

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

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, Modbus/TCP(UDP), RJ45 jack, Extreme conditions version, 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 Modbus/TCP (UDP) 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.

## Your advantages

- 2 Ethernet ports (with integrated switch)
- Transmission speed of 10 Mbps and 100 Mbps
- Rotary coding switches for setting the IP address assignment and other functions
- Firmware can be updated
- Runtime in the bus coupler is negligible (almost 0  $\mu$ s) (for Modbus/UDP)
- Typical cycle time of the Axioline F local bus is around 10  $\mu$ s
- Web-based management
- Security in the network: Port disconnection possible via web-based management (firmware version 1.31 or later)
- 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+
- 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)
- Partially coated PCBs

## Commercial Data

Item number	2701949
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DRI21B
Catalog Page	Page 71 (C-6-2019)
GTIN	4046356901239
Weight per Piece (including packing)	222 g
Weight per Piece (excluding packing)	177 g
Customs tariff number	85176200

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

Country of origin	DE
-------------------	----


# Bus coupler - AXL F BK ETH XC

2701949

<https://www.phoenixcontact.com/pc/products/2701949>

## 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
-------	-------------------------

### Interfaces

#### Modbus/TCP (UDP)

Number of interfaces	2
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps (Half or full duplex mode (automatic detection, can be adjusted manually))
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 (from HW 02) Micro USB type B (up to HW 01)

### System properties

#### System limits

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

### Product properties

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

Type	block modular
Product type	I/O component
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

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. 583 mA (2 A at $U_{BUS}$ , $U_L = 24$ V, up to HW 01)
	max. 670 mA (2.5 A at $U_{BUS}$ , $U_L = 24$ V, HW 02 or later)
	max. 583 mA (2.0 A at $U_{BUS}$ , $U_L = 24$ V, applications with UL approval, use in zone 2 potentially explosive area)
Power consumption	max. 14 W (2 A at $U_{BUS}$ , $U_L = 24$ V, up to HW 01)
	max. 16 W (2.5 A at $U_{BUS}$ , $U_L = 24$ V, HW 02 or later)
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 (up to HW 01)
	max. 2.5 A (from HW 02)
	max. 2 A (Applications with UL approval, use in zone 2 potentially explosive area)

## 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.

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

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
Stripping length	8 mm

## Environmental and real-life conditions

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C (Standard, applications with UL approval, use in zone 2 potentially explosive area; mounting position: wall mounting on horizontal DIN rail)
	-25 °C ... 55 °C (Standard, applications with UL approval, use in zone 2 potentially explosive area; mounting position: any)
	-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)	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)
------------------	---------------------------------------

## Approval data

### ATEX

Identification	<input type="checkbox"/> II 3 G Ex ec IIC T4 Gc
Certificate	UL 20 ATEX 2441X

### UKEX

Identification	<input type="checkbox"/> II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2701949X

### IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX ULD 20.0026X

### UL, USA / Canada

Identification	cULus
Certificate	E238705

### UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T4
	Class I, Division 2, Groups A, B, C, D, T4
	Ex ec IIC T4 Gc X
Certificate	E366272

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

## CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	<input type="checkbox"/> , 2021122309114456

## Mounting

Mounting type	DIN rail mounting
Mounting position	any (observe temperature derating)

