

I/O module - AXL F AI8 1F - 2688064

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Axioline analog input module, 8 inputs: 0 - 10 V, ±10 V, 0 - 20 mA, 4 - 20 mA, ±20 mA, 2-wire connection method (including bus base module and connectors)

Product description

The module is designed for use within an Axioline 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



Key commercial data

Packing unit	1 pc
GTIN	4 046356 501460
Weight per Piece (excluding packing)	249.5 g
Custom tariff number	85389091
Country of origin	Germany

Technical data

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
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Technical data

Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	5 % ... 95 % (according to DIN EN 61131-2)
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

Weight	204 g
Note on weight specifications	with plugs and bus base module
Mounting type	DIN rail
Protection class	III, IEC 61140, EN 61140, VDE 0140-1
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
Conformance with EMC directives	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B; 6 kV contact discharge, 8 kV air discharge
	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A; Field intensity: 10 V/m
	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
	Noise immunity test in accordance with EN 61000-6-2 Transient surge voltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B; supply lines DC: ± 0.5 kV/ ± 0.5 kV (symmetrical/asymmetrical); ± 1 kV to shielded I/O cables
	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A; Test voltage 10 V
	Noise emission test according to EN 61000-6-3 Radio interference properties EN 55022 Class B
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5 g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 25 g, 11 ms period, half-sine shock pulse
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10 g

Interfaces

Name	Axioline F local bus
Connection method	Bus base module
Transmission speed	100 MBit/s

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 of analog modules U_A	24 V DC

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Axioline potentials

Current consumption from U _A	typ. 35 mA
	max. 45 mA

Analog inputs

Number of inputs	max. 8 (Differential inputs, voltage or current can be chosen separately)
Connection method	Push-in technology
	2-wire (shielded, twisted pair)
Input name	Analog inputs
A/D conversion time	2 µs
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
Voltage input signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V
Precision	0.1 % (of measuring range final value for active mean-value generation and 30 Hz filter)
Filtering	RFI filtering / passive TP 1st order
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)
Number of inputs	8 (differential inputs, voltage)
Type of protection	Overload protection
Protective circuit/component	±30 V DC, maximum
Open circuit response	Goes to 0 V
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 kΩ (typical)
Common mode voltage range signal - ground	-50 V DC ... 50 V DC
Number of inputs	8 (differential inputs, current)
Type of protection	Overload protection
Protective circuit/component	No; ±5.2 V DC, maximum, I _{max} = 50 mA
Open circuit response	Going to 0 mA; open-circuit detection from 4 mA ... 20 mA

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Technical data

Analog inputs

Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
	-20 mA ... 20 mA
Input resistance current input	104 Ω (typical)

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

ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001596
ETIM 5.0	EC001596

UNSPSC

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

Approvals

Approvals

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UL Listed / cUL Listed / BSH / RINA / DNV / cULus Listed

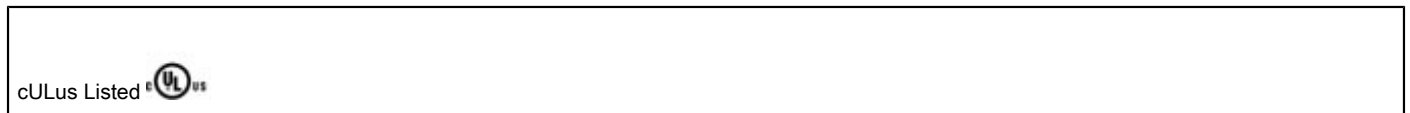
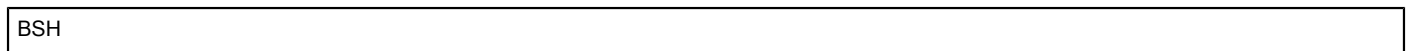
Ex Approvals

Approvals submitted

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Approvals

Approval details



Accessories

Accessories

Connector set

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



Axoline F plug set (for e.g., AXL F AI8 1F, AXL F AO8 1F)

Device marking

Insert label - EMT (35X46)R - 0801604



Insert label, Roll, white, Unlabeled, Can be labeled with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1, Mounting type: snapped into marker carrier, Lettering field: 35 x 46 mm

DIN rail connector

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Accessories

Bus connector - AXL F BS F - 2688129



AxioLine F bus base module for housing type F

Mounting material

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

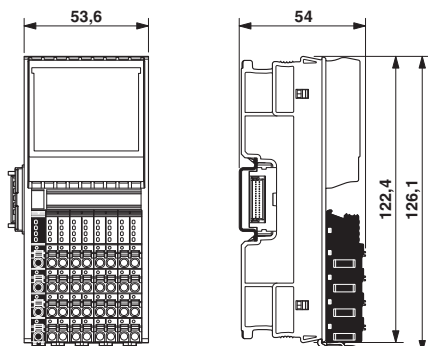


Zack marker strip, flat, in 10 mm pitch, unprinted, 10-section, for individual labeling with M-PEN 0,8, X-PEN, or CMS-P1-PLOTTER

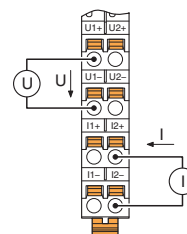
Drawings

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Dimensioned drawing

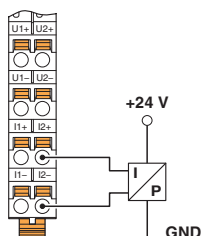


Connection diagram



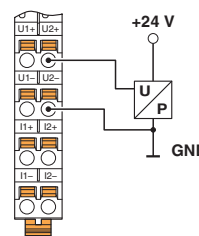
Connection for voltage and current measurement

Connection diagram



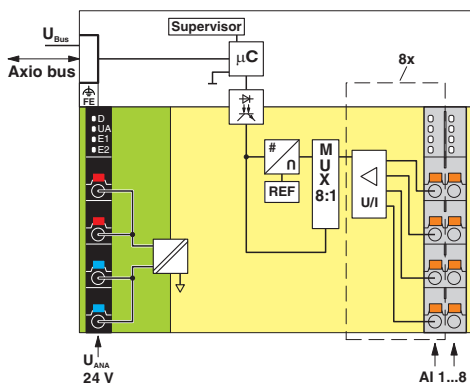
Passive pressure sensor at a differential current input

Connection diagram



Differential voltage input with active 3-wire transmitter

Block diagram



Internal wiring of the terminal points