

I/O module - AXL F RTD8 S 1F - 2702120

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Axioline F temperature module, 8 inputs for connecting temperature shunts, measuring dynamics up to > 8 Hz (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.

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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.

Cu10, Cu50, and Cu53 sensors are also supported.

Why buy this product

- ✓ 8 analog input channels for the connection of resistance temperature detectors (RTD)
- ✓ Linear inputs 500 Ω
- ✓ Connection of sensors with 2- 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
- ✓ 8 Hz measuring dynamics per channel
- ✓ 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 STK |
|--------------|-------|

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| | |
|--------------------------------------|---|
| GTIN |  4 046356 977852 |
| GTIN | 4046356977852 |
| Weight per Piece (excluding packing) | 260.000 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 |
| 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 |

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Technical data

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. 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 |
| Connection technology | 2, 4-wire (shielded) |
| Sensor types (RTD) that can be used | Pt, Ni, Cu sensors |
| Linear resistance measuring range | 0 Ω ... 500 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 | 8 ms |

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

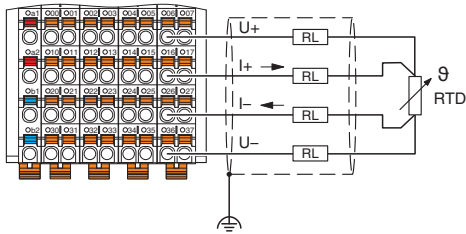
| | |
|------------------|--|
| | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g |
| | Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g |
| Protection class | III, IEC 61140, EN 61140, VDE 0140-1 |

Environmental Product Compliance

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

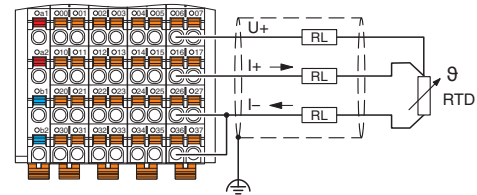
Drawings

Connection diagram



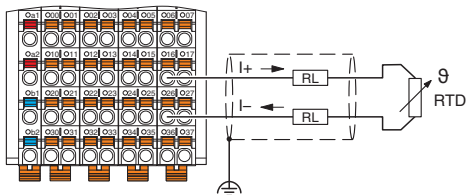
Connection example: 4-wire connection

Connection diagram



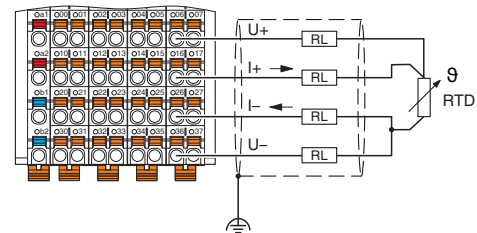
Connection example: 3-wire connection with external bridge

Connection diagram



Connection example: 2-wire connection

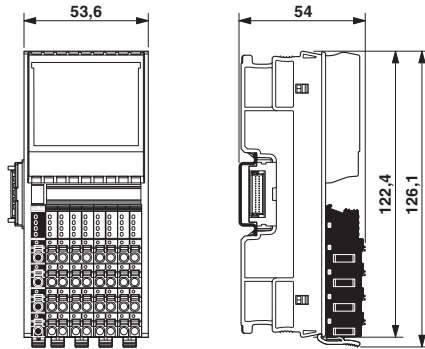
Connection diagram



Connection example: 4-wire connection for 3-wire sensor with long supply lines

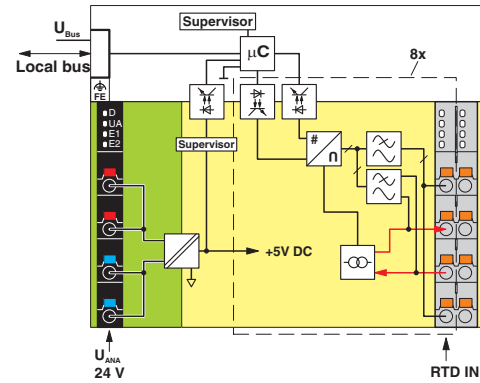
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Dimensional drawing



Dimensional drawing

Block diagram



Internal wiring of the terminal points

Approvals

Approvals

Approvals

UL Listed / cUL Listed / 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 |
| cULus Listed | | | |

