

I/O systems

I/O systems from Phoenix Contact are the perfect solution for control cabinet engineering or field installation.

I/O systems for the control cabinet

Axioline F

Axioline F is fast, robust, and easy. Open to all Ethernet-based communication protocols and PROFIBUS, Axioline F enables the shortest response times, fast installation, and is characterized by its particularly robust design and easy handling.

Axioline P

The Axioline P modular proxy can be used to connect PROFIBUS PA segments directly to a PROFINET network. Various redundancy mechanisms ensure high failsafe performance and process reliability.

Inline

Inline, our I/O automation kit, can be used to connect sensors and actuators with a maximum range of functions.

These I/Os can also be found in safety applications or potentially explosive areas.

Stand-alone IO-Link masters

The stand-alone IO-Link masters for the control cabinet are used to easily and conveniently integrate IO-Link devices into higher-level networks.

I/O systems for field installation

Axioline E

The I/O system features a fast response time, robust design, and easy handling.

The comprehensive portfolio with optional plastic or zinc die-cast housing enables use in a wide range of environments.

Fieldline Modular

The devices in the Fieldline Modular product range with IP65/IP67 protection are optimized for use in machine building and systems manufacturing directly in the field.

Product overview	64
For the control cabinet (IP20)	
Axioline F	
Product overview	66
I/O modules	68
Axioline P	
Product overview	97
I/O devices	98
Inline	
Product overview	100
I/O terminals	103
Stand-alone IO-Link masters	162
Inline Block IO	
Product overview	164
INTERBUS Smart Terminals	
Product overview	165
For field installation (IP65/IP67)	
Axioline E	
Product overview	166
I/O devices	168
Fieldline Modular	
Product overview	186
I/O devices	188
AS-Interface	
Product overview	202
Ruggedline	
Product overview	203

Product overview

I/O systems for the control cabinet (IP20)



Axioline F

Page 66



Axioline P

Page 97



Inline

Page 100



Stand-alone IO-Link masters

Page 162



Inline Block IO

Page 164



INTERBUS ST

Page 165

I/O systems for field installation (IP65/IP67)



Axioline E – Devices in plastic and metal version

Page 166



Fieldline Modular

Page 186



AS-Interface

Page 202



Ruggedline

Page 203

PLCnext Control



PLCnext Control AX C F 2152 – Controller for PLCnext Technology

Page 10

Conventional PLCs and small-scale controllers



Axiocontrol and Inline controllers

Page 41

Functional safety



Safe I/Os

Page 265

Industrial Wireless



Wireless multiplexer with antennas

Page 386

Sensor/actuator cabling



• See Catalog 2 –
Corresponding cabling for I/O systems

i Your web code: #0564

Marking and labeling



• See Catalog 3 –
Marking and labeling section

i Your web code: #0575

Software for device parameterization



Startup+ – Software for wiring checks on
Axioline F I/O stations

i Your web code: #1164



IOL-CONF – Software for parameterizing
IO-Link devices

i Your web code: #1164

Software for planning and configuration



Project+ – Software for planning the
I/O configuration

i Your web code: #1161






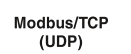


COMPLETE line





The comprehensive solution for
your control cabinet:
Easy planning, intuitive installation



Page 522








Product overview

Bus couplers							
							
	69	68	71	69	71	71	72

Axioccontrol		Power module
	PLCnext Control	Power module
	10	73
	Conventional PLCs	
	44	

Input and output modules		
	Digital input	Digital output
	8 - 64 channels	4 - 64 channels
	74	76
	Digital input and output	
	8 - 16 channels	
	80	
	Analog input	Analog output
	4 - 8 channels	4 - 8 channels
	82	85
	Analog input and output	
	2 channels	
	84	
Temperature measurement		
RTD / UTH		
86		

Function modules				Safe I/Os		
	Communication	Power measurement	PWM / counter	Position detection		PROFIsafe
	RS-485/422/232 IO-Link					
	88	91	92	93	269	270

General accessories						
						
ZB 20,3 AXL UNPRINTED	ZBF 10/5,8 AXL UNPRINTED	EMT (35x...)R	AXL SHIELD SET	AXL BS BK	AXL F BS H	AXL F BS F
Zack marker strip, for device marking, unprinted	Zack marker strip, flat, for connector and slot marking, unprinted	Marking label rolls, unprinted	Shield connection set	Bus base module for bus couplers	Bus base module for housing type H	Bus base module for housing type F

phoenixcontact.net/products

General technical data

Ambient conditions

Temperature range (operation) - Extended (...-XC modules)	-25°C ... +60°C -40°C ... +70°C
Relative humidity (operation/storage/transport)	5% to 95% (non-condensing)
Vibration	5g in accordance with EN 60068-2-6 / IEC 60068-2-6
Shock	30g in accordance with EN 60068-2-27 / IEC 60068-2-27
Continuous shock	10g in accordance with EN 60068-2-27 / IEC 60068-2-27
Degree of protection	IP20

Electromagnetic compatibility

Noise emission	Class B in accordance with EN 61000-6-3
Noise immunity	In accordance with EN 61000-6-2

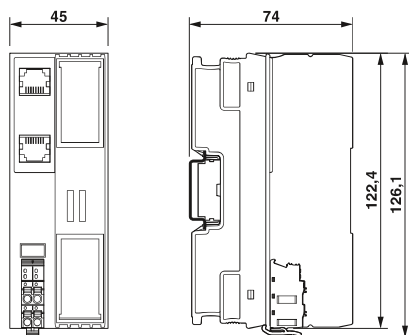
System times

System bus cycle time	2 μs
Offset per module	1 μs

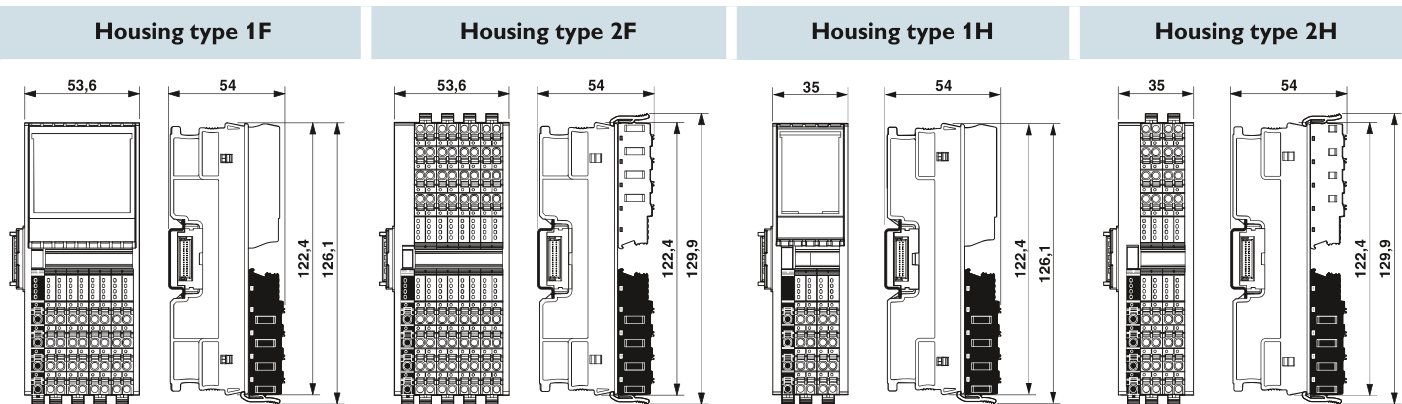
Housing types and dimensions

Bus couplers

RJ45 connection



I/O modules



Bus couplers

The Axioline F bus couplers are the link between the Axioline F system and the higher-level network.

For startup tests, the Axioline F station can be started up independently of the higher-level network via either an Ethernet port or the local service interface on the bus coupler using the Startup+ software.

EtherCAT® features:

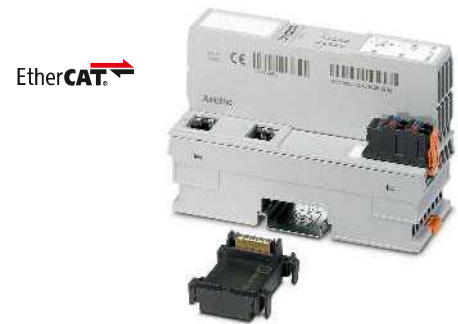
- Minimum cycle time of EtherCAT® is 50 µs
- Supported mailbox protocols CoE, FoE
- Automatic and manual addressing

Sercos® features:

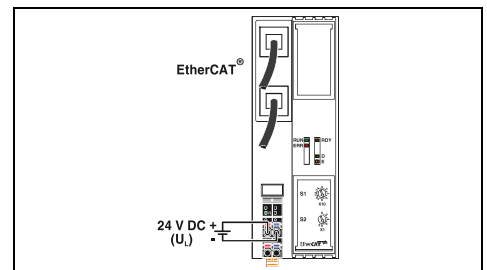
- Sercos specification V1.3
- Minimum Sercos cycle time of 31.25 µs

PROFINET features:

- PROFINET RT and PROFINET in accordance with the latest PROFINET specification
- MRP implemented
- Web-based management



RJ45 connection



Technical data

Interface	
Fieldbus system	EtherCAT®
Connection method	RJ45 socket
Number	2
Transmission speed	100 Mbps (full duplex)
Transmission distance	max. 100 m
Protocols supported	CoE, FoE
Service interface	
Connection method	Micro USB type B
Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Transmission speed	100 Mbps
Number of supported devices	max. 63 (per station)
Power supply for module electronics	
Supply of communications power U_L	24 V DC
Maximum permissible voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Communications power U_{Bus}	5 V DC (via bus base module)
Current supply at U_{Bus}	2 A
Protective circuit	Surge protection of the supply voltage Polarity reversal protection of the supply voltage
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	177 g
Dimensions	45 mm / 126.1 mm / 74 mm
EMC note	

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK EC	2688899	1

Accessories

AXIOLINE F BUS BASE MODULE (replacement part)	2701422	5
--	----------------	---



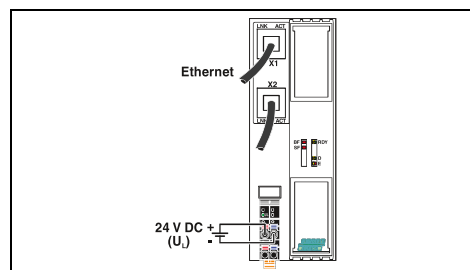
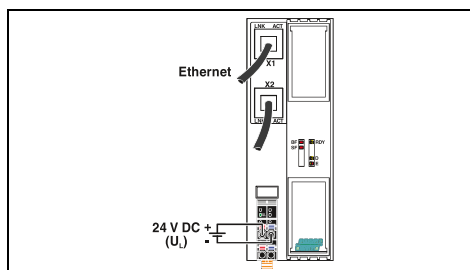
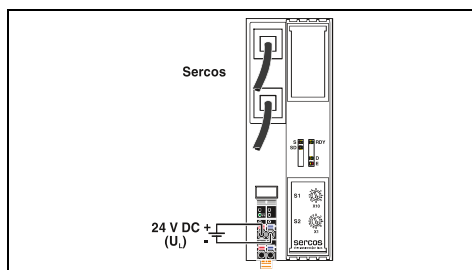
RJ45 connection



RJ45 connection



RJ45 connection



Technical data

Sercos
 RJ45 socket
 2
 100 Mbps (full duplex)
 max. 100 m
 Sercos, TFTP

Micro USB type B

Axioline F local bus
 Bus base module
 100 Mbps
 max. 63 (per station)

24 V DC
 19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
 2 A
 Surge protection of the supply voltage
 Polarity reversal protection of the supply voltage

Push-in connection
 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
 177 g
 45 mm / 126.1 mm / 74 mm

Technical data

PROFINET
 RJ45 socket
 2
 100 Mbps (full duplex)
 max. 100 m
 PROFINET, TFTP, PTCP, LLDP, SNMP, MRP, DDI, BootP
 (BootP only for the implementation of firmware updates)

USB type C

Axioline F local bus
 Bus base module
 100 Mbps
 max. 63 (per station)

24 V DC
 19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
 2 A
 Surge protection of the supply voltage
 Polarity reversal protection of the supply voltage

Push-in connection
 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
 177 g
 45 mm / 126.1 mm / 74 mm
 Class A product, see page 527

Technical data

PROFINET
 RJ45 socket
 2
 100 Mbps (full duplex)
 max. 100 m
 PROFINET, TFTP, PTCP, LLDP, SNMP, MRP, DDI, BootP
 (BootP only for the implementation of firmware updates)

Micro USB type B

Axioline F local bus
 Bus base module
 100 Mbps
 max. 63 (per station)

24 V DC
 19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
 2 A
 Surge protection of the supply voltage
 Polarity reversal protection of the supply voltage

Push-in connection
 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
 177 g
 45 mm / 126.1 mm / 74 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK S3	2701686	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK PN TPS	2403869	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK PN	2701815	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

Bus couplers

The Axioline F bus couplers are the link between the Axioline F system and the higher-level network.

