

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.

Product Features

- 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
Weight per Piece (excluding packing)	240.0 g
Custom tariff number	85389091
Country of origin	Germany

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

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

Connection data

Designation	Axioline F connector
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.
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	241.3 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 MBit/s

Axioline potentials

Communications power U_{Bus}	5 V DC (via bus base module)
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I/O module - AXL F RTD8 1F - 2688077

Technical data

Axioline potentials

Current consumption from U_{BUS}	typ. 115 mA
	max. 180 mA
Supply for 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	Push-in connection
	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 (Pt 100, Ni 100, 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
Input filter time	40 ms

Standards and Regulations

Conformity 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 overvoltage (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
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.

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

Technical data

Standards and Regulations

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

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	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

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BSH / RINA / BV / LR / UL Listed / cUL Listed / ABS / NK / EAC / cULus Listed

Ex Approvals

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

Approvals

Approvals submitted

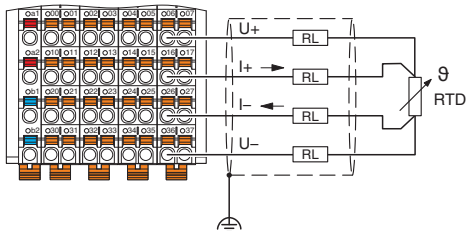
Approval details

BSH
RINA
BV
LR
UL Listed 
cUL Listed 
ABS
NK
EAC
cULus Listed 

Drawings

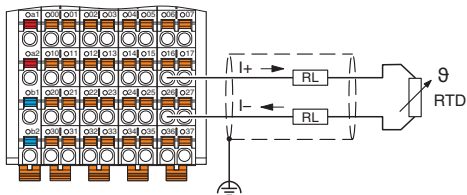
I/O module - AXL F RTD8 1F - 2688077

Connection diagram



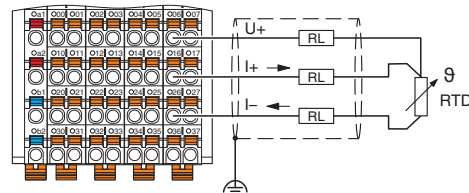
Connection example: 4-wire connection

Connection diagram



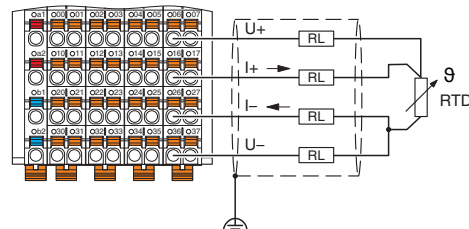
Connection example: 2-wire connection

Connection diagram



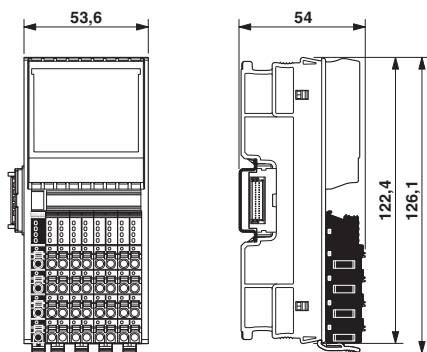
Connection example: 3-wire connection

Connection diagram



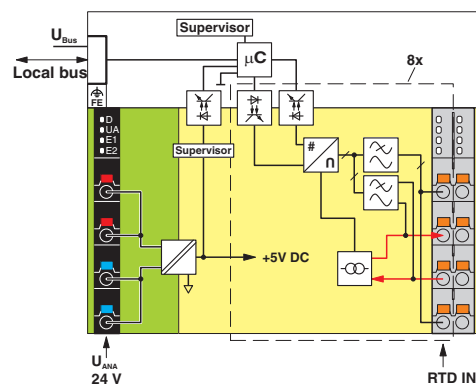
Connection example: 4-wire connection for 3-wire sensor with very long supply lines (> 100 m)

Dimensional drawing



Dimensional drawing

Block diagram



Internal wiring of the terminal points