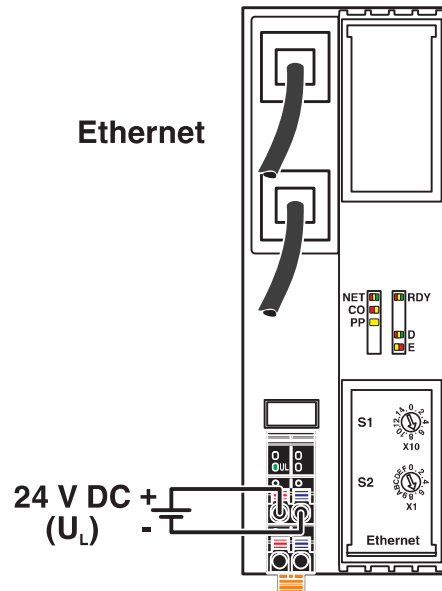
# Bus coupler - AXL F BK ETH XC

2701949

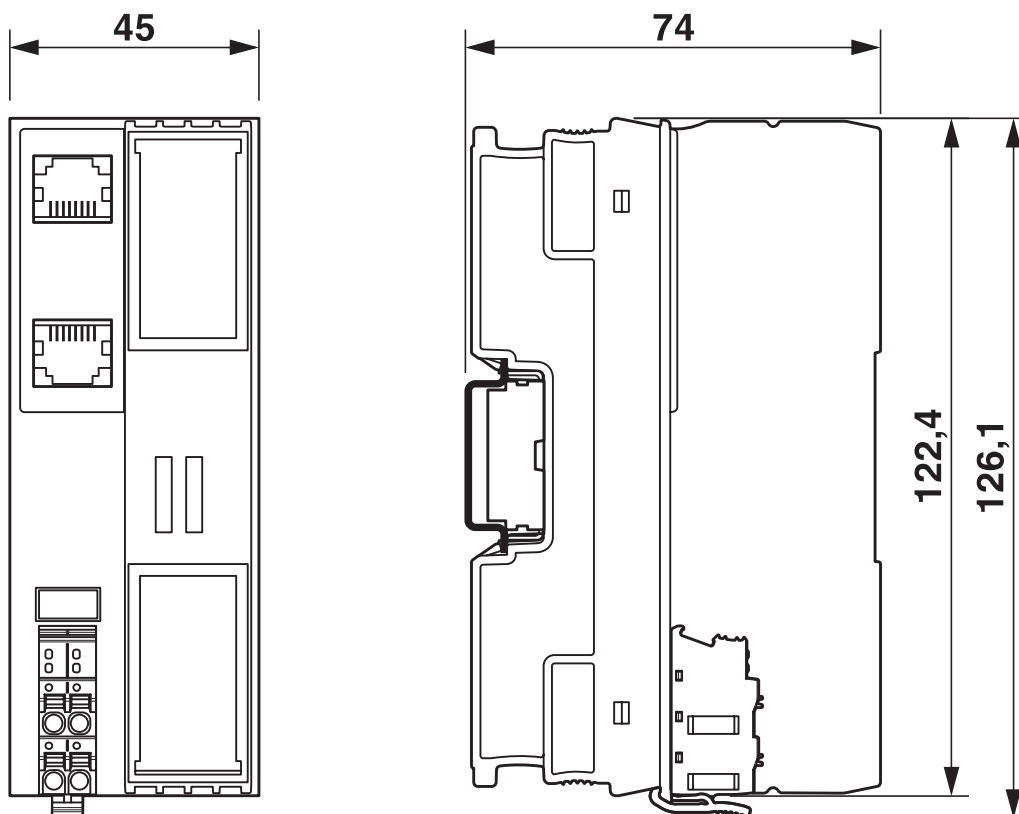
<https://www.phoenixcontact.com/pc/products/2701949>

