

# Bus coupler - AXL F BK PN



2701815

<https://www.phoenixcontact.com/pc/products/2701815>

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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: [phoenixcontact.net/product/2701815](https://www.phoenixcontact.net/product/2701815).

## Your advantages

- 2 Ethernet ports (with integrated switch)
- Conformance with PROFINET specification V2.2
- Supports PROFI-safe
- PROFINET RT and IRT
- Minimum cycle time of PROFINET for RT and IRT is 250  $\mu$ s
- Firmware can be updated
- Runtime in bus coupler is negligible (almost 0  $\mu$ s)
- Typical cycle time of the Axioline F local bus is around 10  $\mu$ s
- Web-based management
- Supports the operation of Axioline Smart Elements
- Supports Diag+
- Safe analog value processing with SAFE AI and other components

## Commercial Data

Item number	2701815
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DRI21A
Catalog Page	Page 69 (C-6-2019)
GTIN	4046356845601
Weight per Piece (including packing)	229.4 g
Weight per Piece (excluding packing)	222 g
Customs tariff number	85176200
Country of origin	DE

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## 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).

### Material specifications

Color	traffic grey A RAL 7042
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### 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	Micro USB type B

### System properties

#### System limits

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

#### PROFINET

Device function	PROFINET device
Specification	Version 2.2

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Conformance Class	Conformance-Class C
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## Product properties

Type	block modular
Product type	I/O component
Mounting position	any
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
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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. 570 mA (with 2 A at $U_{BUS}$ for the I/O and $U_L = 24$ V)
Power consumption	max. 13.7 W (with 2 A load at $U_{BUS}$ for the I/Os and $U_L = 19$ V)
Protective circuit	Surge protection; electronic Reverse polarity protection; electronic

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

Supply voltage	5 V DC (via bus base module)
Power supply unit	max. 2 A

## Connection data

### 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 solid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
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 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 16

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Stripping length	8 mm
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## 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)
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## Mounting

Mounting type	DIN rail mounting
Mounting position	any

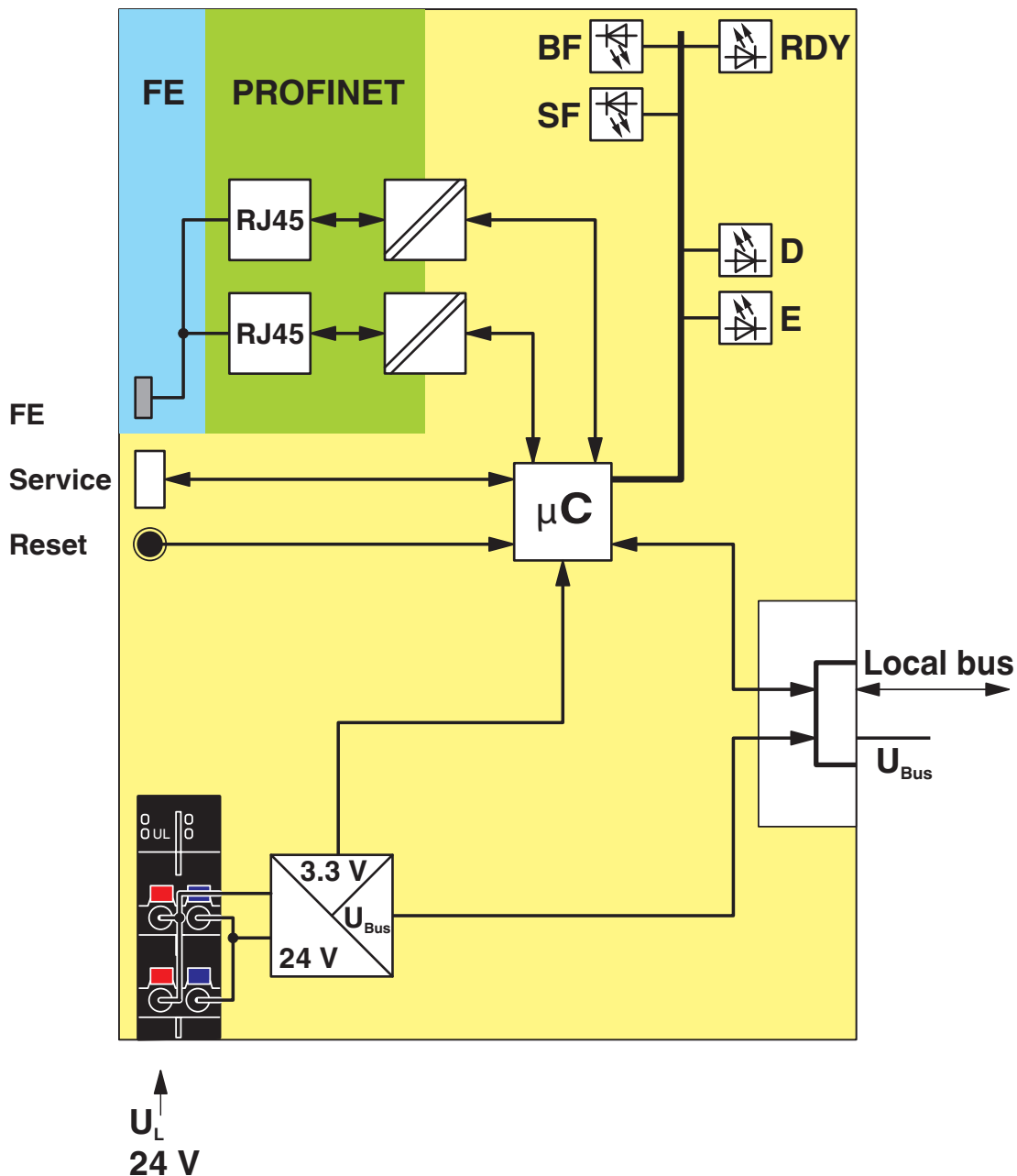
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## Drawings