For startup tests, the Axioline F station can be started up independently of the higher-level network via either an Ethernet port or the local service interface on the bus coupler using the Startup+ software.

EtherNet/IP™ features:

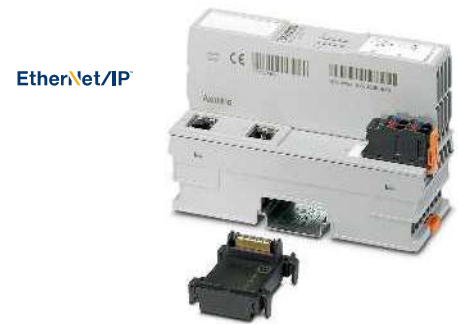
- ACD (Address Conflict Detection) implemented
- RPI (Request Packet Interval) of 5 μs
- Device Level Ring (DLR) (for AXL F BK EIP EF)

Modbus/TCP (UDP) features:

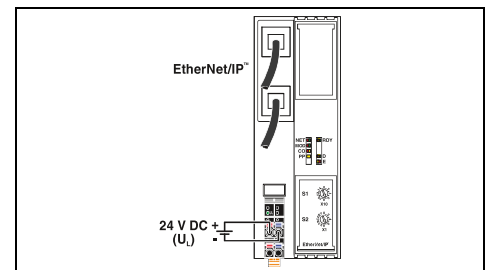
- Two rotary encoding switches for address assignment
- One or two MAC addresses
- Software interfaces for access via TCP/IP:
 - Device Driver Interface (DDI)
 - High-Level Language Fieldbus Interface (HFI)

SAS features (IEC 61850):

- Communication in accordance with IEC 61850-5, MMS, and GOOSE
- Time synchronization via SNTP
- Web server



RJ45 connection



Interface	
Fieldbus system	
Connection method	
Number	
Transmission speed	
Transmission distance	
Protocols supported	
Service interface	
Connection method	
Local bus interface	
Designation	
Connection method	
Transmission speed	
Number of supported devices	
Power supply for module electronics	
Supply of communications power U _i	
Maximum permissible voltage range	
Communications power U _{Bus}	
Current supply at U _{Bus}	
Protective circuit	
General data	
Connection method	
Connection data rigid / flexible / AWG	
Weight	
Dimensions	
	W / H / D

Technical data		
AXL F BK EIP	AXL F BK EIP EF	
	EtherNet/IP™	
	RJ45 socket	
	2	
	10/100 Mbps (half or full duplex mode (automatic detection, can be adjusted manually))	
	max. 100 m	
EtherNet/IP™, SNMP, HTTP, BootP, DHCP, FTP, TFTP	EtherNet/IP™, SNMP, DLR, HTTP, BootP, DHCP, FTP, TFTP	
	Micro USB type B	
	Axioline F local bus	
	Bus base module	
	100 Mbps	
	max. 63 (per station)	
	24 V DC	
	19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
	5 V DC (via bus base module)	
	2 A	
	Surge protection of the supply voltage	
	Polarity reversal protection of the supply voltage	
	Push-in connection	
	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
	177 g	
	45 mm / 126.1 mm / 74 mm	

Description	
Axioline F bus coupler	
- For EtherNet/IP™	
- For EtherNet/IP™, extended functions	
- For Ethernet (Modbus/TCP)	
- For Ethernet (IEC 61850)	
- For extended temperature range of -40°C ... +70°C	

Ordering data		
Type	Order No.	Pcs./Pkt.
AXL F BK EIP	2688394	1
AXL F BK EIP EF	2702782	1

Axioline F bus base module (replacement part)	
--	--

Accessories		
AXL BS BK	2701422	5

Modbus/TCP (UDP)



RJ45 connection

Modbus/TCP (UDP)



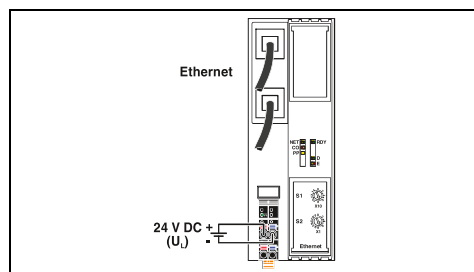
RJ45 connection,
two separate Ethernet ports

Ethernet

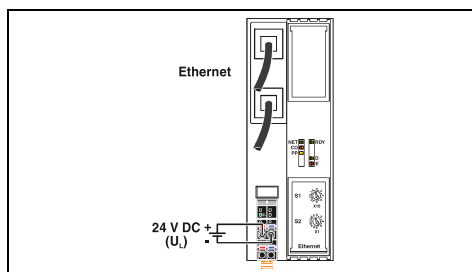
IEC 61850



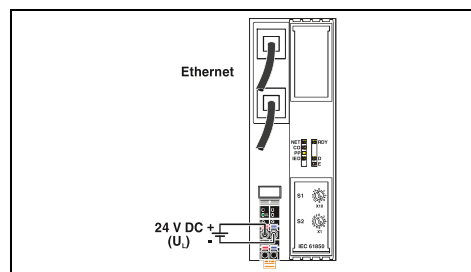
RJ45 connection



Technical data



Technical data



Technical data

Modbus/TCP (UDP)
RJ45 socket
2
10/100 Mbps (half or full duplex mode (automatic detection, can be adjusted manually))
max. 100 m
Modbus/TCP (UDP), SNMP, HTTP, BootP, DHCP, FTP, TFTP

Micro USB type B

Axioline F local bus
Bus base module
100 Mbps
max. 63 (per station)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
2 A
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
177 g
45 mm / 126.1 mm / 74 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK ETH	2688459	1
AXL F BK ETH XC	2701949	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

Ethernet (2 networks)
RJ45 socket
2
10/100 Mbps (half or full duplex mode (automatic detection, can be adjusted manually))
max. 100 m
Modbus/TCP (UDP), SNMP, HTTP, BootP, DHCP, FTP, TFTP

Micro USB type B

Axioline F local bus
Bus base module
100 Mbps
max. 63 (per station)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
2 A
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
177 g
45 mm / 126.1 mm / 74 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK ETH NET2	2702177	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

Ethernet (IEC 61850, MMS, GOOSE)
RJ45 socket
2
100 Mbps (full duplex)
max. 100 m
MMS, GOOSE, SNMP, HTTP, BootP, DHCP, FTP, TFTP, SNTP

Micro USB type B

Axioline F local bus
Bus base module
100 Mbps
max. 63 (per station)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

5 V DC (via bus base module)
2 A
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
177 g
45 mm / 126.1 mm / 74 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F BK SAS	2701457	1

Accessories

AXL BS BK	2701422	5
-----------	---------	---

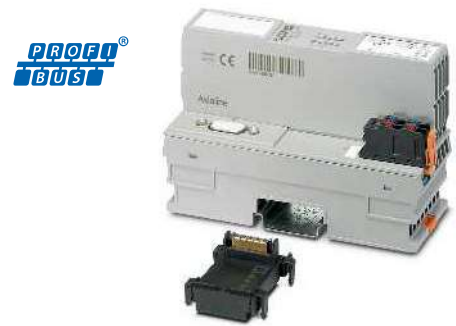
Bus couplers

The Axioline F bus couplers are the link between the Axioline F system and the higher-level network.

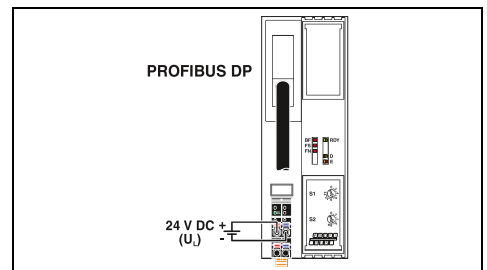
For startup tests, the Axioline F station can be started up independently of the higher-level network via either an Ethernet port or the local service interface on the bus coupler using the Startup+ software.

Features:

- I&M functions
- Operation of PROFI-safe devices



D-SUB connection



Interface		Technical data	
Fieldbus system		PROFIBUS DP	
Connection method		D-SUB-9 female connector	
Number		1	
Transmission speed		9.6 kbps ... 12 Mbps	
Service interface			
Connection method		Micro USB type B	
Local bus interface			
Designation		Axioline F local bus	
Connection method		Bus base module	
Transmission speed		100 Mbps	
Number of supported devices		max. 63 (per station)	
Power supply for module electronics			
Supply of communications power U_L		24 V DC	
Maximum permissible voltage range		19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
Communications power U_{Bus}		5 V DC (via bus base module)	
Current supply at U_{Bus}		2 A	
Protective circuit		Surge protection of the supply voltage Polarity reversal protection of the supply voltage	
General data		Ordering data	
Connection method		Push-in connection	
Connection data rigid / flexible / AWG		0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
Weight		175 g	
Dimensions	W / H / D	45 mm / 125.9 mm / 74 mm	
Description		Accessories	
Axioline F bus coupler		Type	Order No. Pcs./Pkt.
- For PROFIBUS		AXL F BK PB	2688530 1
- For extended temperature range of -40°C ... +70°C		AXL F BK PB XC	2702463 1
Axioline F bus base module (replacement part)		AXL BS BK	2701422 5

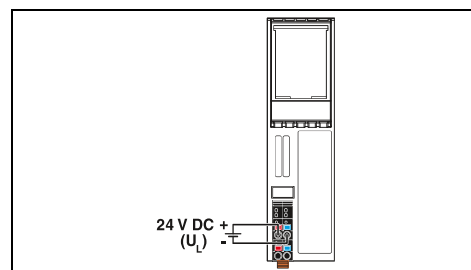
Power module

This module is designed for use within an Axioline F station.

Once the maximum load on a bus coupler has been reached for the Axioline F local bus supply, you can resupply the U_{BUS} communications power with the power module.



