

I/O module - AXL F AI4 I XC 1H - 2702007

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Axioline F XC, Analog input module, Analog inputs: 4, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection method: 2, 3, 4-wire, transmission speed in the local bus: 100 Mbps, integrated sensor supply, Extreme conditions version, degree of protection: IP20, including bus base module and Axioline F connectors

The figure shows the standard item

Product Description


The module is designed for use within an Axioline F station. It is used to acquire analog current signals. Thanks to special engineering measures and tests, the module can be used under extreme ambient conditions.

Your advantages

- 4 analog, bipolar input channels for the connection of current signals
- Connection of sensors in 2, 3, and 4-wire technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ±20 mA
- Simultaneous scanning of all channels by means of simultaneous sampling
- High crosstalk attenuation between the channels, thanks to separate signal paths
- Particularly robust against electromagnetic interference
- Device rating plate stored
- 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



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 900997
GTIN	4046356900997

Technical data

Note

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

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Technical data

Dimensions

Width	35 mm
Height	126.1 mm
Depth	54 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)
	-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	Axiline F connector
Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axiline 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
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

General

Mounting type	DIN rail
Net weight	145 g
Note on weight specifications	with connectors and bus base module

Interfaces

Designation	Axiline F local bus
No. of channels	2
Connection method	Bus base module
Transmission speed	100 Mbps

Axiline potentials

Designation	Axiline F local bus supply (U_{Bus})
Supply voltage	5 V DC (via bus base module)

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Technical data

Axioline potentials

Current consumption	typ. 120 mA
	max. 150 mA
Designation	Supply for analog modules (U_A)
Supply voltage	24 V DC (I/O supply and sensor supply)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	max. 45 mA ($I_{IS} = 0$ mA)
	typ. 118 mA ($I_{IS} = 4 \times 20$ mA (nominal load))
	max. 125 mA ($I_{IS} = 4 \times 20$ mA (nominal load))
	typ. 238 mA ($I_{IS} = 4 \times 50$ mA (full load))
	max. 245 mA ($I_{IS} = 4 \times 50$ mA (full load))
Power consumption	typ. 1.5 W (at U_{BUS} and U_A)
	max. 1.83 W (at U_{BUS} and U_A)
Type of protection	Surge protection of the supply voltage
	Polarity reversal protection of the supply voltage
	Transient protection supply voltage

Analog inputs

Description of the input	Differential inputs, current
Input name	Analog inputs
Number of inputs	4
Connection method	Push-in connection
Connection technology	2, 3, 4-wire
Note regarding the connection technology	shielded
A/D conversion time	31.25 μ s
Resolution A/D	16 bit
Limit frequency (3 dB)	30 Hz
	12 kHz
Type of protection	Transient protection of inputs
	Overload protection of the current inputs
Data formats	IB IL, S7-compatible
Measured value representation	16 bits (15 bits + sign bit)
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
	-20 mA ... 20 mA
Input resistance current input	104 Ω (typical)
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)

Electrical isolation

Test section	5 V communications power (logic), 24 V supply (I/O) 500 V AC 50 Hz 1 min.
	5 V supply (logic)/analog inputs 500 V AC 50 Hz 1 min.
	5 V supply (logic)/functional earth ground 500 V AC 50 Hz 1 min.

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Electrical isolation

	24 V supply (I/O)/analog inputs 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional earth ground 500 V AC 50 Hz 1 min.
	Analog inputs/functional earth ground 500 V AC 50 Hz 1 min.

Standards and Regulations

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
Protection class	III, IEC 61140, EN 61140, VDE 0140-1