Block diagram



Internal wiring of the terminal points

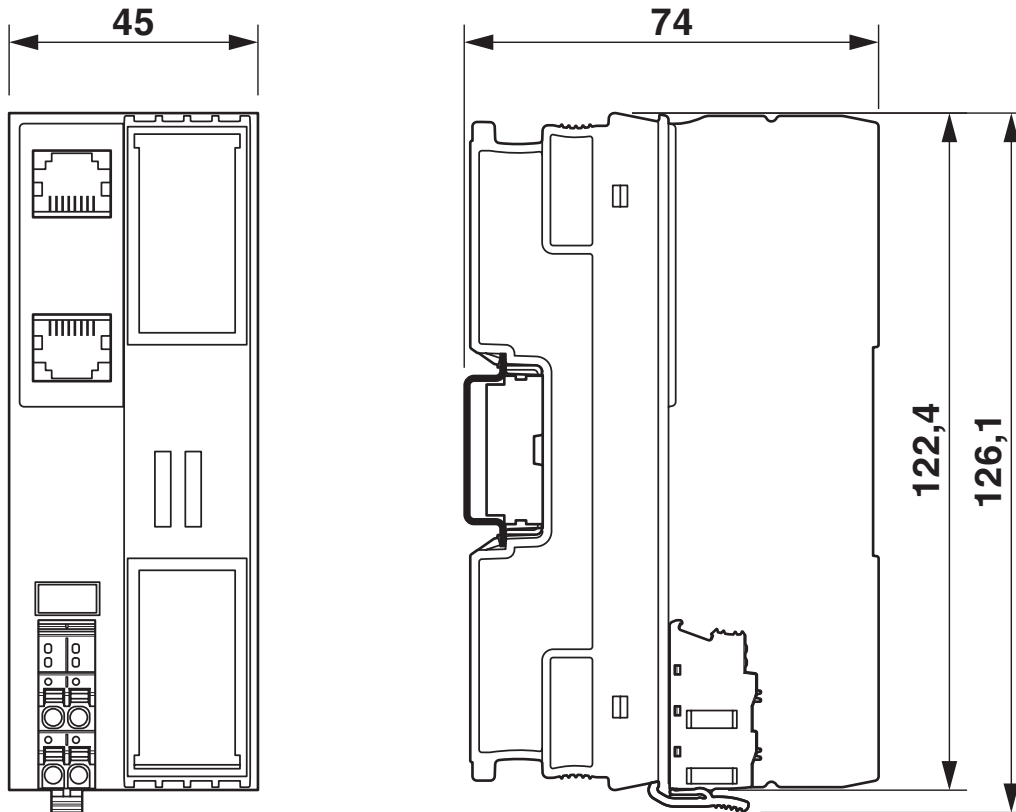
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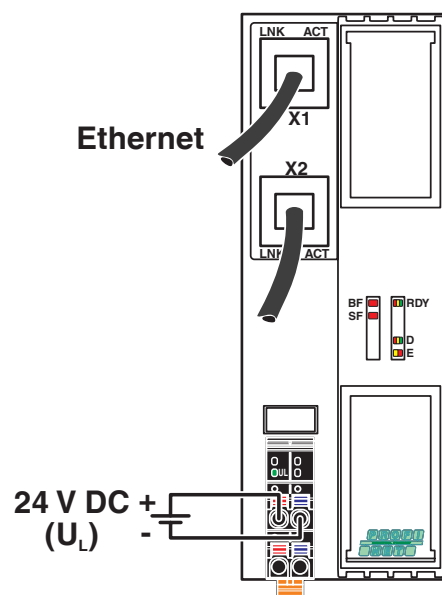
<https://www.phoenixcontact.com/pc/products/2701815>