For supplying the U_{BUS} communications power



Local bus interface		Technical data	
Designation		Axioline F local bus	
Connection method		Bus base module	
Power supply for module electronics		24 V DC	
Supply of communications power U_L		19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
Maximum permissible voltage range		5 V DC (via bus base module)	
Communications power U_{BUS}		max. 4 A	
Current supply at U_{BUS}		Surge protection of the supply voltage	
Protective circuit		Polarity reversal protection of the supply voltage	
General data		Ordering data	
Connection method		Push-in connection	
Connection data rigid / flexible / AWG		0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
Weight		107 g	
Dimensions	W / H / D	35 mm / 126.1 mm / 54 mm	
EMC note		Class A product, see page 527	
Description		Type	Order No.
Axioline F power module, complete with accessories (bus base module)		AXL F PWR 1H	2688297
			Pcs./Pkt.
			1

Digital input modules

These modules are designed for use within an Axioline F station.

The digital input modules are used to connect 24 V DC sensors. Sensors with up to 4-conductor connection technology can be connected.

Features:

- Minimum update time of < 100 μ s
- Adjustable filter times
- Maximum input frequency: 5 kHz
- Stored device rating plate
- Diagnostic and status indicators

AXL DI 8/2... features:

- Impulse withstand voltage: 5 kV
- Developed in accordance with the requirements of IEC 61850-3

AXL DI 16/1 HS 1H features:

- Minimum update time of 5 μ s

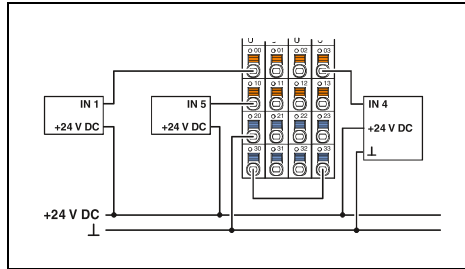
IEC 61850-3



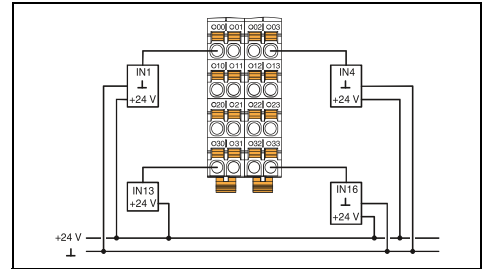
8 inputs,
with increased impulse withstand voltage



16 inputs



Technical data



Technical data

	AXL F DI8/2 24DC 1F	AXL F DI8/2 48/60DC 1F	AXL F DI8/2 110/220DC 1F	AXL F DI16/1 1H	AXL F DI16/1 HS 1H
Local bus interface	Axioline F local bus Bus base module			Axioline F local bus Bus base module	
Power supply for module electronics	5 V DC (via bus base module) max. 120 mA			5 V DC (via bus base module) max. 120 mA	
I/O supply	-			24 V DC 19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
Current consumption from U_I	-			20 mA	
Protective circuit	-			Surge protection of the supply voltage Polarity reversal protection of the supply voltage	
Digital inputs	2-conductor 8 EN 61131-2 type 1 24 V DC 2.5 mA < 1 ms			1-conductor 16 EN 61131-2 types 1 and 3 24 V DC 2.4 mA 3000 μ s (default) 1000 μ s < 100 μ s Polarity reversal protection of the inputs	
Protective circuit	Polarity reversal protection of the inputs			Polarity reversal protection of the inputs	
General data	Push-in connection 0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16 173 g 53.6 mm / 126.1 mm / 54 mm			Push-in connection 0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16 133 g 35 mm / 126.1 mm / 54 mm	

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Axioline F digital input module , complete with accessories (bus base module) - 8 inputs, U_{IN} = 24 V DC - 8 inputs, U_{IN} = 48 V DC / 60 V DC - 8 inputs, U_{IN} = 110 V DC / 220 V DC - 16 inputs - 16 inputs - 32 inputs - 64 inputs - For extended temperature range of -40°C ... +70°C	AXL F DI8/2 24DC 1F	2702783	1	AXL F DI16/1 1H AXL F DI16/1 HS 1H	2688310	1
	AXL F DI8/2 48/60DC 1F	2702654	1		2701722	1
	AXL F DI8/2 110/220DC 1F	2700684	1			

Accessories			Accessories			
Axioline F bus base module (replacement part)	AXL F BS F	2688129	5	AXL F BS H	2700992	5



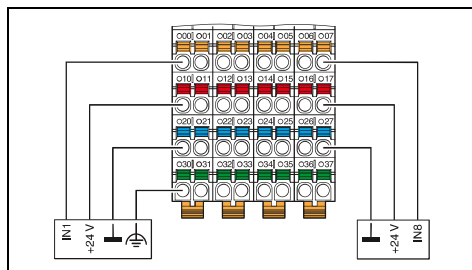
16 inputs



32 inputs



32 / 64 inputs



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

max. 4 A (2 A or each group of 8 inputs)
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

4-conductor
16
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
500 µs (default)
< 100 µs

Polarity reversal protection of the inputs

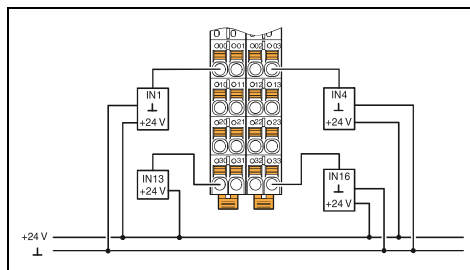
Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
231 g
53.6 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI16/4 2F	2688022	1
AXL F DI16/4 XC 2F	2701224	1

Accessories

AXL F BS F	2688129	5
------------	---------	---



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

max. 50 mA
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

1-conductor
32
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
3000 µs (default)
1000 µs
< 100 µs

Polarity reversal protection of the inputs

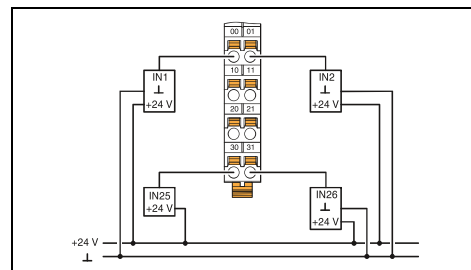
Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
159 g
35 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI32/1 2H	2702052	1

Accessories

AXL F BS H	2700992	5
------------	---------	---



Technical data

AXL F DI32/1 1F AXL F DI64/1 2F

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA (up to HW 04) max. 120 mA
max. 60 mA (from HW 05)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

max. 50 mA max. 60 mA
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

1-conductor
32 64
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
3000 µs (default)
1000 µs
< 100 µs

Polarity reversal protection of the inputs

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
167 g 231 g
53.6 mm / 126.1 mm / 54 mm 53.6 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI32/1 1F	2688035	1
AXL F DI64/1 2F	2701450	1
AXL F DI32/1 XC 1F	2701226	1

Accessories

AXL F BS F	2688129	5
------------	---------	---

Digital output modules

These modules are designed for use within an Axioline F station.

The digital output modules are used to output digital 24 V DC signals. Actuators with up to 3 conductors can be connected.

Features:

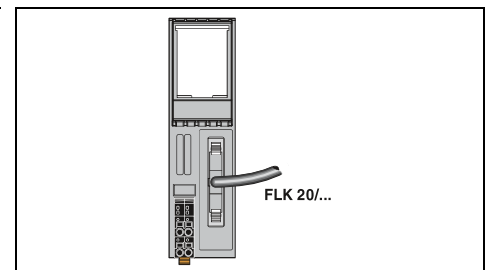
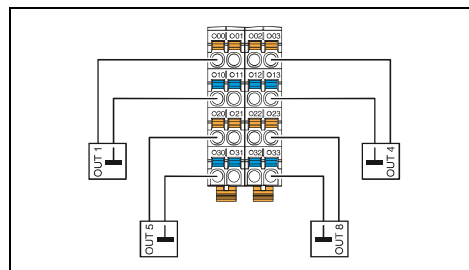
- Short-circuit-proof outputs
- Output behavior can be adjusted for when local bus communication is aborted
- Stored device rating plate



8 outputs,
2 A / 16 outputs



16 outputs,
FLK20 connection for system cabling



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 150 mA
I/O supply	
Supply of digital output modules U_O	24 V DC
Supply voltage range U_O	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption from U_O	max. 16 A (provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)
Protective circuit	Surge protection of the supply voltage Polarity reversal protection of the supply voltage
Digital outputs	
Connection technology	2-conductor
Number of outputs	8
Output voltage	24 V
Maximum output current per channel	2 A
Maximum output current per module	16 A (provide external protection)
Behavior in the event of overload	Shutdown with automatic restart
Protective circuit	Short-circuit protection, overload protection of the outputs
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.5 ... 1.5 mm ² / 0.5 ... 1.5 mm ² / 20 - 16
Weight	136 g
Dimensions	35 mm / 126.1 mm / 54 mm
EMC note	

Technical data	
AXL F DO8/2 2A 1H	AXL F DO16/1 1H
Axioline F local bus Bus base module	
5 V DC (via bus base module)	
max. 150 mA	max. 120 mA (up to HW 02) max. 60 mA (from HW 03)
24 V DC	
19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
max. 16 A (provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)	max. 8 A (provide external protection)
Surge protection of the supply voltage Polarity reversal protection of the supply voltage	
2-conductor	1-conductor
8	16
24 V	
2 A	500 mA
16 A (provide external protection)	8 A (provide external protection)
Shutdown with automatic restart	
Short-circuit protection, overload protection of the outputs	
Push-in connection	
0.5 ... 1.5 mm ² / 0.5 ... 1.5 mm ² / 20 - 16	
136 g	134 g
35 mm / 126.1 mm / 54 mm	

Technical data	
Axioline F local bus Bus base module	
5 V DC (via bus base module)	
max. 120 mA	
24 V DC	
19.2 V DC ... 30 V DC (including all tolerances, including ripple)	
max. 8 A (provide external protection)	
Surge protection of the supply voltage Polarity reversal protection of the supply voltage	
FLK connector (20-pos.)	
16	
24 V	
500 mA	
8 A (provide external protection)	
Shutdown with automatic restart	
Short-circuit protection, overload protection of the outputs	
Push-in connection	
0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
108 g	
35 mm / 126.1 mm / 54 mm	
Class A product, see page 527	

Ordering data	
Type	Order No.
Axioline F digital output module , complete with accessories (bus base module)	
- 8 outputs	
- 16 outputs	
- 32 outputs	
- For extended temperature range of -40°C ... +70°C	

Type	Order No.	Pcs./Pkt.
AXL F DO8/2 2A 1H	2688381	1
AXL F DO16/1 1H	2688349	1
AXL F DO8/2 2A XC 1H	1035427	1

Type	Order No.	Pcs./Pkt.
AXL F DO16 FLK 1H	2701813	1

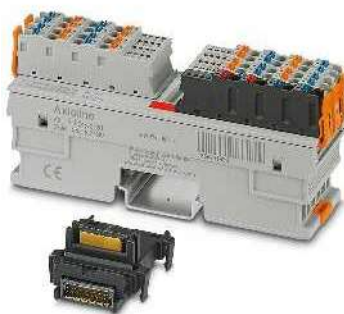
Accessories	
AXL F BS H	2700992
AXL F BS H	2700992

