

AXL F BK PN TPS - Bus coupler



2403869

<https://www.phoenixcontact.com/us/products/2403869>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Axioline F, Bus coupler, PROFINET, RJ45 jack, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector

Product description

The bus coupler is intended for use within a PROFINET network. The bus coupler creates the link to the Axioline F I/O system and the industrial I/O signals connected to it. Up to 63 Axioline F 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 Axioline F station into other programming systems. These files can be downloaded at:

Your advantages

- 2 Ethernet ports (with integrated switch)
- Conformance with PROFINET specification V2.3
- Supports PROFIsafe
- Supports PROFIenergy
- Supports PROFINET S2 system redundancy (firmware version 1.30 or later)
- PROFINET RT and IRT
- Minimum cycle time of PROFINET for RT and IRT is 250 µs
- Firmware can be updated
- Runtime in bus coupler is negligible (almost 0 µs)
- Typical cycle time of the Axioline F local bus is around 10 µs
- Web-based management
- Supports the operation of Axioline Smart Elements
- Supports passive Smart Elements (firmware version 1.30 or later)
- Supports IOL-CONF (firmware version 1.30 and later)
- Supports Diag+
- Safe analog value processing with SAFE AI and other components

Commercial data

Item number	2403869
Packing unit	1 pc
Sales key	DR02
Product key	DRI21A
Catalog page	Page 69 (C-6-2019)
GTIN	4055626345826
Weight per piece (including packing)	221.4 g

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Weight per piece (excluding packing)	220.8 g
Customs tariff number	85176200
Country of origin	DE

AXL F BK PN TPS - Bus coupler

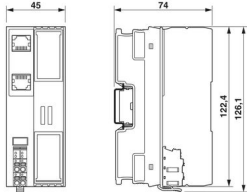


2403869

<https://www.phoenixcontact.com/us/products/2403869>

Technical data

Dimensions

Dimensional drawing	
Width	45 mm
Height	126.1 mm
Depth	74 mm
Note on dimensions	The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715).

Notes

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

Interfaces

PROFINET	
Number of interfaces	2
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	100 Mbps (full duplex)
Transmission physics	Ethernet in RJ45 twisted pair
Axioline F local bus	
Number of interfaces	1
Connection method	Bus base module
Transmission speed	100 Mbps
Service	
Number of interfaces	1
Connection method	USB type C

System properties

System limits	
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 63

PROFINET	
----------	--

AXL F BK PN TPS - Bus coupler



2403869

<https://www.phoenixcontact.com/us/products/2403869>

Device function	PROFINET device
Specification	Version 2.3
Conformance Class	Conformance-Class C
Device ID	1000 _{hex}
Vendor ID	00B0 _{hex}

Product properties

Type	block modular
Product type	I/O component
Product family	Axioline F
Mounting position	any (observe temperature derating)
Scope of delivery	including bus base module and Axioline F connector

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. 2.5 W
---	------------

Potentials: Communications power U_L feed-in (the supply of the Axioline F local bus U_{Bus} is generated from U_L)

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 600 mA (2.0 A at U_{Bus} , U_L = 24 V, up to HW 03)
	max. 700 mA (2.5 A at U_{Bus} , U_L = 24 V, from HW 04)
Power consumption	max. 14.4 W (2.0 A at U_{Bus} , U_L = 24 V, up to HW 03)
	max. 16.8 W (2.5 A at U_{Bus} , U_L = 24 V, from HW 04)
Protective circuit	Surge protection; electronic
	Reverse polarity protection; no

Potentials: Axioline F local bus supply (U_{Bus})

Supply voltage	5 V DC (via bus base module)
Power supply unit	max. 2 A (up to HW 03)
	max. 2.5 A (As of HW 04)

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 / 24 V communications voltage (U_L) feed-in	1500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 2 / 24 V communications voltage (U_L) feed-in	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 / functional ground	1500 V AC, 50 Hz, 1 min.
Test voltage: 24 V communications voltage (U_L) feed-in / functional ground	500 V AC, 50 Hz, 1 min.

Connection data

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Connection technology

Connection name	Axioline F connector
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual.

Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.2 mm² ... 1.5 mm²
Conductor cross section flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

Axioline F connector

Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual.
Conductor cross section, rigid	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

Environmental and real-life conditions

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C (Mounting position: wall mounting on horizontal DIN rail) -25 °C ... 55 °C (Mounting position: any)
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)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 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 (observe temperature derating)

