

I/O module - AXL F RTD8 1F - 2688077

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Axioline F temperature module, 8 inputs for connecting temperature shunts (including bus base module and connectors)

Product description

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

It is used to acquire signals from resistive temperature sensors.


The module supports all common platinum and nickel sensors according to DIN EN 60751 and SAMA. Cu10, Cu50, Cu53 sensors as well as various KTY8x sensor types are also supported.

Why buy this product

- 8 analog input channels for the connection of resistance temperature detectors (RTD)
- 500 Ω and 5 k Ω linear inputs
- Connection of sensors in 2, 3, and 4-wire technology
- Integrated, digital sensor linearization
- Standardized measured value representation directly in $^{\circ}\text{C}$, $^{\circ}\text{F}$ or Ω
- Measured value display in 16-bit format or floating point format
- Programmable filters
- Short-circuit protected inputs
- Device rating plate stored
- Diagnostic and status indicators
- Temperature stability
- Very high level of noise immunity
- Low noise emission
- Installation monitoring by means of "Channel scout" function



Key commercial data

Packing unit	1 pc
GTIN	 4 046356 501453
Weight per Piece (excluding packing)	241.3 g
Custom tariff number	85389091
Country of origin	Germany

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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
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

Weight	215 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 30 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
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Technical data

Interfaces

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. 115 mA
	max. 180 mA
Supply of analog modules U_A	24 V DC
Current consumption from U_A	typ. 15 mA
	max. 25 mA

Analog inputs

Number of inputs	8 (for resistance temperature detectors)
Input name	Analog inputs
Description of the input	Inputs for resistive temperature sensors
Connection method	Spring-cage connection with direct plug-in method
	2, 3, 4-wire (shielded)
Sensor types (RTD) that can be used	Pt, Ni, KTY, Cu sensors
Linear resistance measuring range	0 Ω ... 500 Ω
	0 k Ω ... 5 k Ω
Nominal value of the current sources	1 mA (Pt100, Ni100, R_{Lin} 500 Ω ; pulse current, the specification is valid during the sampling phase)
Measured value representation	16 bits (15 bits + sign bit)
Resolution A/D	24 bit
Protective circuit	Short-circuit protection, overload protection of the inputs
Data formats	IB IL, S7-compatible
Precision	(See Tables under tolerance values)
Input filter time	40 ms

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
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Classifications

ETIM

ETIM 4.0	EC001599
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

Approvals

BSH / GL / DNV / RINA / BV

Ex Approvals

Approvals submitted

Approval details

BSH

GL

DNV

RINA

BV

Accessories

Accessories

Connector set

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Accessories

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



Axioline 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

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

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Accessories

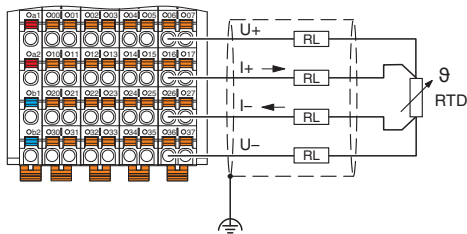
Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580



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

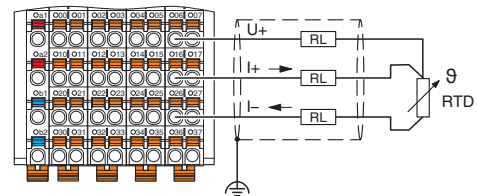
Drawings

Connection diagram



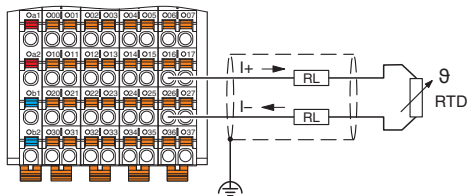
Connection example: 4-wire termination

Connection diagram



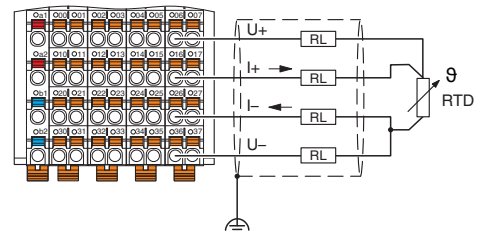
Connection example: 3-wire termination

Connection diagram



Connection example: 2-wire termination

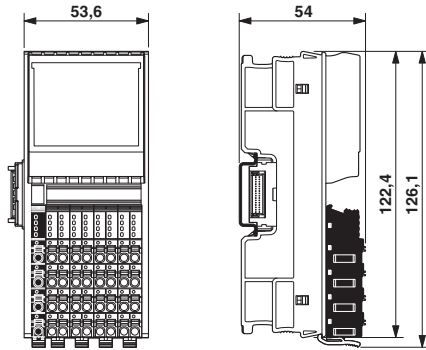
Connection diagram



Connection example: 4-wire termination for 3-wire sensor with very long supply lines (> 100 m)

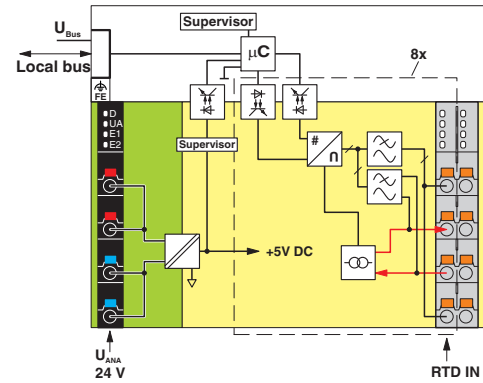
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Dimensioned drawing



Dimensional drawing

Block diagram



Internal wiring of the terminal points