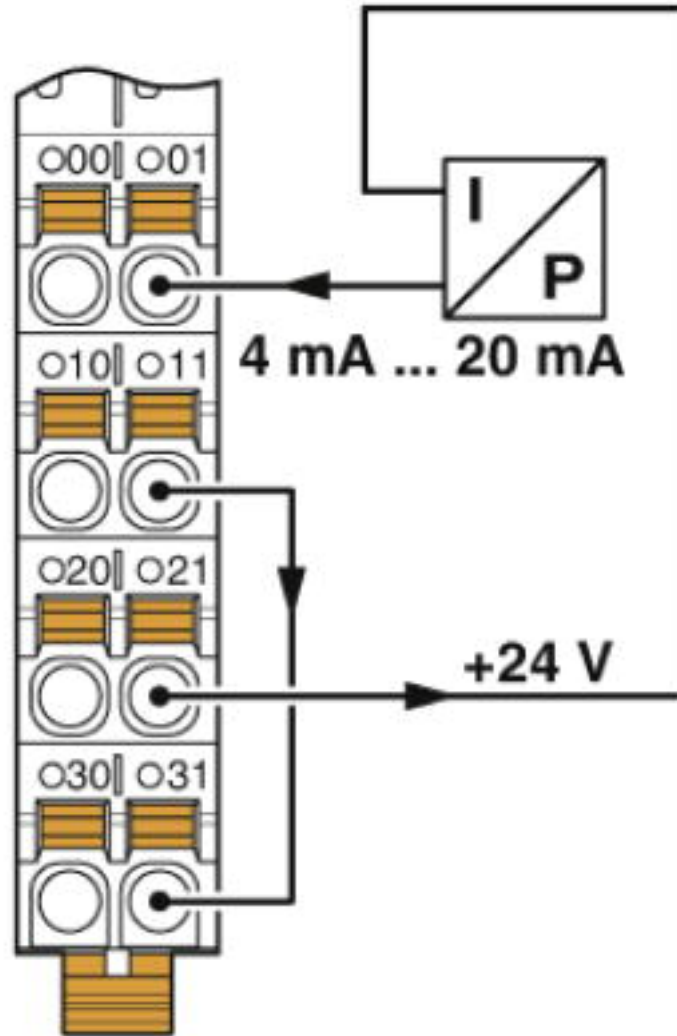
Environmental Product Compliance

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

Drawings

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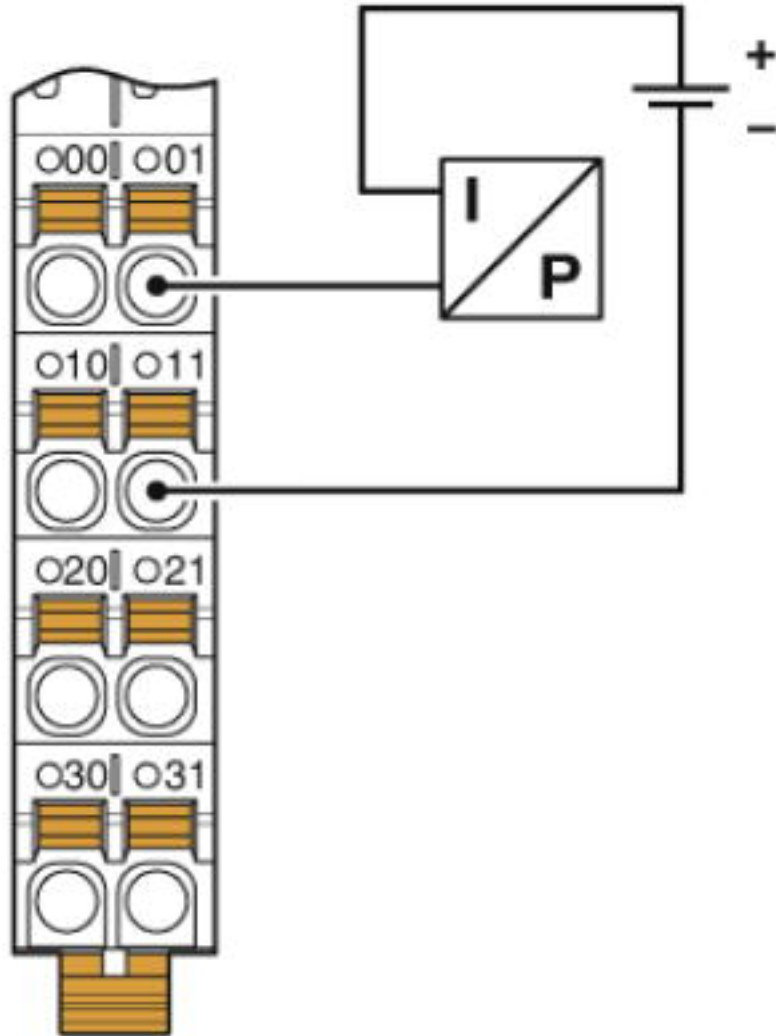
Connection diagram