Accessories	
AXL F BS H	2700992
AXL F BS H	2700992

Accessories	
AXL F BS H	2700992
AXL F BS H	2700992



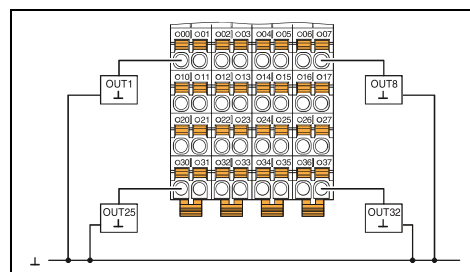
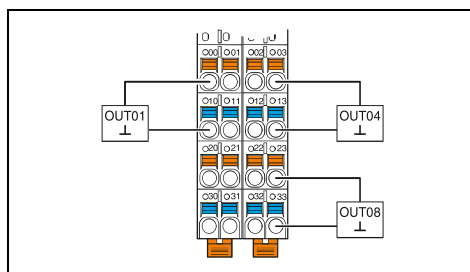
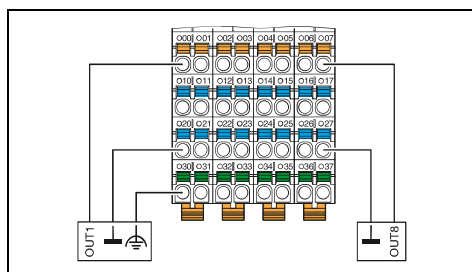
16 outputs



16 / 32 outputs



32 / 64 outputs



Technical data

Technical data

Technical data

AXL F DO16/2 2H

AXL F DO32/1 2H

AXL F DO32/1 1F AXL F DO64/1 2F

Axioline F local bus
Bus base module

Axioline F local bus
Bus base module

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA (up to HW 04)
max. 60 mA (from HW 05)

5 V DC (via bus base module)
max. 60 mA

5 V DC (via bus base module)
max. 120 mA (up to HW 04) max. 120 mA (up to HW 02)
max. 60 mA (from HW 05) max. 60 mA (from HW 03)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

24 V DC
19.2 V DC ... 30 V DC (including all tolerances, including ripple)

max. 8 A (provide external protection)

max. 8 A (provide external protection) max. 16 A (provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)

max. 8 A (up to HW 04, provide external protection) max. 16 A (provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

3-conductor
16
24 V
500 mA
8 A (provide external protection)

2-conductor 1-conductor
16 32
24 V DC
500 mA
8 A (provide external protection) 16 A (provide external protection)

1-conductor
32 64
24 V DC 24 V
500 mA
8 A (up to HW 04, provide external protection) 16 A (provide external protection)

Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16

234 g
53.6 mm / 129.9 mm / 54 mm

160 g 161 g
35 mm / 129.9 mm / 54 mm

191 g 260 g
53.6 mm / 126.1 mm / 54 mm 53.6 mm / 129.9 mm / 54 mm

Ordering data

Ordering data

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DO16/3 2F	2688048	1
AXL F DO16/3 XC 2F	2701228	1

Type	Order No.	Pcs./Pkt.
AXL F DO16/2 2H	1027904	1
AXL F DO32/1 2H	1004925	1

Type	Order No.	Pcs./Pkt.
AXL F DO32/1 1F	2688051	1
AXL F DO32/1 XC 1F	2701230	1

Accessories

Accessories

Accessories

AXL F BS F	2688129	5
------------	---------	---

AXL F BS H	2700992	5
------------	---------	---

AXL F BS F	2688129	5
------------	---------	---

Digital output modules

This module is designed for use within an Axioline F station.

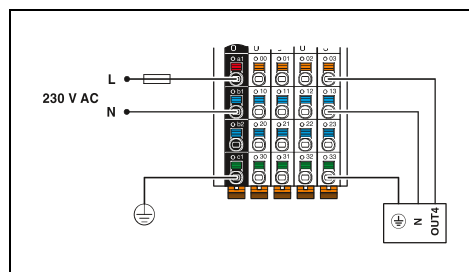
The digital output module is used to output digital signals in the wide voltage range between 12 V AC and 253 V AC. Connection is via 2- or 3-conductor technology.

Features:

- Output behavior can be adjusted for when local bus communication is aborted
- Stored device rating plate



4 outputs,
12 ... 253 V AC wide range



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 120 mA
I/O supply	
Supply of digital output modules U_o	230 V AC
Supply voltage range U_o	12 V AC ... 253 V AC (including all tolerances, including ripple, 50 Hz ... 60 Hz)
Current consumption from U_o	max. 8 A (provide external protection)
Protective circuit	Surge protection of the supply voltage
Digital outputs	
Connection technology	3-conductor
Number of outputs	4 (Triac outputs with zero voltage switch)
Output voltage	230 V AC
Maximum output current per channel	2 A AC
Maximum output current per module	8 A AC (provide external protection)
Behavior in the event of overload	Output may be damaged
Protective circuit	External protection required
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.5 ... 1.5 mm ² / 0.5 ... 1.5 mm ² / 20 - 16
Weight	188 g
Dimensions	53.6 mm / 126.1 mm / 54 mm

Technical data

Technical data		
Axioline F local bus		
Bus base module		
5 V DC (via bus base module)		
max. 120 mA		
230 V AC		
12 V AC ... 253 V AC (including all tolerances, including ripple, 50 Hz ... 60 Hz)		
max. 8 A (provide external protection)		
Surge protection of the supply voltage		
3-conductor		
4 (Triac outputs with zero voltage switch)		
230 V AC		
2 A AC		
8 A AC (provide external protection)		
Output may be damaged		
External protection required		
Push-in connection		
0.5 ... 1.5 mm ² / 0.5 ... 1.5 mm ² / 20 - 16		
188 g		
53.6 mm / 126.1 mm / 54 mm		

Description	
Axioline F digital output module , complete with accessories (bus base module)	
Axioline F bus base module (replacement part)	

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DO4/3 AC 1F	2702068	1

Accessories

AXL F BS F	2688129	5
------------	---------	---

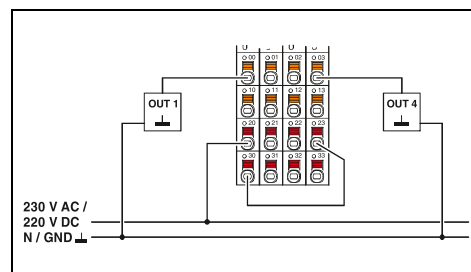
Digital output modules

This module is designed for use within an Axioline F station.

The digital output module is used to output digital signals via relays with floating N/O contacts. Connection is via 2-conductor technology.

Features:

- Impulse withstand voltage: 5 kV
- Developed in accordance with the requirements of IEC 61850-3
- Output behavior can be adjusted for when local bus communication is aborted
- Stored device rating plate



Local bus interface
Designation
Connection method
Power supply for module electronics
Communications power U_{Bus}
Current consumption from U_{Bus}
Relay outputs
Contact type
Output voltage range
Switching current
Switching capacity
Switching rate
Release time
General data
Connection method
Connection data rigid / flexible / AWG
Weight
Dimensions

Technical data

Axioline F local bus
Bus base module
5 V DC (via bus base module)
max. 280 mA (all relays pick up)
4 floating N/O contacts
24 V DC ... 220 V DC -20% / +15%
24 V AC ... 230 V AC -20% / +15% (50/60 Hz)
max. 8 A AC (cos phi = 1)
max. 2000 VA
max. 6 (per minute)
< 5 ms
Push-in connection
0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
206 g
53.6 mm / 126.1 mm / 54 mm

Description
Axioline F digital output module , complete with accessories (bus base module)

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DOR4/2 AC/220DC 1F	2700608	1

Axioline F bus base module (replacement part)
--

Accessories

Accessories	Order No.	Pcs./Pkt.
AXL F BS F	2688129	5

Digital input and output modules

These modules are designed for use within an Axioline F station.

They are used to acquire and output digital 24 V DC signals.

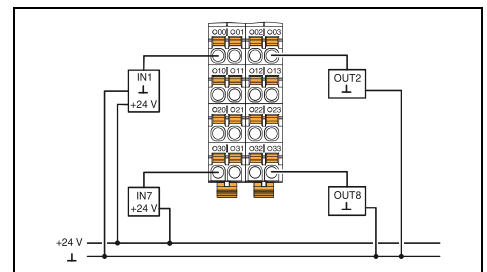
You can adjust the filter times of the inputs to increase noise immunity.

Features:

- Connection of sensors or actuators in 1-, 2- or 3-conductor technology
- Minimum update time of < 100 μ s
- Adjustable filter times
- Maximum input frequency: 5 kHz
- Short-circuit-proof outputs
- Stored device rating plate



8 inputs and 8 outputs



Technical data

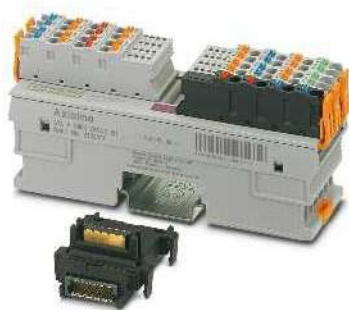
Local bus interface	Axioline F local bus
Designation	Bus base module
Connection method	
Power supply for module electronics	5 V DC (via bus base module)
Communications power U_{Bus}	max. 120 mA
Current consumption from U_{Bus}	
I/O supply	24 V DC
Digital input and output module supply U_{IO}	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Supply voltage range U_{IO}	
Protective circuit	Surge protection of the supply voltage Polarity reversal protection of the supply voltage
Digital inputs	1-conductor
Connection technology	8
Number of inputs	EN 61131-2 types 1 and 3
Description of the inputs	24 V DC
Nominal input voltage U_{IN}	2.4 mA
Nominal input current at U_{IN}	3000 μ s (default) / 1000 μ s / < 100 μ s
Input filter time	Polarity reversal protection of the inputs
Protective circuit	
Digital outputs	1-conductor
Connection technology	8
Number of outputs	24 V DC
Output voltage	500 mA
Maximum output current per channel	4 A (provide external protection)
Maximum output current per module	Shutdown with automatic restart
Behavior in the event of overload	Short-circuit protection, overload protection of the outputs
Protective circuit	
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	133 g
Dimensions	35 mm / 126.1 mm / 54 mm
EMC note	Class A product, see page 527

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F digital input/output module, complete with accessories (bus base module)			
- 8 inputs, 8 outputs	AXL F DI8/1 DO8/1 1H	2701916	1
- 16 inputs, 8 outputs			
- 16 inputs, 16 outputs	AXL F DI8/1 DO8/1 XC 1H	2702017	1
- For extended temperature range of -40°C ... +70°C			

Accessories

Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
--	-------------------	----------------	---



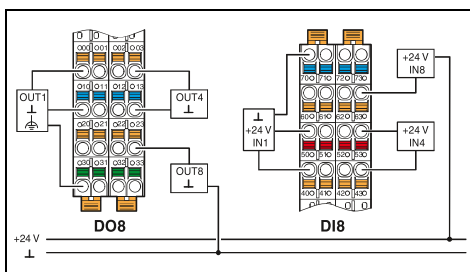
8 inputs and 8 outputs



16 inputs and 8 outputs, 2 A



16 inputs and 16 outputs



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA

24 V DC

19.2 V DC ... 30 V DC (including all tolerances, including ripple)

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

3-conductor
8
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
3000 µs (default) / 1000 µs / < 100 µs
Polarity reversal protection of the inputs

3-conductor
8
24 V DC
500 mA
8 A (provide external protection)
Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

