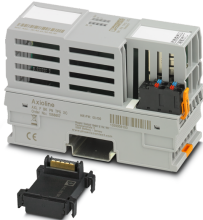


Bus coupler - AXL F BK PN TPS XC - 1068857

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Axioline F XC, Bus coupler, PROFINET, 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 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/1068857.

Your advantages

- ✓ 2 Ethernet ports (with integrated switch)
- ✓ Conformance with PROFINET specification V2.3
- ✓ Supports PROFIsafe
- ✓ Supports PROFInergy
- ✓ 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 μ s
- ✓ Firmware can be updated
- ✓ Runtime in bus coupler is negligible (almost 0 μ s)
- ✓ Typical cycle time of the Axioline F local bus is around 10 μ s
- ✓ Web-based management
- ✓ Supports the operation of Axioline Smart Elements
- ✓ Supports the AXL SE SC slot cover (firmware version 1.30 and later)
- ✓ Supports IOL-CONF (firmware version 1.30 and later)
- ✓ Supports Diag+
- ✓ Safe analog value processing with SAFE AI and other components
- ✓ 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

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Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 743653
GTIN	4055626743653
Custom tariff number	85176200
Country of origin	Germany

Technical data

Dimensions

Width	45 mm
Height	126.93 mm
Depth	75 mm
Note on dimensions	The depth is valid when a TH 35-7,5 DIN rail is used (according to EN 60715).

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C (Standard, applications with UL approval, use in zone 2 potentially explosive area)
	-40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
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)
Degree of protection	IP20

Connection data

Designation	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 solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²

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Technical data

Connection data

Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

General

Mounting type	DIN rail mounting
Color	traffic grey A RAL 7042
Net weight	222.6 g
Note on weight specifications	with connector and bus base module
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Mounting position	any

Interfaces

Designation	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
Designation	Axioline F local bus
Number of interfaces	1
Connection method	Bus base module
Transmission speed	100 Mbps
Designation	Service
Number of interfaces	1
Connection method	USB type C

Network/bus system

Amount of process data	max. 1012 Byte (Input, incl. max. 2 byte IOPS per local bus device)
	max. 1012 Byte (Output, incl. max. 2 byte IOPS per local bus device)
	max. 506 Byte (Input, incl. max. 2 byte IOPS per local bus device, with the use of the Phoenix Redundancy Layer (PRL))
	max. 506 Byte (Output, incl. max. 2 byte IOPS per local bus device, with the use of the Phoenix Redundancy Layer (PRL))
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 63
Protocol	PROFINET
	TFTP
	PTCP
	LLDP

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Technical data

Network/bus system

	SNMP
	MRP
	DCP
	DDI
	BootP (BootP only to perform firmware updates)

Axioline potentials

Designation	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 consumption	max. 600 mA (with 2 A at U_{Bus} for the I/O and $U_L = 24$ V)
Power consumption	max. 14.4 W (with 2 A load at U_{Bus} for the I/Os and $U_L = 19$ V)
Type of protection	Surge protection
	Reverse polarity protection
Designation	Axioline F local bus supply (U_{Bus})
Supply voltage	5 V DC (via bus base module)
Power supply unit	max. 2 A

Electrical isolation

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

Standards and Regulations

Immunity to ESD	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 6 kV contact discharge, 8 kV air discharge
Immunity to EF	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity to surge	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, DC supply lines: ± 0.5 kV/ ± 0.5 kV (symmetrical/asymmetrical), fieldbus cable shield: ± 1 kV

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Technical data

Standards and Regulations

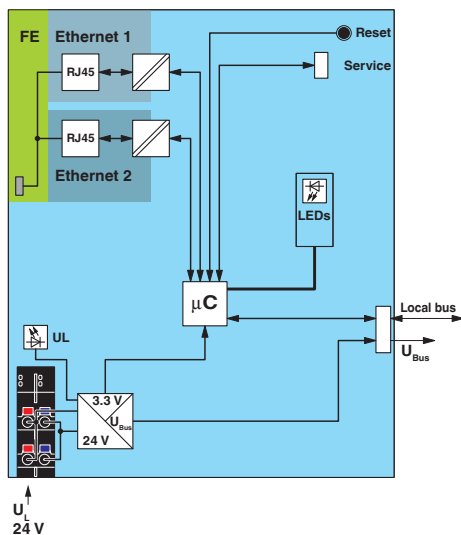
Immunity to conducted interference	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test according to EN 61000-6-3/IEC 61000-6-3 Class B
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
ATEX	# II 3 G Ex ec IIC T4 Gc
IECEX	Ex ec IIC T4 Gc
UL, USA / Canada	cULus
	Class I, Zone 2, AEx ec IIC T4, Ex ec IIC T4 Gc X
	Class I, Div. 2, Groups A, B, C, D T4
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)

Environmental Product Compliance

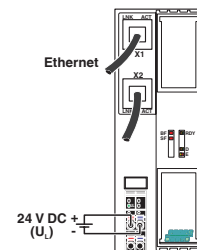
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

Block diagram



Connection diagram

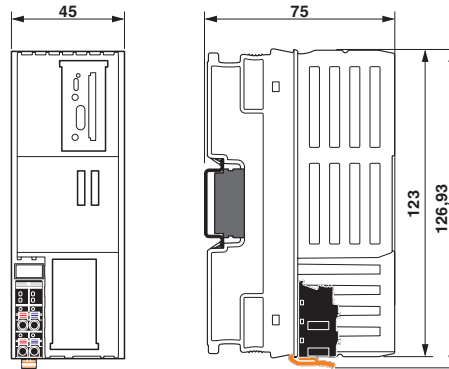


Connection of the cables

Internal wiring of the terminal points

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Dimensional drawing



Classifications

eCl@ss

eCl@ss 10.0.1	27242608
eCl@ss 11.0	27242608
eCl@ss 4.0	27240490
eCl@ss 4.1	27240490
eCl@ss 5.0	27242208
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242608
eCl@ss 9.0	27242608

ETIM

ETIM 3.0	EC001604
ETIM 4.0	EC001604
ETIM 6.0	EC001604
ETIM 7.0	EC001604

Approvals

Approvals

Approvals

UL Listed / cUL Listed / PROFINET / cULus Listed

Ex Approvals

ATEX / cULus Listed / IECEx

Bus coupler - AXL F BK PN TPS XC - 1068857

Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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PROFINET			Z12931
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cULus Listed			
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Accessories

Accessories

Data cable by the meter

Network cable - FL CAT5 HEAVY - 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

Installation cable - FL CAT5 FLEX - 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)

Data plug

Bus coupler - AXL F BK PN TPS XC - 1068857

Accessories

Assembly tool - FL CRIMPTOOL - 2744869



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

Device marking

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



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, lettering field size: 35 x 18.7 mm, Number of individual labels: 500

DIN rail connector

Bus connector - AXL BS BK - 2701422



Axioline F bus base module for housing type BK

Plug

RJ45 connector - FL PLUG RJ45 GR/2 - 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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Accessories

RJ45 connector - FL PLUG RJ45 GN/2 - 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.

Programming cable

Connecting cable - CAB-USB A/ USB C/1,8M - 2404677



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

Connecting cable - CAB-USB C/ USB C/1,8M - 1021809



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

Software library

Function block - SAFE AI - 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.

Terminal marking

Bus coupler - AXL F BK PN TPS XC - 1068857

Accessories

Zack marker strip - ZB 20,3 AXL UNPRINTED - 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

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, 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