Differential current input with passive 2-wire transmitter (current loop)

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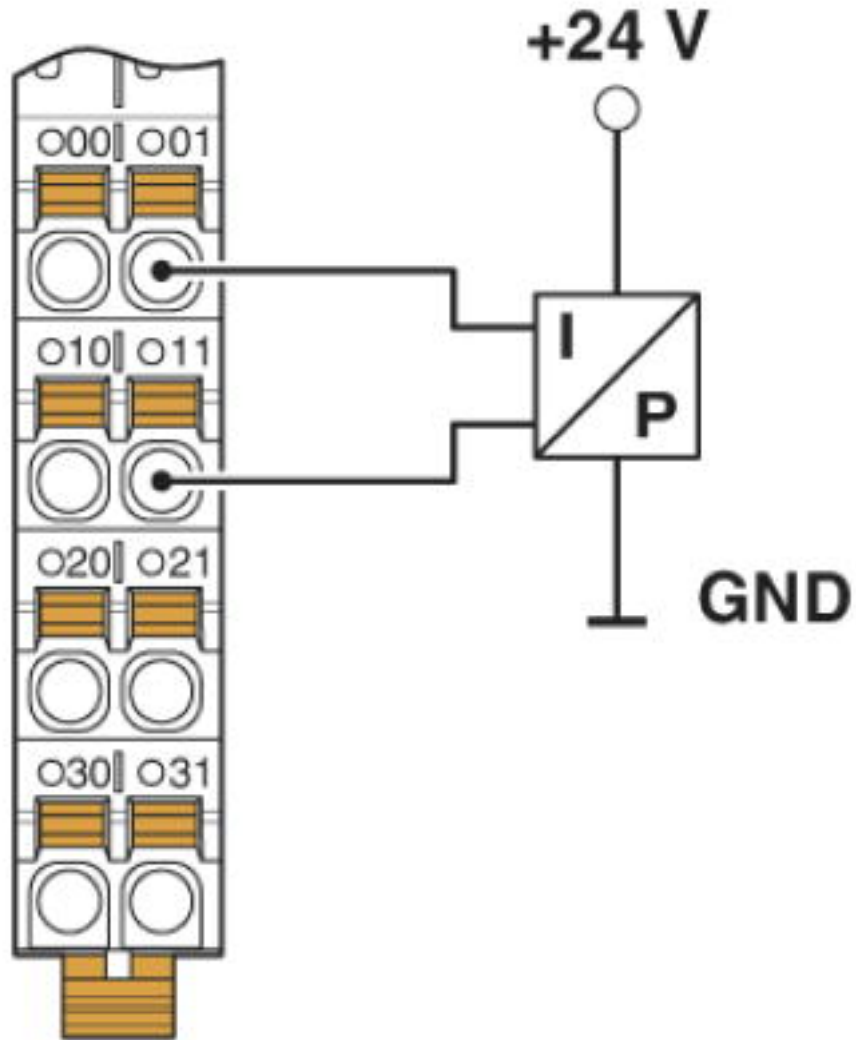
Connection diagram



Differential current input with passive 2-wire transmitter (current loop)