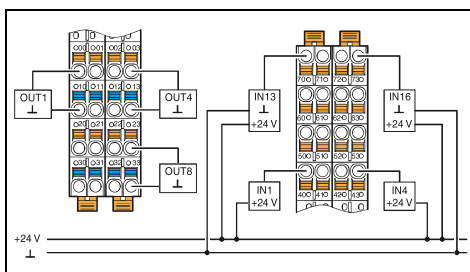
Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
159 g
35 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI8/3 DO8/3 2H	2702071	1

Accessories

AXL F BS H	2700992	5
------------	---------	---



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA

24 V DC

19.2 V DC ... 30 V DC (including all tolerances, including ripple)

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

1-conductor
16
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
3000 µs (default) / 1000 µs / < 100 µs
Polarity reversal protection of the inputs

2-conductor
8
24 V DC
2 A
16 A (provide external protection)
Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

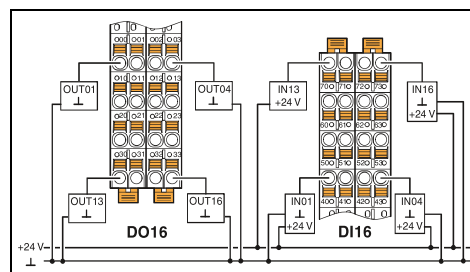
Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
159 g
35 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI16/1 DO8/2-2A 2H	2702291	1

Accessories

AXL F BS H	2700992	5
------------	---------	---



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 120 mA

24 V DC

19.2 V DC ... 30 V DC (including all tolerances, including ripple)

Surge protection of the supply voltage
Polarity reversal protection of the supply voltage

1-conductor
16
EN 61131-2 types 1 and 3
24 V DC
2.4 mA
3000 µs (default) / 1000 µs / < 100 µs
Polarity reversal protection of the inputs

1-conductor
16
24 V DC
500 mA
8 A (provide external protection)
Shutdown with automatic restart
Short-circuit protection, overload protection of the outputs

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
159 g
35 mm / 129.9 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F DI16/1 DO16/1 2H	2702106	1

Accessories

AXL F BS H	2700992	5
------------	---------	---

Analog input modules

These modules are designed for use within an Axioline F station.

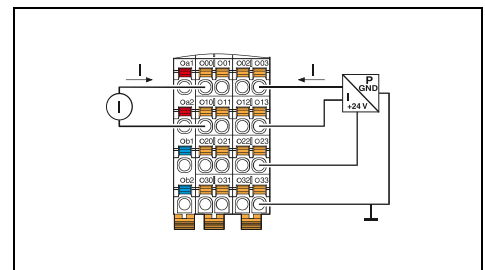
They are used to acquire standard analog current and voltage signals. Connection is via 2-, 3- or 4-conductor technology and a shield connection.

Features:

- Up to 8 analog differential signal inputs
- Current and voltage measuring ranges
- Input filter selection
- Minimum update time of 250 μ s
- 16-bit measured value representation
- Integrated sensor supply
- Stored device rating plate



**4 inputs
Current signals**



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 150 mA
I/O supply	
Supply for analog modules (U_A)	24 V DC
Protective circuit	Surge protection of the supply voltage Polarity reversal protection of the supply voltage Transient protection
Analog inputs	
Connection technology	2-, 3-, 4-conductor
Number of inputs	4
Voltage input signal	-
Current input signal	0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA
Characteristics	
Measured value representation	16 bits (15 bits + sign bit)
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)
Precision	0.1% (of measuring range final value for active mean-value generation and 30 Hz filter)
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	145 g
Dimensions	35 mm / 126.1 mm / 54 mm

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F analog input module , complete with accessories (bus base module)			
- 4 inputs	AXL F AI4 I 1H	2688491	1
- 8 inputs	AXL F AI4 I XC 1H	2702007	1
- For extended temperature range of -40°C ... +70°C			

Accessories

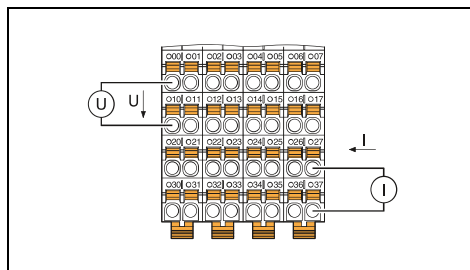
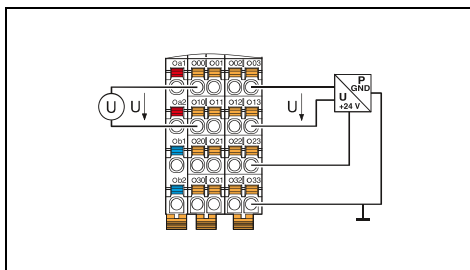
Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
Axioline shield connection set	AXL SHIELD SET	2700518	1



4 inputs
Voltage signals



8 inputs



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 150 mA

24 V DC
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage
Transient protection supply voltage

2-, 3-, 4-conductor
4
0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
-

16 bits (15 bits + sign bit)
30 Hz, 12 kHz and mean-value generation (can be parameterized)

0.1% (of measuring range final value for active mean-value generation and 30 Hz filter)

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
145 g
35 mm / 126.1 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F AI4 U 1H	2688501	1
AXL F AI4 U XC 1H	2702008	1

Accessories

AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 130 mA

24 V DC
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage
Transient protection supply voltage

2-conductor
8
0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA

16 bits (15 bits + sign bit)
30 Hz, 12 kHz and mean-value generation (can be parameterized)

0.1% (of measuring range final value for active mean-value generation and 30 Hz filter)

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
204 g
53.6 mm / 126.1 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F AI8 1F	2688064	1
AXL F AI8 XC 1F	2701232	1

Accessories

AXL F BS F	2688129	5
AXL SHIELD SET	2700518	1

Analog input and output modules

This module is designed for use within an Axioline F station.

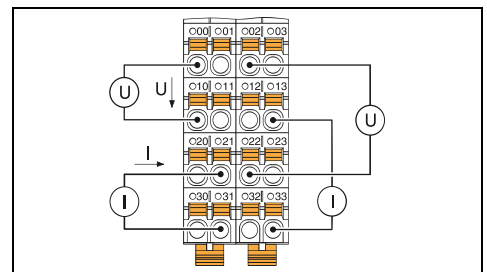
It is used to acquire and output standard analog current and voltage signals. Connection is via 2-conductor technology and a shield connection.

Features:

- 2 analog bipolar inputs and outputs each
- Current and voltage ranges
- Minimum update time of 250 μ s
- 16-bit output value
- Overload and short-circuit protected
- Stored device rating plate



2 inputs and 2 outputs



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 150 mA
I/O supply	
Supply for analog modules (U_A)	24 V DC
Analog inputs	
Connection technology	2-conductor
Number of inputs	2
Voltage input signal	0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
Current input signal	0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA
Analog outputs	
Connection technology	2-conductor
Number of outputs	2
Voltage output signal	0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
Current output signal	0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA
Load/output load current output	$\leq 500 \Omega$
Protective circuit	Short-circuit and overload protection Transient protection
Characteristics	
Representation of output values	16 bits (15 bits + sign bit)
Precision	0.1% (of measuring range final value for active mean-value generation and 30 Hz filter) typ. 0.1% (of output range final value)
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	200 g
Dimensions	35 mm / 126.1 mm / 54 mm

Technical data

Local bus interface		
Axioline F local bus		
Bus base module		
Power supply for module electronics		
Communications power U_{Bus}		
Current consumption from U_{Bus}		
I/O supply		
Supply for analog modules (U_A)		
Analog inputs		
Connection technology		
Number of inputs		
Voltage input signal		
Current input signal		
Analog outputs		
Connection technology		
Number of outputs		
Voltage output signal		
Current output signal		
Load/output load current output		
Protective circuit		
Characteristics		
Representation of output values		
Precision		
General data		
Connection method		
Connection data rigid / flexible / AWG		
Weight		
Dimensions		

Ordering data

Description	
Axioline F analog I/O module , complete with accessories (bus base module)	
- For extended temperature range of -40°C ... +70°C	

Type	Order No.	Pcs./Pkt.
AXL F AI2 AO2 1H	2702072	1
AXL F AI2 AO2 XC 1H	1035429	1

Axioline F bus base module (replacement part)	
Axioline shield connection set	

Accessories		
Type	Order No.	Pcs./Pkt.
AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

Analog output modules

These modules are designed for use within an Axioline F station.

They are used to output standard analog current and voltage signals. Connection is via 2-conductor technology and a shield connection.

Features:

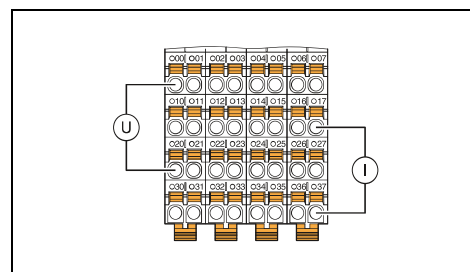
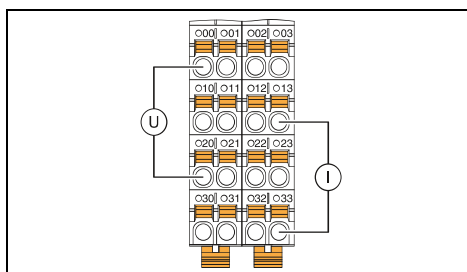
- Up to 8 analog bipolar outputs
- Current and voltage ranges
- Minimum update time of 250 μs
- 16-bit output value
- Overload and short-circuit protected
- Stored device rating plate



4 outputs



8 outputs



Technical data

Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{BUS}	5 V DC (via bus base module)
Current consumption from U_{BUS}	max. 150 mA
I/O supply	
Supply for analog modules (U_A)	24 V DC
Analog outputs	
Connection technology	2-conductor
Number of outputs	4
Voltage output signal	0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
Current output signal	0 mA ... 20 mA / 4 mA ... 20 mA
Load/output load current output	≤ 500 Ω
Protective circuit	Short-circuit and overload protection Transient protection
Characteristics	
Representation of output values	16 bits (15 bits + sign bit)
Precision	typ. 0.1% (of output range final value)
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	145 g
Dimensions	35 mm / 126.1 mm / 54 mm

Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{BUS}	5 V DC (via bus base module)
Current consumption from U_{BUS}	max. 130 mA
I/O supply	
Supply for analog modules (U_A)	24 V DC
Analog outputs	
Connection technology	2-conductor
Number of outputs	8
Voltage output signal	0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V
Current output signal	0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA
Load/output load current output	to 500 Ω
Protective circuit	Short-circuit and overload protection Transient protection
Characteristics	
Representation of output values	16 bits (15 bits + sign bit)
Precision	typ. 0.1% (of output range final value)
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	260 g
Dimensions	53.6 mm / 126.1 mm / 54 mm

Ordering data

Description	
Axioline F analog output module , complete with accessories (bus base module)	
- 4 outputs	
- 8 outputs	
- For extended temperature range of -40°C ... +70°C	

Type	Order No.	Pcs./Pkt.
AXL F AO4 1H	2688527	1
AXL F AO4 XC 1H	2702153	1

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F AO8 1F	2688080	1
AXL F AO8 XC 1F	2701237	1

Accessories

Axioline F bus base module (replacement part)	
Axioline shield connection set	

Accessories	Order No.	Pcs./Pkt.
AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

