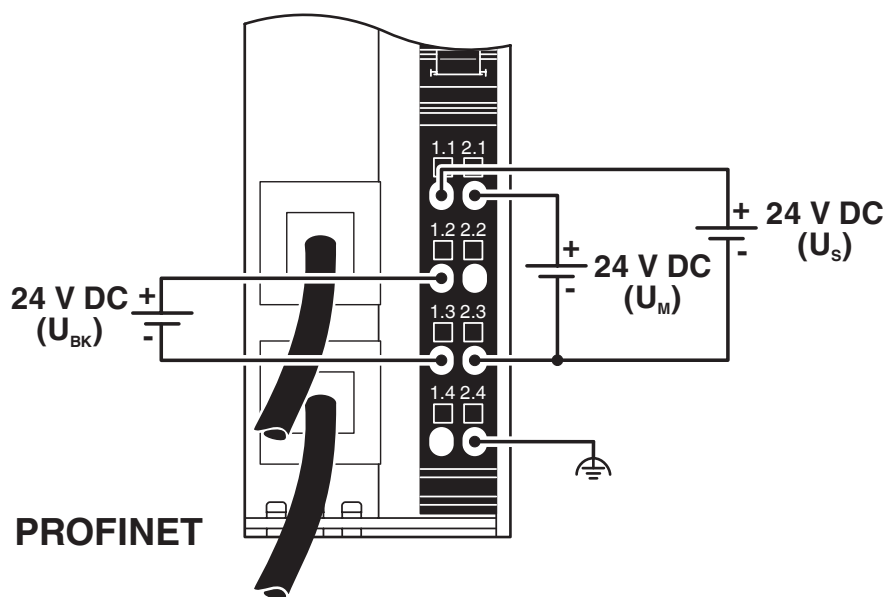


Drawings

Dimensional drawing



Connection diagram



Connection of the cables

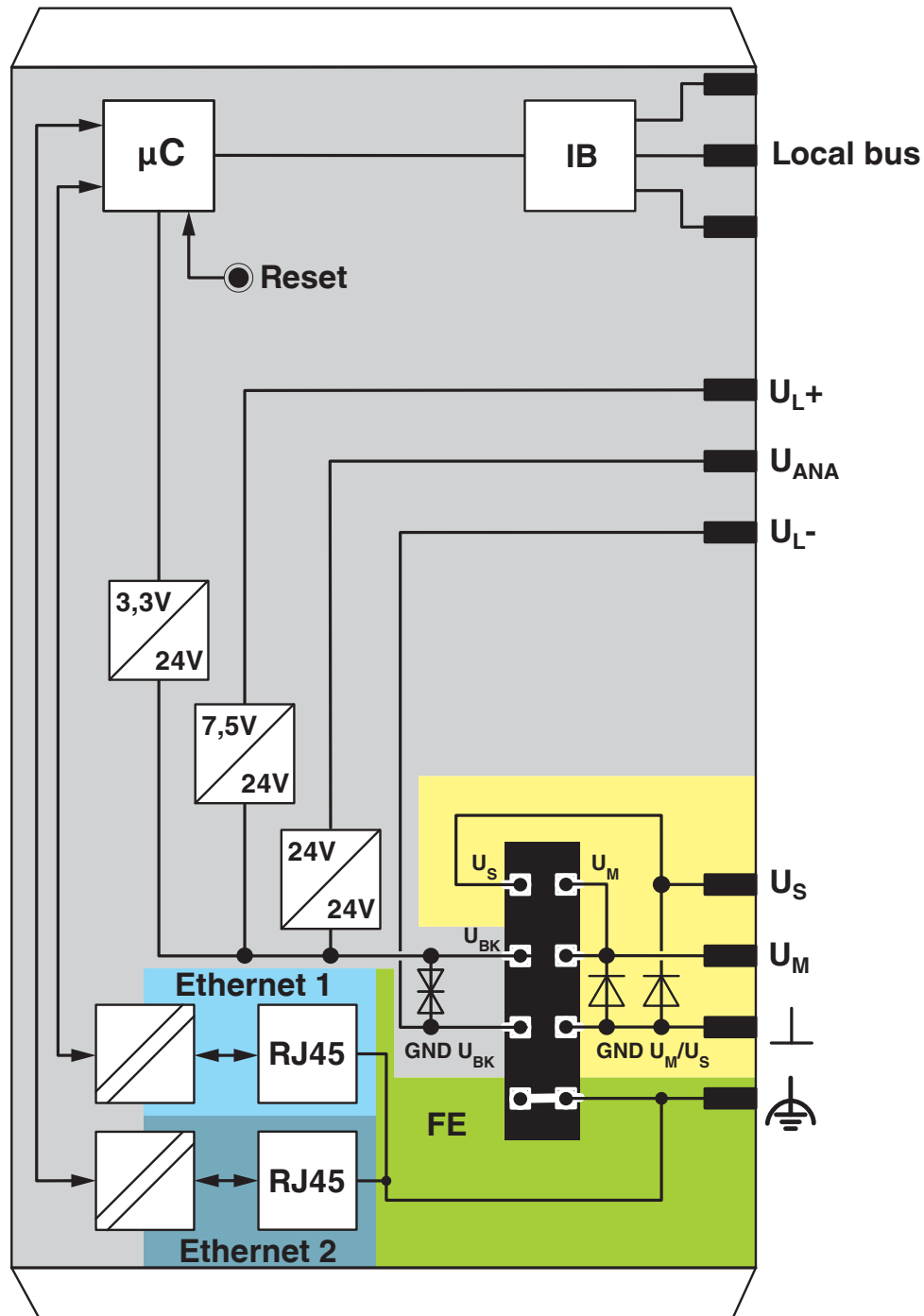
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Block diagram



Internal wiring of connections

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2403696>



DNV GL

Approval ID: TAA00000BN



BV

Approval ID: 20989_C1 BV

BSH

Approval ID: 658a

ABS

Approval ID: 22-2226444-PDA

PROFINET

Approval ID: Z13114



cULus Listed

Approval ID: E238705

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242608 |
| ECLASS-15.0 | 27242608 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001604 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | f8789c3f-1261-4bb4-8c3d-0a1d68580b3e |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 7.379 kg CO2e |
|---------|---------------|

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