Dimensional drawing



Connection diagram



Connection of the cables

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## Approvals



**EAC**

Approval ID: RU\*DE\*08.B.00529/19



**DNV GL**

Approval ID: TAA00000DF



**LR**

Approval ID: LR2001902TA



**NK**

Approval ID: 14A006



**BV**

Approval ID: 36433/B4 BV



**PRS**

Approval ID: TE/1020/880590/21



**UL Listed**

Approval ID: FILE E 238705



**cUL Listed**

Approval ID: FILE E 238705



**RINA**

Approval ID: ELE283021XG

**ABS**

Approval ID: 20-2059154-PDA

**PROFINET**

Approval ID: Z10813



**cUL Listed**

Approval ID: FILE E 238705

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**UL Listed**

Approval ID: FILE E 238705



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## Classifications

### ECLASS

ECLASS-9.0	27242608
ECLASS-10.0.1	27242608
ECLASS-11.0	27242608

### ETIM

ETIM 8.0	EC001604
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### UNSPSC

UNSPSC 21.0	32151600
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## 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"

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## Accessories

### Bus connector

Bus connector - AXL F BS BK - 2701422

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

Axioline F bus base module for housing type BK



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### RJ45 connector

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

<https://www.phoenixcontact.com/pc/products/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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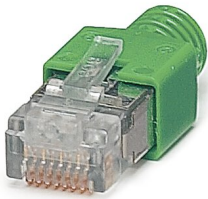
<https://www.phoenixcontact.com/pc/products/2701815>



## RJ45 connector

RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

<https://www.phoenixcontact.com/pc/products/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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## Network cable

Network cable - FL CAT5 HEAVY - 2744814

<https://www.phoenixcontact.com/pc/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 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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## Installation cable

Installation cable - FL CAT5 FLEX - 2744830

<https://www.phoenixcontact.com/pc/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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## Assembly tool

Assembly tool - FL CRIMPTOOL - 2744869

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



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

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## Zack marker strip

Zack marker strip - ZB 20,3 AXL UNPRINTED - 0829579

<https://www.phoenixcontact.com/pc/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

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## Zack Marker strip, flat

Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580

<https://www.phoenixcontact.com/pc/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 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50

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## Insert label

Insert label - EMT (35X18,7)R - 0801831

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Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped, lettering field size: 35 x 18.7 mm, Number of individual labels: 500

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## Function block

Function block - SAFE AI - 2400057

<https://www.phoenixcontact.com/pc/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.**

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## Connecting cable

Connecting cable - CAB-USB A/MICRO USB B/2,0M - 2701626

<https://www.phoenixcontact.com/pc/products/2701626>



Connecting cable, for connecting the controller to a PC for PC Worx and LOGIC+, USB A to micro USB B, 2 m in length.

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