Accessories

Accessories	Order No.	Pcs./Pkt.
AXL F BS F	2688129	5
AXL SHIELD SET	2700518	1



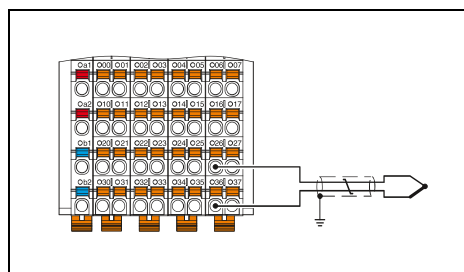
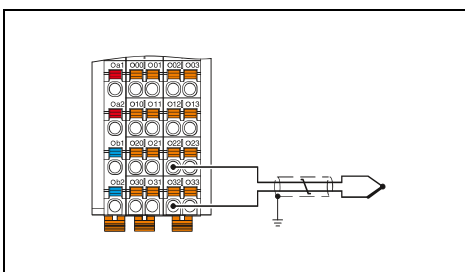
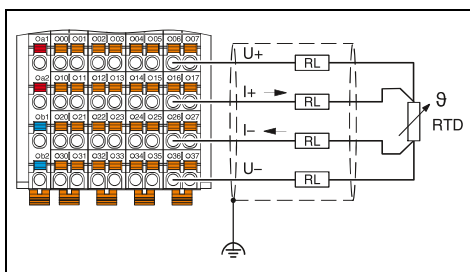
8 RTD inputs,
high dynamic measuring range



4 UTH inputs



8 UTH inputs



Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 180 mA

24 V DC
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage
Transient protection

2-, 4-conductor (shielded)
8 (for resistance temperature detectors)

Short-circuit protection, overload protection of the inputs
Transient protection of inputs
Transient protection of sensor supplies

Pt, Ni, Cu sensors

-
0 Ω ... 500 Ω
-

16 bits (15 bits + sign bit)
8 ms / 16 ms / 32 ms / 120 ms (adjustable)
typ. ± 0.1 K (Pt 100 with 4-conductor connection)

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
215 g
53.6 mm / 126.1 mm / 54 mm

Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 160 mA

24 V DC
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage
Transient protection

2-conductor (shielded, twisted pair)
4 + 1 (4 inputs for thermocouples or linear voltage,
plus 1 input -5 V to +5 V)
Short-circuit protection, overload protection of the inputs
Transient protection of inputs

Pt 100 (2 external cold junctions, can also be used as a sensor input)

-
-100 mV ... 100 mV

16 bits (15 bits + sign bit)
40 ms / 60 ms / 100 ms / 120 ms (adjustable)
typ. ± 0.19 K (thermocouple type K, plus tolerance of cold junction)

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
144 g
35 mm / 126.1 mm / 54 mm

Technical data

Axioline F local bus
Bus base module

5 V DC (via bus base module)
max. 180 mA

24 V DC
Surge protection of the supply voltage
Polarity reversal protection of the supply voltage
Transient protection

2-conductor (shielded, twisted pair)
8 + 1 (8 inputs for thermocouples or linear voltage,
plus 1 input -5 V to +5 V)
Short-circuit protection, overload protection of the inputs
Transient protection of inputs

Pt 100 (4 external cold junctions, can also be used as a sensor input)

U, T, L, J, E, K, N, S, R, B, C, W, HK

-
-100 mV ... 100 mV

16 bits (15 bits + sign bit)
40 ms / 60 ms / 100 ms / 120 ms (adjustable)
typ. ± 0.19 K (thermocouple type K, plus tolerance of cold junction)

Push-in connection
0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16
203 g
53.6 mm / 126.1 mm / 54 mm

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F RTD8 S 1F	2702120	1

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F UTH4 1H	2688598	1

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F UTH8 1F	2688417	1
AXL F UTH8 XC 1F	2702464	1

Accessories

AXL F BS F	2688129	5
AXL SHIELD SET	2700518	1

Accessories

AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

Accessories

AXL F BS F	2688129	5
AXL SHIELD SET	2700518	1

Serial communication module

This module is designed for use within an Axioline F station.

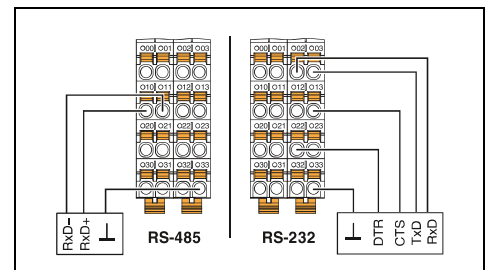
It is used to connect devices with a serial interface, e.g., bar code scanners.

Features:

- Baud rates of up to 250 kbaud
- Communication via acyclic services or process data
- Support of various protocols (e.g., end-to-end protocol)
- 5 RS-232 hardware handshake signals with status indication via LEDs
- Integrated RS-485/RS-422 termination resistor
- Stored device rating plate



1 serial input and output channel as RS-485/RS-422 or RS-232 version



Local bus interface
Designation
Connection method
Serial port
Interface
Connection method
Power supply for module electronics
Communications power U_{Bus}
Current consumption from U_{Bus}
Serial input/output channel
Input buffer
Output buffer
Transmission speed
Data bits
Stop bits
Parity
Transmission type
General data
Connection method
Connection data rigid / flexible / AWG
Weight
Dimensions

Technical data	
Axioline F local bus	
Bus base module	
RS-232, RS-485, RS-422	
Push-in connection	
5 V DC (via bus base module)	
typ. 200 mA	
4 kByte	
1 kByte	
110 bps ... 250 kbps (can be parameterized)	
5 ... 8	
1 or 2	
Even, odd or no parity	
Transparent mode, end-to-end mode, XON/XOFF, Modbus/RTU	
Push-in connection	
0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
135 g	
35 mm / 126.1 mm / 54 mm	

Description
Axioline F communication module , complete with accessories (bus base module)
- 1 serial input and output channel as RS-485/RS-422 or RS-232 version
- For extended temperature range of -40°C ... +70°C

Ordering data		
Type	Order No.	Pcs./Pkt.
AXL F RS UNI 1H	2688666	1
AXL F RS UNI XC 1H	2702006	1

Axioline F bus base module (replacement part)
Axioline shield connection set

Accessories		
AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

IO-Link master module

new

This module is designed for use within an Axioline F station.

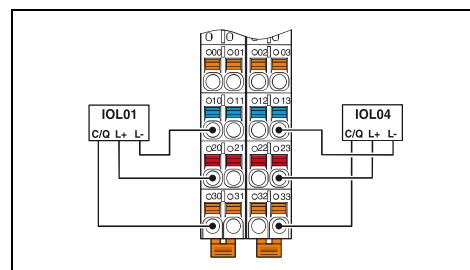
The IO-Link master enables the operation of up to eight IO-Link devices. Alternatively, you can connect a standard sensor or actuator to each port. Connected IO-Link devices can be parameterized easily and conveniently using the IOL-CONF parameterization software.

Features:

- Connection of eight IO-Link devices
- Alternatively: connection of one digital sensor or actuator per port
- Connection of IO-Link devices in 3-conductor technology
- Connection of sensors in 3-conductor technology
- Connection of actuators in 2-conductor technology
- Parameter data storage on the master
- IO-Link specification V1.1.2
- Stored device rating plate



8 IO-Link ports

**Technical data**

Local bus interface	
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 50 mA
IO-Link ports	
Connection technology	3-conductor
Number of ports	8 (Class A)
IO-Link port supply L+	
Nominal voltage for I/O supply	24 V DC
Nominal current per IO-Link port	200 mA (at C/Q) 1 A (at L+/L-)
Digital inputs in the SIO mode	
Connection technology	3-conductor
Number of inputs	max. 8 (EN 61131-2 type 1)
Nominal input voltage U_{IN}	24 V DC
Sensor current per channel	max. 1 A (from L+/L-)
Digital outputs in the SIO mode	
Connection technology	2-, 3-conductor
Number of outputs	max. 8
Nominal output voltage	24 V DC
Nominal current per channel	200 mA
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	162 g
Dimensions	35 mm / 129.9 mm / 54 mm

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F IO-Link master, complete with accessories (bus base module)	AXL F IOL8 2H	1027843	1

Accessories

Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
---	------------	---------	---

Pulse width module

new

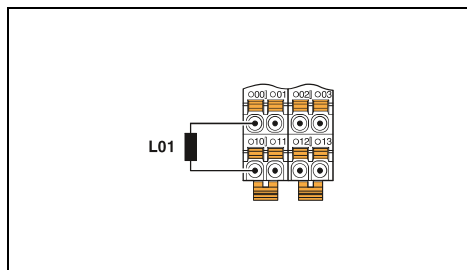
The module is designed for use within an Axioline F station.
 Two channels that operate independently of one another offer the option of pulse width modulation (PWM) for the output signals.
 The module supports PWM mode and pulse generator mode.

Features:

- 2 independent channels
- Output of 5 V or 24 V signals
- Push-pull output
- Pulse generator
- Nominal current per output: 500 mA for 24 V output
- Resolution of the frequency output can be set: 1 Hz, 0.1 Hz, 0.01 Hz
- Stored device rating plate



Pulse width modulation, frequency generator or pulse/direction signal output



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 150 mA
PWM output	
Connection technology	2-conductor (shielded, twisted pair)
Number of outputs	2
Nominal output voltage	24 V ($U_O - 1.1 V$) 5 V DC
Nominal current	max. 500 mA (at 24 V DC) max. 10 mA (at 5 V DC)
Frequency range	0 Hz ... 65535 Hz
Pulse duty factor	0% ... 100%
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	130 g
Dimensions	35 mm / 126.1 mm / 54 mm

Technical data

Technical data		
Axioline F local bus		
Bus base module		
5 V DC (via bus base module)		
max. 150 mA		
2-conductor (shielded, twisted pair)		
2		
24 V ($U_O - 1.1 V$)		
5 V DC		
max. 500 mA (at 24 V DC)		
max. 10 mA (at 5 V DC)		
0 Hz ... 65535 Hz		
0% ... 100%		
Push-in connection		
0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16		
130 g		
35 mm / 126.1 mm / 54 mm		

Description	
Axioline F function module	
Axioline F bus base module (replacement part)	
Axioline shield connection set	

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F PWM2 1H	1007352	1

Accessories

AXL F BS H	2700992	5
AXL SHIELD SET	2700518	1

Power measurement module

The module is designed for use within an Axioline F station.

The power measurement module is used for direct measurement of AC currents up to 5 A, including neutral conductor current and phase conductor voltages up to 400 V AC (phase to neutral conductor) or outer conductor voltages up to 690 V AC (phase to phase).

The module is used to analyze AC networks. For example, you can use it in distribution systems to measure current, voltage, and power, and to identify distortions and harmonics.

You can use the power measurement module in two operating modes.

In “r.m.s. values” mode, the module acquires mains variables in three-phase mains. Mains variables are phase currents, neutral conductor current, phase and outer conductor voltages, real power, reactive power, and apparent power as well as the power factors of phases, energy flow directions, and frequency.

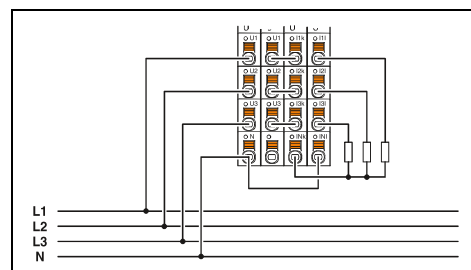
In “instantaneous values” mode, the module acquires the instantaneous (scanning) values of a measuring signal. This measuring mode is used to analyze the waveform of the measuring signal.