AXL F BK PN TPS - Bus coupler

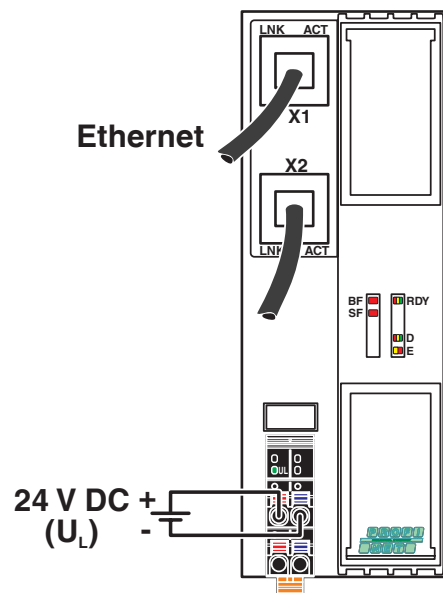
2403869

<https://www.phoenixcontact.com/us/products/2403869>



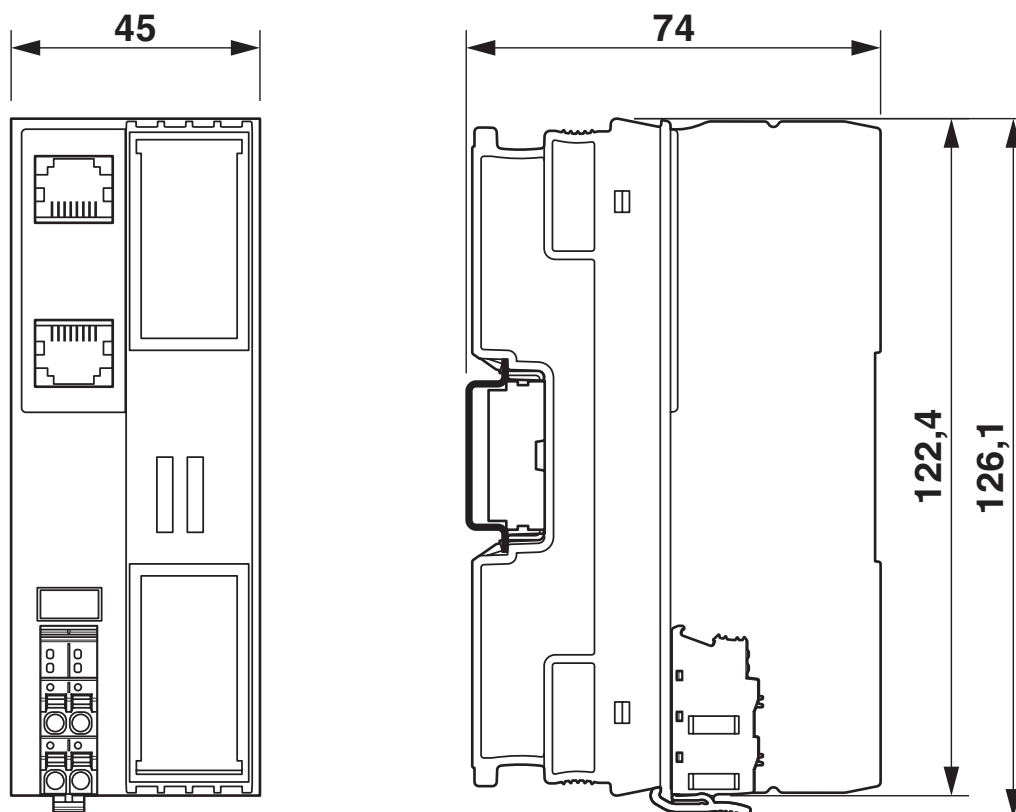
Drawings

Connection diagram



Connection of the cables

Dimensional drawing



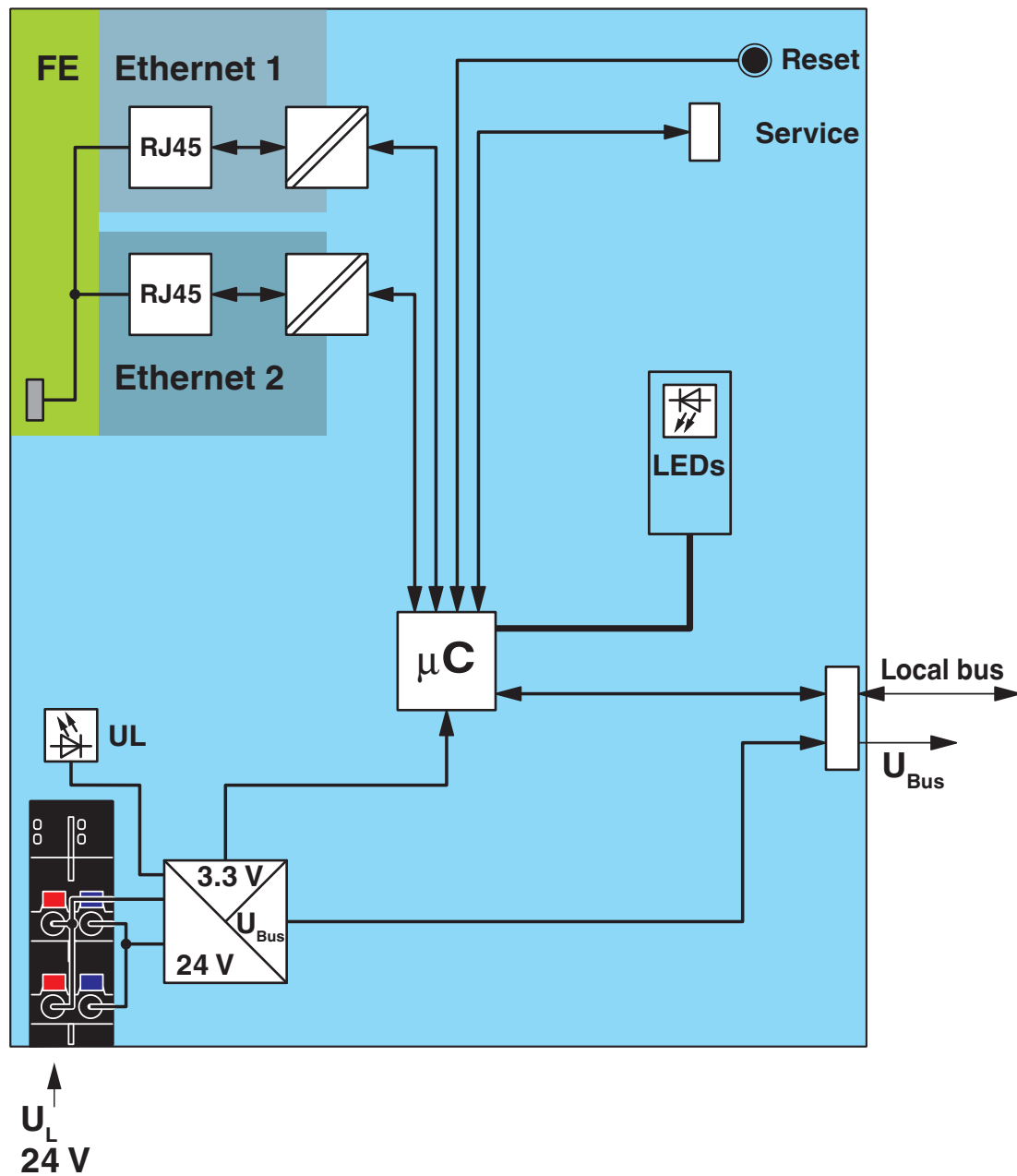
AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Block diagram



Internal wiring of the terminal points

AXL F BK PN TPS - Bus coupler



2403869

<https://www.phoenixcontact.com/us/products/2403869>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2403869>



DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2001902TA-08



NK

Approval ID: 14A006



BV

Approval ID: 36433/B4 BV



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840



RINA

Approval ID: ELE008423XG

ABS

Approval ID: 20-2059154-PDA

PROFINET

Approval ID: Z12930

UAE-RoHS

Approval ID: 23-02-63241



cULus Listed

Approval ID: E238705

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001604
----------	----------

UNSPSC

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

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



Accessories

AXL F BS BK - Bus connector

2701422

<https://www.phoenixcontact.com/us/products/2701422>

Axioline F bus base module for housing type BK



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

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



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

FL CAT5 HEAVY - Data cable

2744814

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

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



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)

FL CRIMPTOOL - Assembly tool

2744869

<https://www.phoenixcontact.com/us/products/2744869>



