I/O module - AXL F RTD4 1H - 2688556

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Axioline F, Temperature recording module, Analog inputs: 4 (for resistance temperature detectors), connection method: 2-, 3-, 4-conductor (shielded), transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F 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 sensors in accordance with DIN EN 60751 and SAMA, as well as nickel sensors in accordance with DIN 43760.
Cu10, Cu50, Cu53 sensors as well as various KTY8x sensor types are also supported.

Your advantages

- 4 analog input channels for connecting resistance temperature detectors (RTDs)
- 500 Ω and 5 kΩ linear inputs
- Connection of sensors in 2-, 3-, and 4-conductor 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
- Temperature stability
- Very high level of noise immunity
- Low noise emission
- Installation monitoring by means of “Channel scout” function

RoHS COMPLETE line

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 744201

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GTIN	4046356744201
Weight per Piece (excluding packing)	200.000 g
Custom tariff number	85389091
Country of origin	Germany

Technical data

Dimensions

Caption	Dimensional drawing
Width	35 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 the 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 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	1.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

General

Mounting type	DIN rail
Color	traffic grey A RAL 7042
Net weight	144 g
Note on weight specifications	with connectors and bus base module
Degree of pollution	2 (IEC 60664-1, EN 60664-1)

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Technical data

General

Mounting position	any (no temperature derating)

Interfaces

Designation	Axioline F local bus
Number	2
Connection method	Bus base module
Transmission speed	100 Mbps

Axioline potentials

Designation	Axioline F local bus supply (U_{Bus})
Supply voltage	5 V DC (via bus base module)
Current consumption	max. 140 mA
Power consumption	max. 700 mW
Designation	Supply for analog modules (U_A)
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	max. 17 mA
Power consumption	max. 400 mW
Protective circuit	Surge protection electronic (35 V, 0.5 s)
	Reverse polarity protection Polarity protection diode
	Transient protection Suppressor diode
Power consumption	max. 1.1 W (at U_{Bus} and U_A)

Analog inputs

Number of inputs	4 (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-conductor (shielded)
Sensor types (RTD) that can be used	Pt, Ni, KTY, Cu sensors
Linear resistance measuring range	0 Ω ... 500 Ω
	0 kΩ ... 5 kΩ
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)
A/D converter resolution	24 bit
Type of protection	Short-circuit protection, overload protection of the inputs
	Transient protection of inputs
	Transient protection of sensor supplies

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Analog inputs

Data formats	IB IL, S7-compatible
Input filter time	40 ms

Electrical isolation

Test section	5 V supply of the local bus (U_{Bus}) / 24 V supply (I/Os) 500 V AC 50 Hz 1 min.
	5 V supply of the local bus (U_{Bus}) / functional ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional ground 500 V AC 50 Hz 1 min.

Standards and Regulations

Immunity to ESD	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
Immunity to EF	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
Immunity to burst	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
Immunity to surge	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
Immunity to conducted interference	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
Interference emission	Noise emission test according to EN 61000-6-3 Class B
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)
Overvoltage category	II (IEC 60664-1, EN 60664-1)

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

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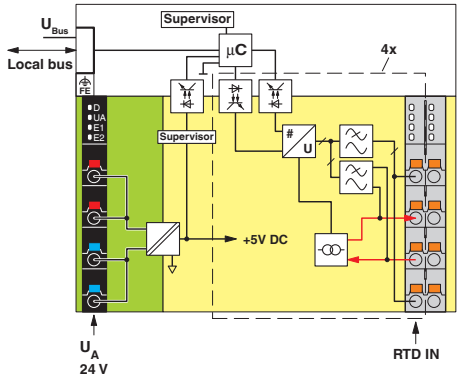
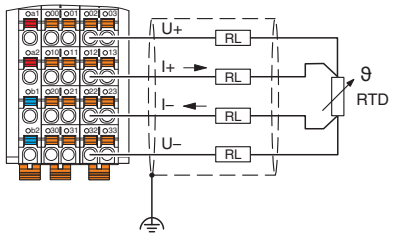
Block diagram



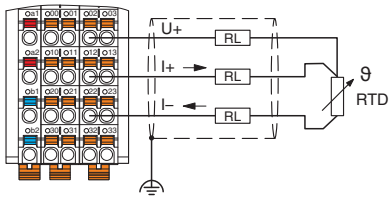
Internal wiring of the terminal points

Connection diagram



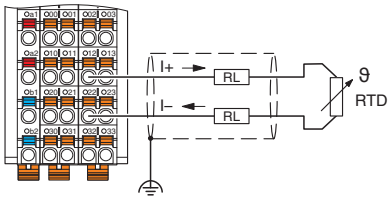
Connection example: 4-conductor connection

Connection diagram



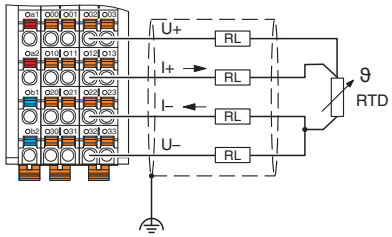
Connection example: 3-conductor connection

Connection diagram



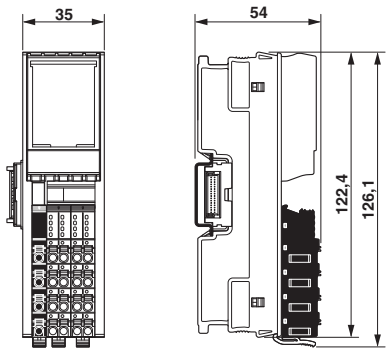
Connection example: 2-conductor connection

Connection diagram



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

Dimensional drawing



Dimensional drawing

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Classifications

eCl@ss

eCl@ss 10.0.1	27242601
eCl@ss 11.0	27242601
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	27242200
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242601
eCl@ss 9.0	27242601

ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 6.0	EC001596
ETIM 7.0	EC001596

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals

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

Ex Approvals

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Approvals

Approval details

KR	http://www.krs.co.kr/eng/main/main.aspx	HMB17372-AC002
NK	http://www.classnk.or.jp/hp/en/	14A006
ABS	http://www.eagle.org/eagleExternalPortalWEB/	18-HG1767360-PDA
BSH		840
RINA	http://www.rina.org/en	ELE030120XG
LR	http://www.lr.org/en	LR2001902TA
PRS	http://www.prs.pl/	TE/1117/880590/20
BV	http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	36433/B2 BV
DNV GL	https://approvalfinder.dnvgl.com/	TAA00000DF
UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

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Approvals

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

cULus Listed	

Accessories

Accessories

Device marking

Insert label - EMT (35X28)R - 0801602

Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 28 mm, Number of individual labels: 500

DIN rail connector

Bus connector - AXL F BS H - 2700992

Axioline F bus base module for housing type H

Shield connection

Shield connection - AXL SHIELD SET - 2700518

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

Terminal marking

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Accessories

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, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 10.15 mm, lettering field size: 4 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50

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