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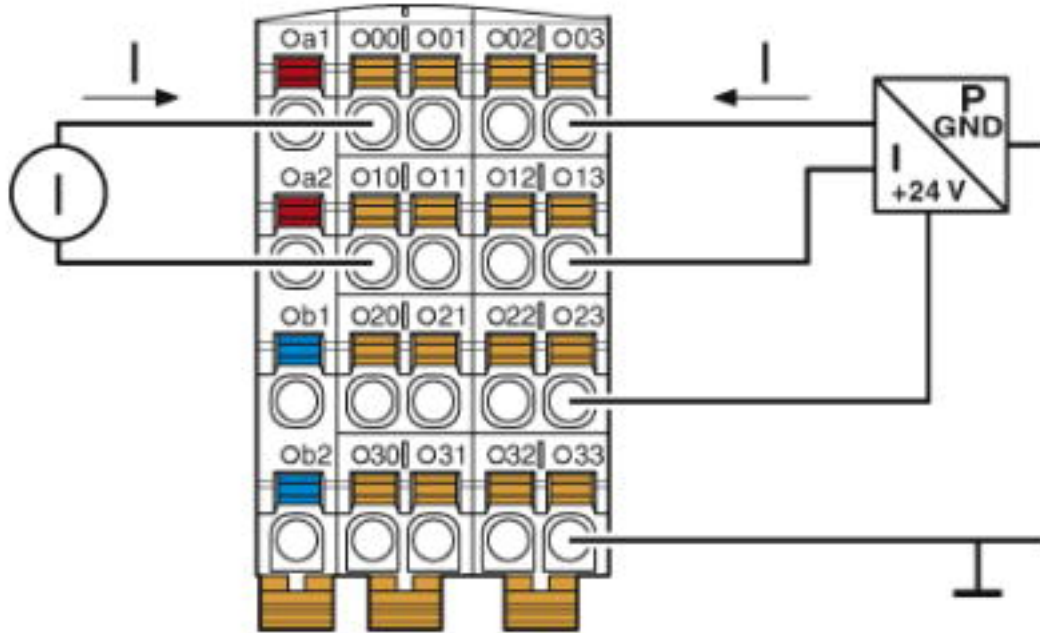
Connection diagram



Passive pressure sensor at a differential current input

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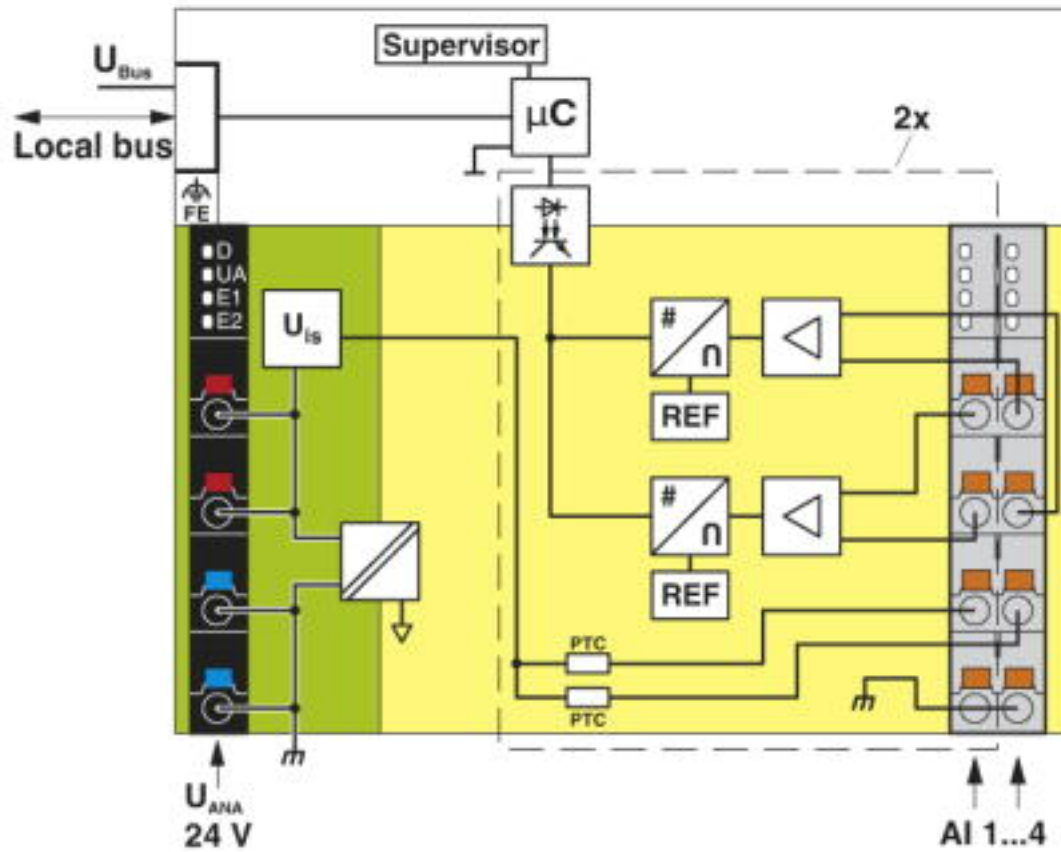
Connection diagram