## Drawings

Connection diagram



Dimensional drawing

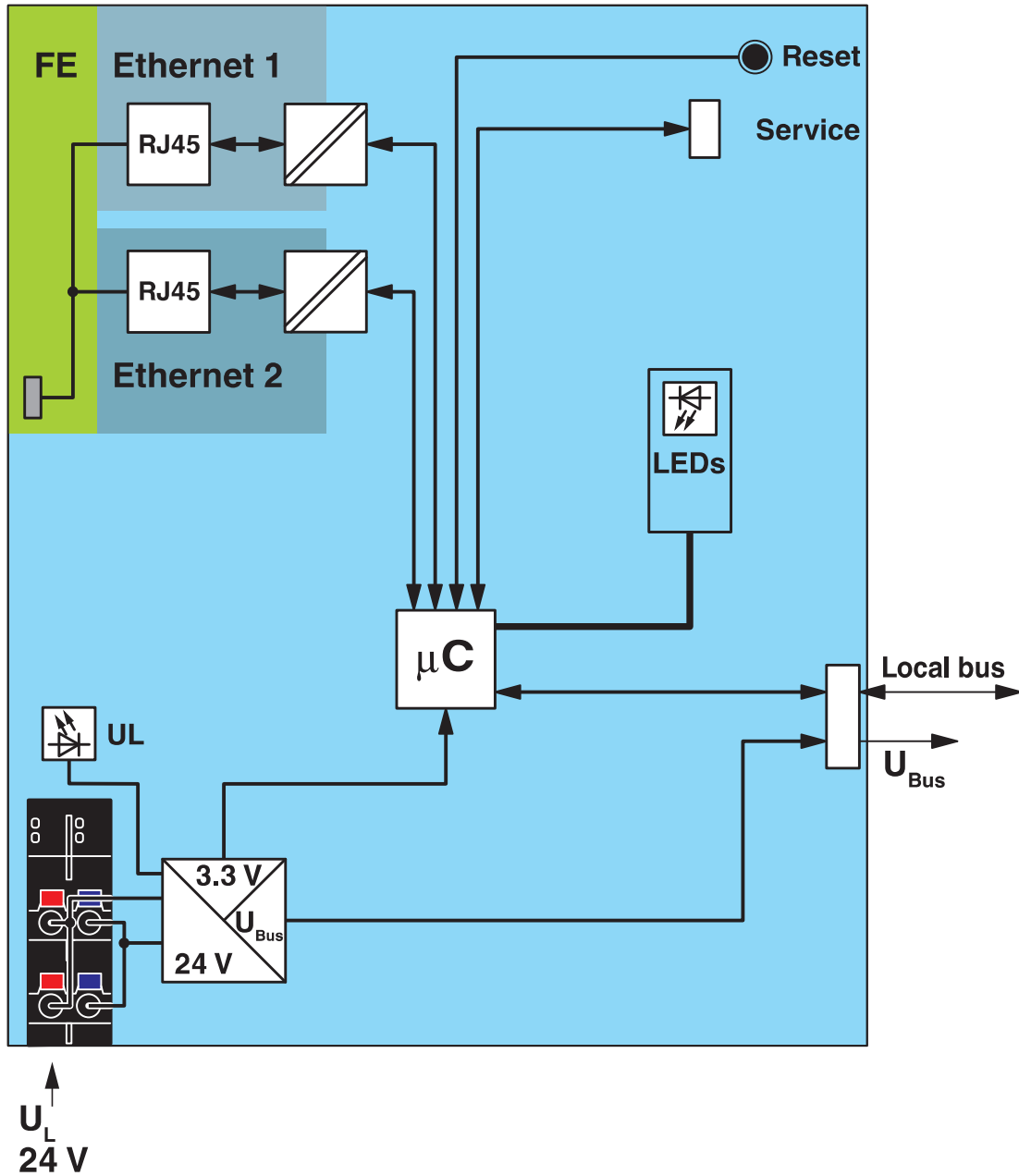


# Bus coupler - AXL F BK ETH XC

2701949

<https://www.phoenixcontact.com/pc/products/2701949>

Block diagram



Internal wiring of the terminal points

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

## Approvals



**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

**BSH**

Approval ID: 840



**RINA**

Approval ID: ELE283021XG

**ABS**

Approval ID: 21-2187864-PDA



**cUL Listed**

Approval ID: FILE E 238705



**UL Listed**

Approval ID: FILE E 238705

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>



**IECEx**

Approval ID: IECEx ULD 20.0026X



**ATEX**

Approval ID: UL 20 ATEX 2441X



**cULus Listed**

Approval ID: FILE E 366272

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC001604
----------	----------

### UNSPSC

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

# Bus coupler - AXL F BK ETH XC



2701949

<https://www.phoenixcontact.com/pc/products/2701949>

## 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"