

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

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

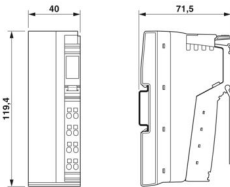
- 2 Ethernet ports (with integrated switch)
- Conformance with PROFINET specification V2.3
- Supports PROFIsafe (as of firmware version 1.10)
- Supports PROFINET S2 system redundancy (as of firmware version 1.10)
- PROFINET RT and IRT
- Minimum cycle time of PROFINET for RT and IRT is 250 µs
- Automatic 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
Catalog page	Page 104 (C-6-2019)
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

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		
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}	

IL PN BK-PAC - Bus coupler



2403696

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

Vendor ID	00B0 _{hex}
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Module

ID code (hex)	none
Register length	16 bit

Product properties

Product type	I/O component
Product family	Inline
Type	modular
Mounting position	any
No. of channels	12

Data management status

Article revision	06
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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	max. 2.2 W
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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
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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)

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)

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)

Electrical isolation/isolation of the voltage ranges

Test voltage: PROFINET interface 1 / PROFINET interface 2	1500 V AC, 50 Hz, 1 min.
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2403696

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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: Logic (U_{BK} , U_L , U_{ANA}) / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min.
Test voltage: Logic (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
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Conductor connection

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

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

Standards and regulations

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

Mounting type	DIN rail mounting
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Mounting position	any
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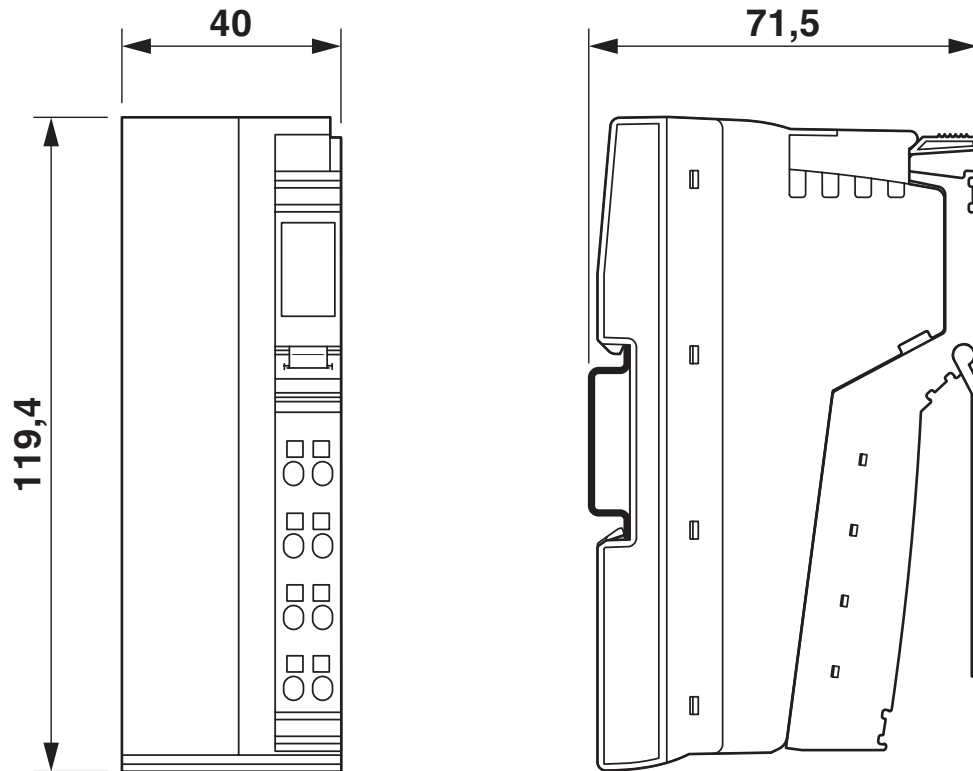
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Drawings