Features:

- 4 inputs, 0 A AC ... 5 A AC for phase currents and neutral conductor current
- 3 inputs for outer conductor voltages up to 690 V AC, direct connection supported
- Harmonic analysis
- Determination of maximum value
- Power meter
- Process data update < 500 μ s
- Stored device rating plate



Analysis of AC networks



Technical data

Local bus interface	Axioline F local bus
Designation	Bus base module
Connection method	
Power supply for module electronics	5 V DC (via bus base module)
Communications power U_{Bus}	max. 200 mA
Current consumption from U_{Bus}	
Current measuring input	
Number of inputs	4
Nominal current range	0 A AC ... 5 A AC
Overload	1.4 times continuous; 150 A for 10 ms
Precision	0.25% (of the nominal value)
Scanning rate	8k samples/s
Voltage measuring input	
Number of inputs	3
Nominal voltage range	0 V AC ... 690 V AC (conductor-conductor, chained) 0 V AC ... 400 V AC (conductor to neutral conductor, not phase to phase)
Overload	1.2 times the nominal value
Precision	0.25% (of the nominal value)
Scanning rate	8k samples/s
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	1.5 / 1.5 / 16
Weight	245 g
Dimensions	53.6 mm / 126.1 mm / 65.5 mm
EMC note	Class A product, see page 527

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F power measurement module, complete with accessories (bus base module)	AXL F PM EF 1F	2702671	1

Accessories

Axioline F bus base module (replacement part)	AXL F BS F	2688129	5
---	------------	---------	---

Function/position detection module

This module is designed for use within an Axioline F station.

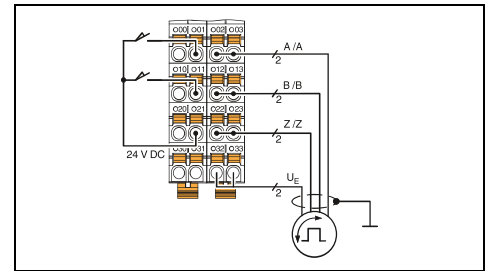
It is used for counting pulses and for position detection using incremental encoders.

Features:

- Two counter inputs (32-bit)
- Two incremental encoder interfaces (32-bit)
- Symmetrical or asymmetrical encoders can be connected
- Maximum frequency of 300 kHz
- Eight digital inputs (gate, direction signal, latch, home position switch)
- Two digital outputs
- 5 V and 24 V sensor/encoder supply
- Encoder monitoring
- Rotary axis function
- Ten homing methods
- Stored device rating plate



**2 counter inputs,
2 incremental encoder interfaces**



Technical data

Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 120 mA
I/O supply	
Supply of digital input modules U_I	24 V DC
Supply voltage range U_I	19.2 V DC ... 30 V DC including all tolerances, including ripple
Protective circuit	Surge protection of the supply voltage Polarity reversal protection of the supply voltage
Counter input	
Number of inputs	2 (S1, S2)
Input frequency	max. 300 kHz (1 channel wired)
Input voltage	24 V DC
Encoder inputs	
Number of inputs	2 (A1, /A1, B1, /B1, Z1, /Z1; A2, /A2, B2, /B2, Z2, /Z2)
Encoder signals	Symmetrical and asymmetrical encoders
Input frequency	max. 300 kHz (1 channel wired)
Digital inputs	
Connection technology	1-conductor (optional: 2-, 3-conductor)
Number of inputs	8 (CNT: G1, G2, Dir1, Dir2; INC: Ref1, Ref2, L1, L2)
Description of the inputs	EN 61131-2, type 3
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	2.5 mA (per channel)
Digital outputs	
Number of outputs	2 (Out1, Out2)
Output voltage	24 V DC
Maximum output current per channel	500 mA
Protective circuit	Short-circuit protection, overload protection of the outputs
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	205 g
Dimensions	53.6 mm / 126.1 mm / 54 mm

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F function module			
- For extended temperature range of -40°C ... +70°C	AXL F CNT2 INC2 1F	2688093	1
	AXL F CNT2 INC2 XC 1F	2701239	1

Accessories

Axioline F bus base module (replacement part)	AXL F BS F	2688129	5
Axioline shield connection set	AXL SHIELD SET	2700518	1

Position detection module

This module is designed for use within an Axioline F station.

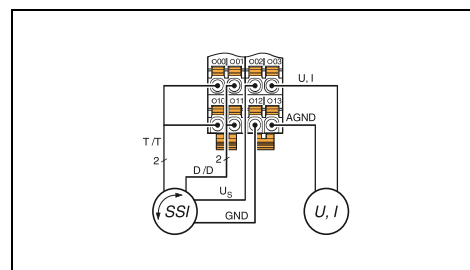
This module enables you to record data from absolute encoders with SSI interface.

Features:

- Position detection using absolute encoders with SSI interface
- Encoder resolution up to 56 bits
- Transmission frequency of up to 2 MHz
- Gray or binary code
- Reversal of direction of rotation
- Synchronized transmission of encoder values
- Detailed encoder diagnostics
- 16-bit resolution of the analog output value
- D/A conversion time typically 5 μ s
- Stored device rating plate



1 SSI interface for absolute encoder,
1 analog output



Local bus interface		Technical data	
Designation		Axioline F local bus	
Connection method		Bus base module	
Power supply for module electronics		5 V DC (via bus base module)	
Communications power U_{Bus}		max. 140 mA	
Current consumption from U_{Bus}			
I/O supply		24 V DC	
Supply U_I		Surge protection	
Protective circuit		Reverse polarity protection	
		Transient protection	
Encoder inputs		SSI interface	
Input name		1	
Number of inputs		2 MHz	
Transmission frequency		8 ... 56 bit	
Adjustable resolution			
Analog outputs		2-conductor (shielded, twisted pair)	
Connection technology		1	
Number of outputs		0 V ... 5 V / -5 V ... 5 V / 0 V ... 10 V / -10 V ... 10 V	
Voltage output signal		0 mA ... 20 mA / 4 mA ... 20 mA / -20 mA ... 20 mA	
Current output signal		max. 500 Ω	
Load/output load current output		Surge protection	
Protective circuit		Short-circuit and overload protection	
		Transient protection	
Precision		typ. 0.1% (of output range final value)	
Characteristics			
Representation of output values		16 bits (15 bits + sign bit)	
General data			
Connection method		Push-in connection	
Connection data rigid / flexible / AWG		0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16	
Weight		135 g	
Dimensions	W / H / D	35 mm / 126.1 mm / 54 mm	
Description		Ordering data	
Axioline F function module		Type	Order No. Pcs./Pkt.
		AXL F SSI1 AO1 1H	2688433 1
Axioline F bus base module (replacement part)		Accessories	
Axioline shield connection set		AXL F BS H	2700992 5
		AXL SHIELD SET	2700518 1

Position detection module

This module is designed for use within an Axioline F station.

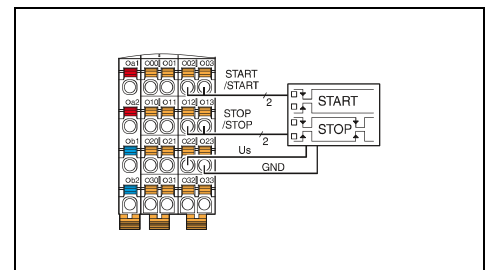
It is used to evaluate magnetostrictive position sensors with a start/stop interface.

Features:

- 2 channels for magnetostrictive position sensors with start/stop interface
- 5 stop events per channel
- Automatic parameter upload
- 4 digital inputs
- Can be used under extreme ambient conditions
- Extended temperature range (-40°C ... +70°C)
- Stored device rating plate



2 digital pulse interfaces for evaluating magnetostrictive position sensors



Local bus interface	
Designation	Axioline F local bus
Connection method	Bus base module
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 150 mA
I/O supply	
Supply of digital input modules U_I	24 V DC
Supply voltage range U_I	19.2 V DC ... 30 V DC including all tolerances, including ripple
Protective circuit	
	Surge protection of the supply voltage
	Polarity reversal protection of the supply voltage
	Transient protection
Input for magnetostrictive encoders	
Encoder length range	50 mm ... 10 m
Resolution (measuring length)	1 μ m
Ultrasonic speed (gradient)	2400 m/s ... 3100 m/s
Digital inputs	
Connection technology	1-conductor
Number of inputs	4
Description of the inputs	EN 61131-2 types 1 and 3
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	2.4 mA
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	135 g
Dimensions	35 mm / 126.1 mm / 54 mm

Technical data

Local bus interface		
Axioline F local bus		
Bus base module		
Power supply for module electronics		
Communications power U_{Bus}		
Current consumption from U_{Bus}		
I/O supply		
Supply of digital input modules U_I		
Supply voltage range U_I		
Protective circuit		
Surge protection of the supply voltage		
Polarity reversal protection of the supply voltage		
Transient protection		
Input for magnetostrictive encoders		
Encoder length range		
Resolution (measuring length)		
Ultrasonic speed (gradient)		
Digital inputs		
Connection technology		
Number of inputs		
Description of the inputs		
Nominal input voltage U_{IN}		
Nominal input current at U_{IN}		
General data		
Connection method		
Connection data rigid / flexible / AWG		
Weight		
Dimensions		

Description	Axioline F position detection module, complete with accessories (bus base module) - For extended temperature range of -40°C ... +70°C
-------------	--

Ordering data

Type	Order No.	Pcs./Pkt.
AXL F IMPULSE2 XC 1H	2702655	1

Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
Axioline shield connection set	AXL SHIELD SET	2700518	1

Accessories

Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
Axioline shield connection set	AXL SHIELD SET	2700518	1

Strain gauge capture module

This module is designed for use within an Axioline F station.

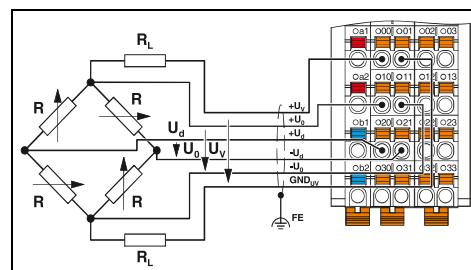
The module is used to evaluate strain gauges that may be located in weighing cells or load cells, for example. The strain gauges can be connected using 6-conductor or 4-conductor technology.

Features:

- 2 high-precision inputs for strain gauges
- Measuring ranges adjusted with nominal characteristic values upon delivery
- Manual entry of characteristic values
- Process data update can be parameterized in increments between 200 μ s and 100 ms
- Path adjustment in the process environment
- 2-point adjustment
- Advanced open-circuit detection
- Sensor supply of up to 115 mA (8 load cells with 350 Ω per channel)
- Each channel: low-impedance, floating N/O contact
- The channels are parameterized independently of one another via the bus system
- Stored device rating plate



2 high-precision inputs



Technical data

Local bus interface	Bus base module
Connection method	
Power supply for module electronics	
Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	max. 75 mA
I/O supply	
Supply for analog modules (U_A)	24 V DC
Analog inputs	
Connection technology	6- or 4-wire, twisted pair shielded cable
Number of inputs	2
Description of the inputs	Input channels for strain gauge
Bridge difference U_d	Measuring range specified by selecting the characteristic
Bridge voltage U_0	5 V
Analog outputs	
Description of the outputs	Jumper supply
Number of outputs	2
Impedance	> 43 Ω (per channel)
Output current	max. 115 mA (per channel)
Characteristics	
Unipolar	can be parameterized: 350 μ V/V ... 6500 μ V/V
Measured value representation	32 bits
Process data update	can be parameterized: 200 μ s, 500 μ s, 1 ms, 2 ms, 5 ms, 10 ms, 12.5 ms, 20 ms, 50 ms, 100 ms
General data	
Connection method	Push-in connection
Connection data rigid / flexible / AWG	0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16
Weight	150 g
Dimensions	35 mm / 126.1 mm / 54 mm
	W / H / D

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F strain gauge capture module, complete with accessories (bus base module)	AXL F SGI2 1H	2702911	1
Accessories			
Axioline F bus base module (replacement part)	AXL F BS H	2700992	5
Axioline shield connection set	AXL SHIELD SET	2700518	1

Modular proxy



The Axioline P modular proxy connects PROFIBUS PA segments directly to a PROFINET network.