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

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



ZB 20,3 AXL UNPRINTED - Zack marker strip

0829579

<https://www.phoenixcontact.com/us/products/0829579>



Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

ZBF 10/5,8 AXL UNPRINTED - Zack Marker strip, flat

0829580

<https://www.phoenixcontact.com/us/products/0829580>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 10.15 mm, lettering field size: 4 x 10, 15 x 5 mm, 1 x 5.8 x 5 mm, Number of individual labels: 50

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



EMT (35X18,7)R - Insert label

0801831

<https://www.phoenixcontact.com/us/products/0801831>



Insert label, for marking Phoenix Contact Axioline modules, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, lettering field size: 35 x 18.7 mm, Number of individual labels: 500

SAFE AI - Function block

2400057

<https://www.phoenixcontact.com/us/products/2400057>



Function block library for safety-related analog value acquisition with standard I/O modules. **Please contact the safety hotline (+49 5281 9-462777) before ordering the SAFE AI article.**

AXL F BK PN TPS - Bus coupler

2403869

<https://www.phoenixcontact.com/us/products/2403869>



CAB-USB A/ USB C/1,8M - Connecting cable

2404677

<https://www.phoenixcontact.com/us/products/2404677>

Connecting cable, for connecting the controller to a PC from USB A to USB C



CAB-USB C/ USB C/1,8M - Connecting cable

1021809

<https://www.phoenixcontact.com/us/products/1021809>

Connecting cable, for connecting the controller to a PC from USB C to USB C



Phoenix Contact 2024 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com