Dimensional drawing



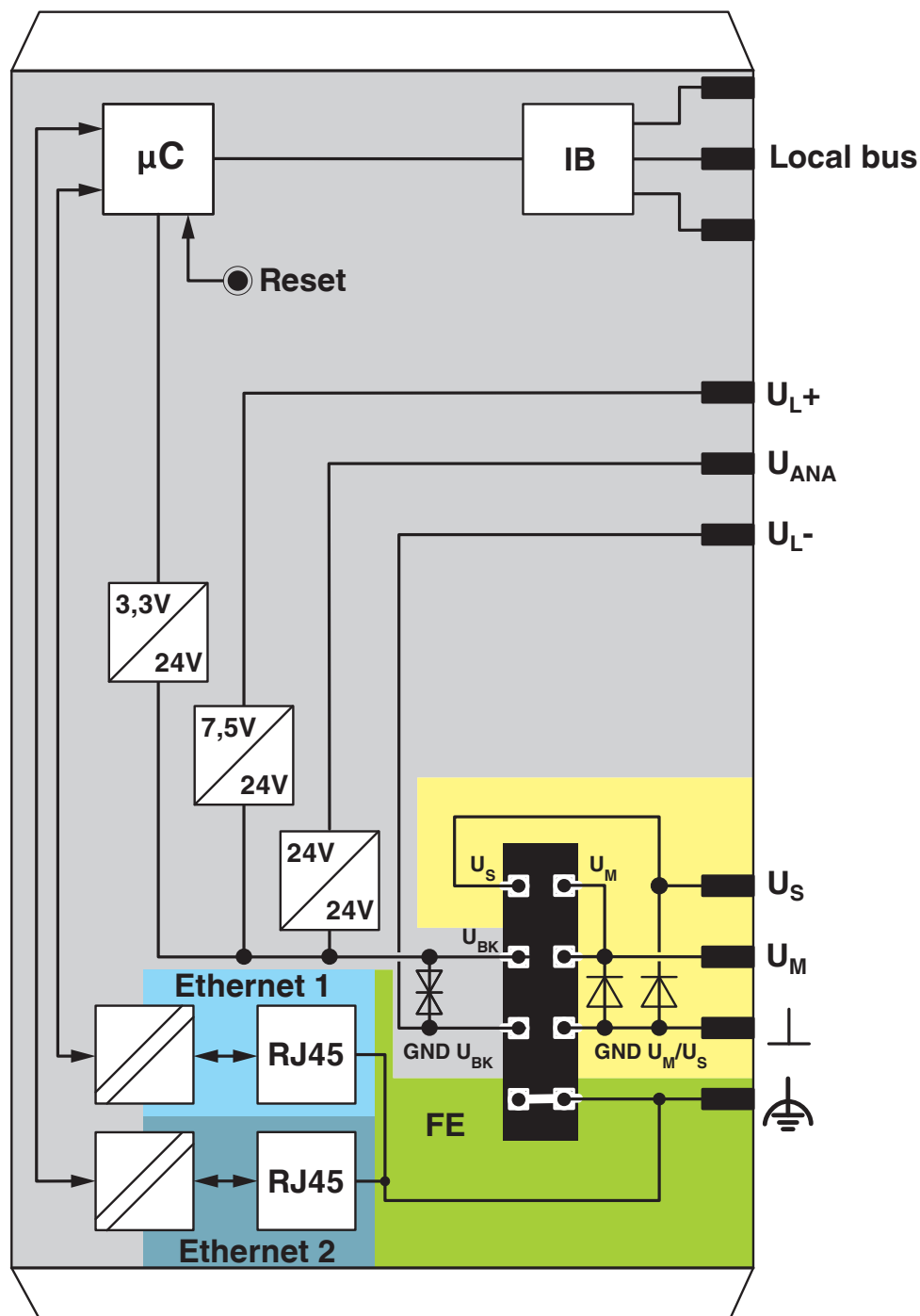
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Block diagram