The modular station communicates with a PROFINET controller, e.g., a distributed control system (DCS), via a bus coupler. As an option, you can connect up to eight PROFIBUS PA segments to the individual proxy outlets in a compact way. To ensure the individual segments are immune to interference, appropriate shield connection technology is available.

FDT/DTM technology simplifies the startup and device management of the proxy station, which is fully integrated into higher-level control systems, and of the connected PROFIBUS PA devices.

PROFINET redundancy

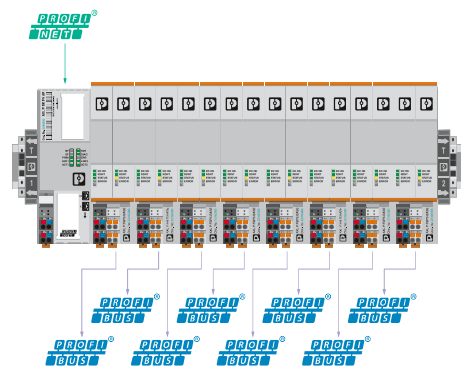
The AXL P BK PN AF PROFINET bus coupler supports the specification for the implementation of S2 system redundancy using a single bus coupler. Two bus couplers are required in order to satisfy PROFINET system redundancy R1 and R2. The hot-swap capability integrated in the bus coupler ensures high system availability.

PROFIBUS PA power supply

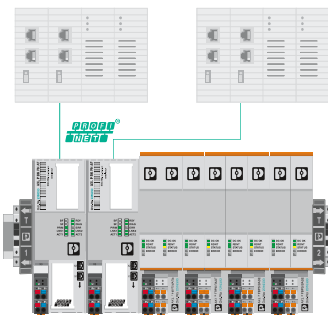
You can supply the PROFIBUS PA segment with power using a single fieldbus power supply module. High failsafe performance and process reliability can be achieved by installing two power supply modules in a single base and thus supplying a PROFIBUS PA segment redundantly. The local LED indicator on the power supply module provides the status of the module and redundancy.

Cost-effective system modernization

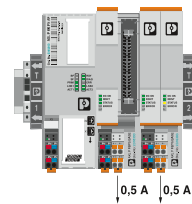
PROFIBUS PA sensors can be connected directly to the modular Axioline P proxy. Proven fieldbus technology, such as HART or Modbus/RTU, can therefore be integrated into PROFINET networks via PROFIBUS PA gateways that are connected to the modular Axioline P proxy.



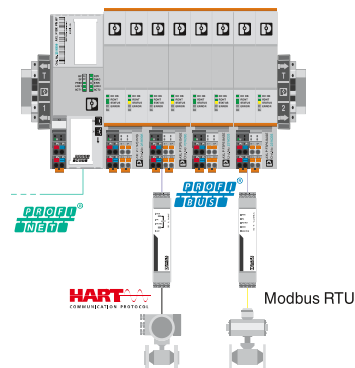
Up to eight PROFIBUS PA segments per station



Support of PROFINET system redundancy S2, R1, and R2



Up to two power supplies per PROFIBUS PA segment



Integration of proven fieldbus technology in PROFINET networks

Product overview

Bus coupler	Fieldbus power supply base	Fieldbus power supply
		
98	99	99

General technical data

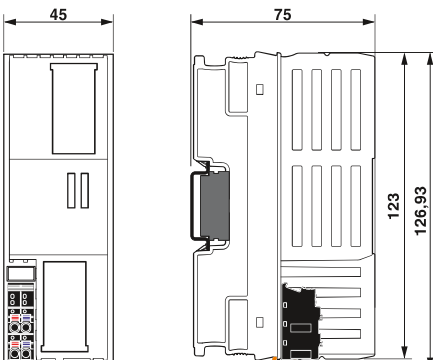
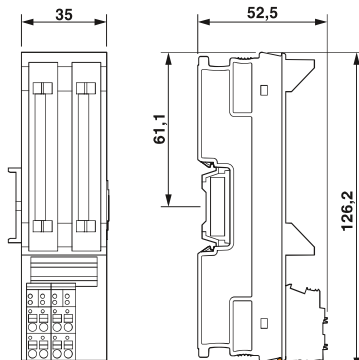
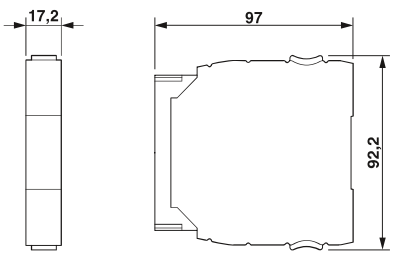
Ambient conditions

Temperature range (operation) Relative humidity (operation/storage/transport) Vibration Shock Continuous shock Maximum altitude (operation) Degree of protection	-40°C ... +65°C 5% to 95% (non-condensing) 5g in accordance with EN 60068-2-6 / IEC 60068-2-6 30g in accordance with EN 60068-2-27 / IEC 60068-2-27 10g in accordance with EN 60068-2-27 / IEC 60068-2-27 2000 m IP20
---	---

Electromagnetic compatibility

Noise immunity	In accordance with NE 021
----------------	---------------------------

Housing types and dimensions

Bus coupler	Fieldbus power supply base	Fieldbus power supply
		

Bus coupler

In conjunction with a fieldbus power supply base and at least one fieldbus power supply, the AXL P BK PN AF Axioline P bus coupler for PROFINET creates a modular proxy for connecting PROFIBUS PA segments to a PROFINET network.

The bus coupler supports PROFINET system redundancy S2, R1, and R2, and is hot swappable during operation with two bus couplers.

Parameterization, configuration, and diagnostics of the modular proxy are conveniently carried out via FDT/DTM.

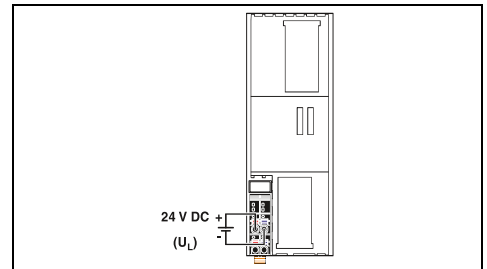
Features:

- 2 Ethernet ports with integrated switch
- PROFINET RT support
- Support of PROFINET system redundancy S2, R1, and R2
- Supports up to 8 PROFIBUS PA segments (in conjunction with a fieldbus power supply base and at least one fieldbus power supply)
- Supports PROFIBUS PA profile 4.0
- Alarm behavior in accordance with NE 107

new



RJ45 connection



Technical data

Interface	Fieldbus system Connection method Number Transmission speed Transmission distance Protocols supported	PROFINET RJ45 socket, auto negotiation and auto crossing 2 100 Mbps (full duplex) max. 100 m PROFINET
Local bus interface	Designation Connection method	Axioline P local bus Bus base module
Power supply for module electronics	Supply of communications power U_L Maximum permissible voltage range Communications power U_{Bus} Current supply at U_{Bus} Protective circuit	24 V DC 10 V DC ... 32 V DC 5 V DC (via bus base module) 2 A Surge protection of the supply voltage Polarity reversal protection of the supply voltage
General data	Connection method Connection data rigid / flexible / AWG Weight Dimensions EMC note	Push-in connection 0.2 ... 1.5 mm ² / 0.2 ... 1.5 mm ² / 24 - 16 249 g 45 mm / 126.93 mm / 75 mm Class A product, see page 527

Description	Axioline P bus coupler - For PROFINET, extended functionality
--------------------	---

Ordering data		
Type	Order No.	Pcs./Pkt.
AXL P BK PN AF	2316390	1

Accessories			
Axioline P bus base module (replacement part)	AXL P BS 45	2316397	1
Axioline P local bus terminator (set)	AXL P TERM PAIR	2316402	1

Power supply

new

new

In a modular topology, you can connect up to eight PROFIBUS PA segments to the Axioline P modular proxy.

Power is either supplied individually in simplex mode using one power supply module or redundantly using two power supply modules on a power supply base.

Features:

- Redundant power supplies, hot swappable



Fieldbus power supply base



Fieldbus power supply

Interface	
Designation	Axioline P local bus
Connection method	Bus base module
Input data	
Nominal input voltage range	-
Nominal current range	-
Output data	
Output voltage range	-
Output current	-
Max. power dissipation	-
Signaling	
Signaling DC OK	-
Signaling alarm	-
Redundancy indication OK	-
Status indication	-
General data	
Dimensions	W / H / D 35 / 130 / 125 mm
Degree of protection	IP20
Ambient temperature (operation)	-40°C ... 65°C (mounting position: wall mounting on horizontal DIN rail)
Ambient temperature (storage/transport)	-40°C ... 85°C
Conformance/approvals	
ATEX	Ex II 3 G Ex ec IIC T4 Gc IBE XU 18ATEXB018X
IECEX	Ex ec IIC T4 Gc IECEx IBE 18.0023X
UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D T4 Class I, Zone 2, IIC T4

Technical data		
Interface	-	
Designation	-	
Connection method	-	
Input data	-	
Nominal input voltage range	18.5 V DC ... 30.5 V DC	
Nominal current range	500 mA ... 1.35 A	
Output data	-	
Output voltage range	28 V DC ... 30 V DC (on the trunk)	
Output current	500 mA	
Max. power dissipation	2.5 W (typical)	
Signaling	-	
Signaling DC OK	Green LED	
Signaling alarm	Red LED	
Redundancy indication OK	Green LED	
Status indication	Green LED	
General data	-	
Dimensions	W / H / D 17 / 92 / 97 mm	
Degree of protection	IP20	
Ambient temperature (operation)	-40°C ... 65°C	
Ambient temperature (storage/transport)	-40°C ... 85°C	
Conformance/approvals	-	
ATEX	Ex II 3 G Ex ec IIC T4 Gc	
IECEX	Ex ec IIC T4 Gc	
UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D T4 Class I, Zone 2, IIC T4	

Ordering data		
Type	Order No.	Pcs./Pkt.
AXL P FBPS BASE	2316393	1

Ordering data	
Type	Order No.
AXL P FBPS 28DC/0.5A	2316394

Accessories		
Type	Order No.	Pcs./Pkt.
AXL P BS 35	2316396	1

Accessories		
Type	Order No.	Pcs./Pkt.
AXL P BS 35	2316396	1

AXL P BS 35	2316396	1
-------------	---------	---

AXL P BS 35	2316396	1
-------------	---------	---

AXL P BS 35	2316396	1
-------------	---------	---