Connection for current measurement

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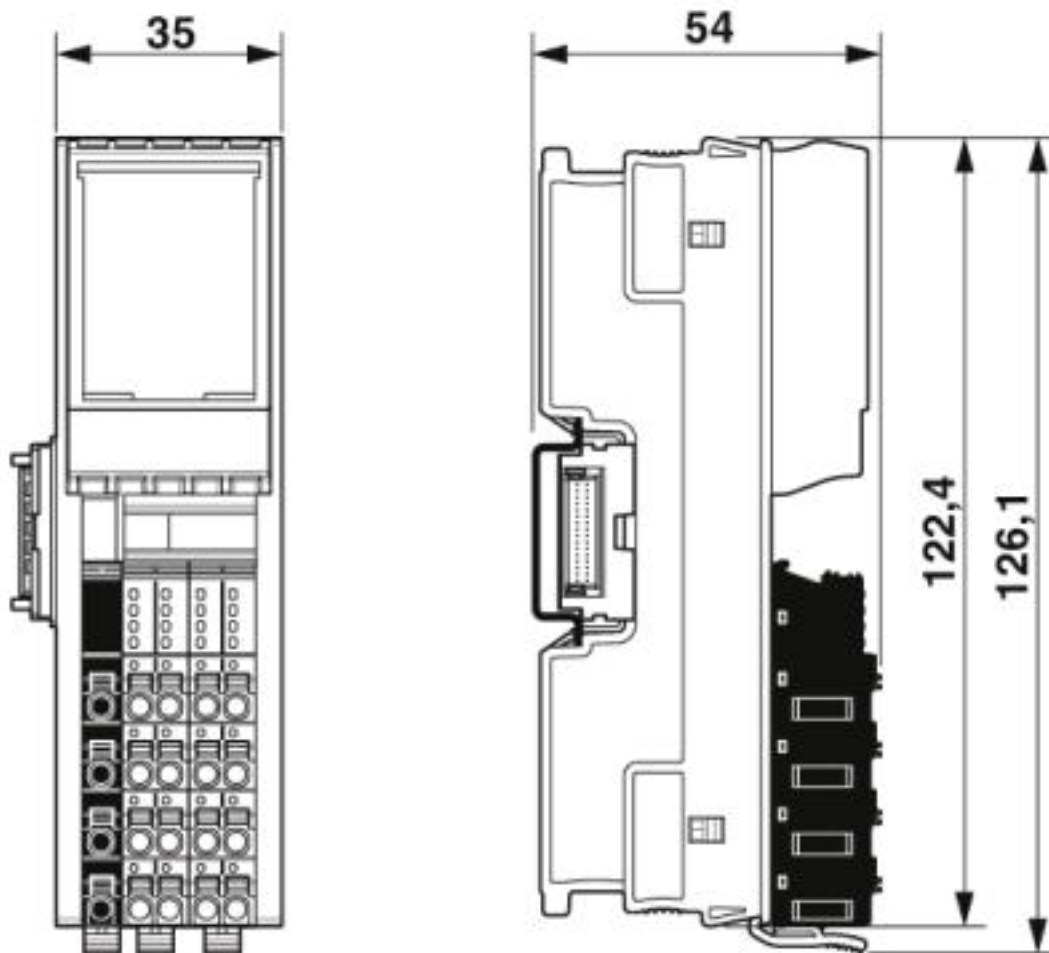
Block diagram



Internal wiring of the terminal points

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Dimensional drawing



Approvals

Approvals

Approvals

DNV GL / PRS / BV / LR / KR / NK / ABS / BSH / RINA / UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

DNV GL



<https://approvalfinder.dnvgl.com/>

TAA00000DF

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Approvals

PRS		http://www.prs.pl/	TE/2239/880590/19
BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	36433/B0 BV
LR		http://www.lr.org/en	14-20019
KR		http://www.krs.co.kr/eng/main/main.aspx	HMB17372-AC002
NK		http://www.classnk.or.jp/hp/en/	14A006
ABS		http://www.eagle.org/eagleExternalPortalWEB/	18-HG1767360-PDA
BSH		http://www.bsh.de/de/index.jsp	840
RINA		http://www.rina.org/en	ELE256518XG
UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
cULus Listed			

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