Internal wiring of connections

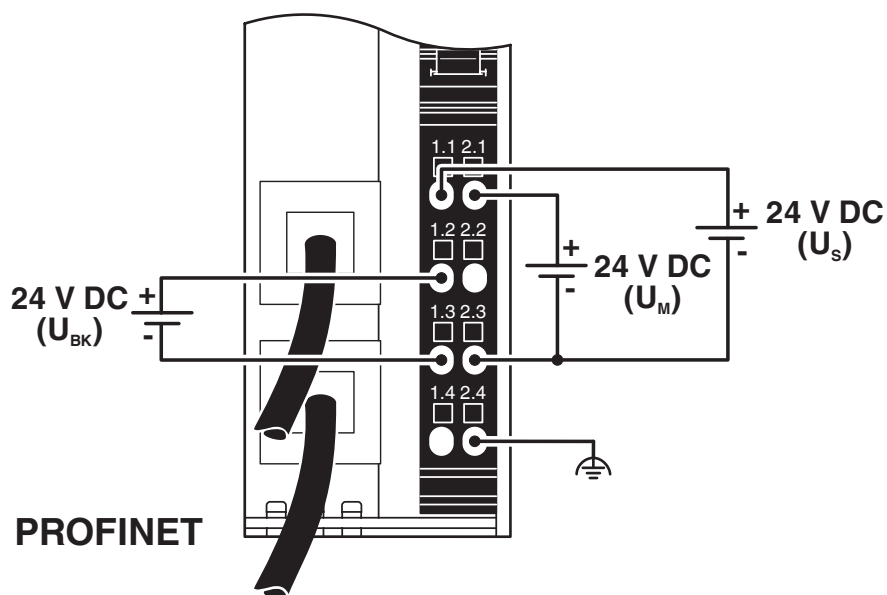
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Connection diagram



Connection of the cables

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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



LR

Approval ID: LR23398855TA



BV

Approval ID: 20989_C0 BV

BSH

Approval ID: 658a

ABS

Approval ID: 22-2226444-PDA

PROFINET

Approval ID: Z13114

UAE-RoHS

Approval ID: 22-04-13087

PROFINET

Approval ID: Z13114



cULus Listed

Approval ID: E238705

ABS

Approval ID: 22-2226444-PDA

BSH

Approval ID: 658a

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BV

Approval ID: 20989_C0 BV



DNV GL

Approval ID: TAA00000BN



cULus Listed

Approval ID: E238705

UAE-RoHS

Approval ID: 22-04-13087

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Classifications

ECLASS

ECLASS-11.0	27242608
ECLASS-12.0	27242608
ECLASS-13.0	27242608

ETIM

ETIM 9.0	EC001604
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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
EF3.0 Climate Change	
CO2e kg	7.379 kg CO2e

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Accessories

IB IL FIELD 2 - Marking field

2727501

<https://www.phoenixcontact.com/us/products/2727501>

Marking field, width: 12.2 mm



ESL 62X10 - Insert strip

0809492

<https://www.phoenixcontact.com/us/products/0809492>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, CMS-P1-PLOTTER, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72



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CLIPFIX 35-5 - End bracket

3022276

<https://www.phoenixcontact.com/us/products/3022276>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

CLIPFIX 35 - End bracket

3022218

<https://www.phoenixcontact.com/us/products/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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FL PLUG RJ45 GR/2 - RJ45 connector

2744856

<https://www.phoenixcontact.com/us/products/2744856>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, connection cross section: AWG 26- 24, cable outlet: straight, color: gray, Ethernet

FL PLUG RJ45 GN/2 - RJ45 connector

2744571

<https://www.phoenixcontact.com/us/products/2744571>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

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FL CAT5 HEAVY - Data cable

2744814

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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

FL CAT5 FLEX - Installation cable

2744830

<https://www.phoenixcontact.com/us/products/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)

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FL CRIMPTOOL - Assembly tool

2744869

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



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