

## 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.


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### Why buy this product

- ✓ 8 analog input channels for the connection of resistance temperature detectors (RTD)
- ✓ 500 Ω and 5 kΩ linear inputs
- ✓ Connection of sensors in 2, 3, and 4-wire technology
- ✓ Integrated, digital sensor linearization
- ✓ Standardized measured value representation directly in °C, °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 STK
GTIN	 4 046356 501453
GTIN	4046356501453
Weight per Piece (excluding packing)	241.300 g
Weight per piece (including packing)	265.000 g

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

Custom tariff number	85389091
Country of origin	Germany
Sales Key	O1 - Automatation Systems

### 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 <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
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 Mbps

#### Axioline potentials

Communications power $U_{Bus}$	5 V DC (via bus base module)
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## 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
Connection technology	2, 3, 4-wire (shielded)
Sensor types (RTD) that can be used	Pt, Ni, KTY, Cu sensors
Linear resistance measuring range	0 $\Omega$ ... 500 $\Omega$ 0 k $\Omega$ ... 5 k $\Omega$
Nominal value of the current sources	1 mA (Pt 100, Ni 100, $R_{Lin}$ 500 $\Omega$ ; 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

### 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
	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

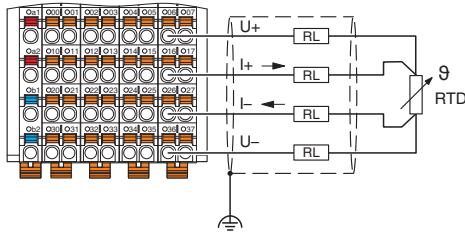
### Environmental Product Compliance

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

## Drawings

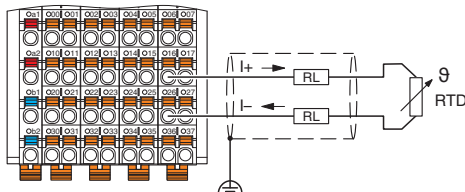
# I/O module - AXL F RTD8 1F - 2688077

Connection diagram



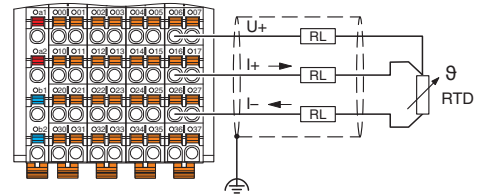
Connection example: 4-wire connection

Connection diagram



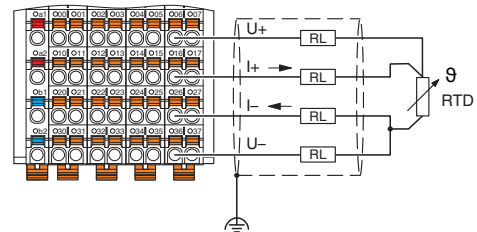
Connection example: 2-wire connection

Connection diagram



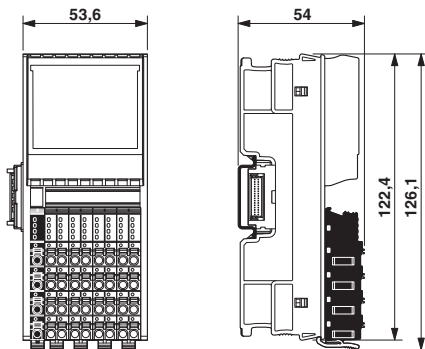
Connection example: 3-wire connection

Connection diagram



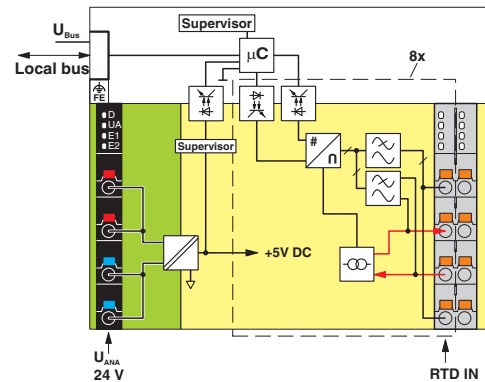
Connection example: 4-wire connection for 3-wire sensor with very long supply lines (> 100 m)

Dimensional drawing



Dimensional drawing

Block diagram



Internal wiring of the terminal points

## Classifications

eCl@ss

eCl@ss 4.0	27240405
eCl@ss 4.1	27240405
eCl@ss 5.0	27242201
eCl@ss 5.1	27242601

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## Classifications

### eCl@ss

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	EC001599
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

## Approvals




### Approvals

#### Approvals

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

#### Ex Approvals

### Approval details

BSH		<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
BV		<a href="http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials">http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials</a>	36433/A2 BV
LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	14-20019

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## Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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ABS		<a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>	16-HG1549537-PDA
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NK		<a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>	TA16207M
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EAC			EAC-Zulassung
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DNV GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAA00000DF
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PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/2106/880590/16
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RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE078216XG-001
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cULus Listed			
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## 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)

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## Accessories

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### 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

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### DIN rail connector

Bus connector - AXL F BS F - 2688129



Axioline F bus base module for housing type F

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### Mounting material

Shield connection - AXL SHIELD SET - 2700518



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

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### 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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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

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### Accessories

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