

I/O module - AXL F AI8 XC 1F - 2701232

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Axioline F analog input module, extreme conditions version, 8 inputs: 0 - 10 V, ± 10 V, 0 - 20 mA, 4 - 20 mA, ± 20 mA, 2-conductor connection technology (including bus base module and 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 voltage and current signals.

Why buy this product

- 8 analog, bipolar input channels for the connection of either voltage or current signals
- Connection of sensors in 2-wire technology
- Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA
- Device rating plate stored
- Diagnostic and status indicators
- Can be used under extreme ambient conditions
- Extended temperature range of -40°C ... $+70^{\circ}\text{C}$ (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Partially coated PCBs

Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 730495
GTIN	4046356730495
Weight per Piece (excluding packing)	260.000 g
Custom tariff number	85389091
Country of origin	Germany

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Technical data

Note

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

Width	53.6 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

General

Mounting type	DIN rail
Net weight	204 g
Note on weight specifications	with connectors and bus base module

Interfaces

Designation	Axioline F local bus
Connection method	Bus base module
Transmission speed	100 Mbps

Power supply for module electronics

Connection method	Push-in connection
Note on connection method	Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual.

Axioline potentials

Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	typ. 105 mA
	max. 130 mA
Supply for analog modules U_A	24 V DC

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Axioline potentials

Current consumption from U_A	typ. 35 mA
	max. 45 mA ($I_{IS} = 0$ mA)

Analog inputs

Description of the input	Differential inputs, voltage or current can be chosen separately
Input name	Analog inputs
Number of inputs	8
Connection method	Push-in connection
Connection technology	2-wire
Note regarding the connection technology	Shielded, twisted pair
A/D conversion time	2 μ s
Resolution A/D	16 bit
Limit frequency (3 dB)	30 Hz
	12 kHz (in fast mode)
Type of protection	Transient protection of inputs
Protective circuit/component	Suppressor diode
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)
Voltage input signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V
Input resistance of voltage input	268 k Ω (typical)
Common mode voltage range signal - ground	-50 V DC ... 50 V DC
Filtering	RFI filtering / passive TP 1st order
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)/functional earth ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / 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
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Technical data

Standards and Regulations

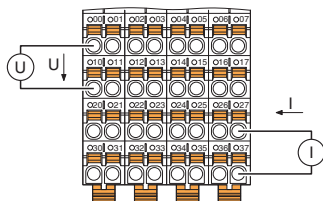
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
Protection class	III, IEC 61140, EN 61140, VDE 0140-1

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

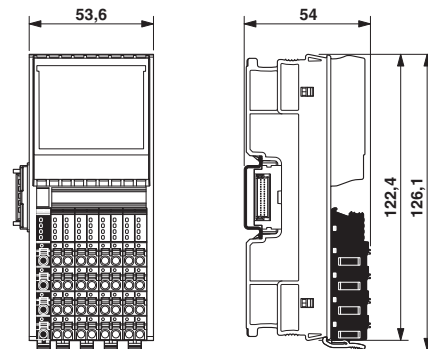
Drawings

Connection diagram

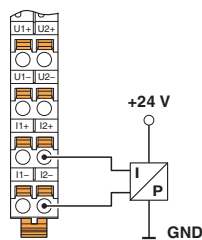


Connection for voltage and current measurement

Dimensional drawing

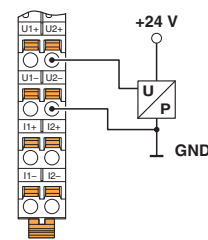


Connection diagram



Passive pressure sensor at a differential current input

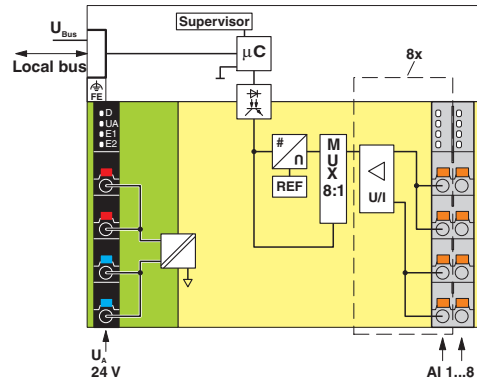
Connection diagram



Differential voltage input with active 3-wire transmitter

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Block diagram



Internal wiring of the terminal points

Classifications

eCl@ss

eCl@ss 4.0	27240405
eCl@ss 4.1	27240405
eCl@ss 5.0	27242201
eCl@ss 5.1	27242601
eCl@ss 6.0	27242601
eCl@ss 7.0	27242601
eCl@ss 8.0	27242601
eCl@ss 9.0	27242601

ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001435
ETIM 5.0	EC001596
ETIM 6.0	EC001596

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602

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Approvals

Approvals

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

Ex Approvals

Approval details

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
BSH		http://www.bsh.de/de/index.jsp	840
LR		http://www.lr.org/en	14-20019
NK		http://www.classnk.or.jp/hp/en/	TA16207M
BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	36433/A2 BV
DNV GL		http://exchange.dnv.com/tari/	TAA00000DF
PRS		http://www.prs.pl/	TE/2106/880590/16

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Approvals

cULus Listed



Accessories

Accessories

Connector set

Connector set - AXL CNS 4L-O/D/UA/E1/E2 - 2700984



Axioline F connector set (for e.g., AXL F AI8 1F, AXL F AO8 1F)

Device marking

Insert label - EMT (35X46)R - 0801604



Insert label, for the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, Mounting type: snapped into marker carrier, Lettering field: 35 x 46 mm

DIN rail connector

Bus connector - AXL F BS F - 2688129



Axioline F bus base module for housing type F

Mounting material

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Accessories

Shield connection - AXL SHIELD SET - 2700518



Axioline shield connection set (contains 2 busbar holders and 2 SK 5 shield connection clamps)

Terminal marking

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



Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

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



Zack marker strip, flat, in 10 mm pitch, unprinted, 10-section, for individual labeling with M-PEN 0,8, X-PEN, or CMS-P1-PLOTTER