

I/O module - AXL F AI4 U 1H - 2688501

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Axioline F, Analog input module, Analog inputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, connection method: 2, 3, 4-wire, transmission speed in the local bus: 100 Mbps, integrated sensor supply, 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 analog voltage signals.

Your advantages

- ✓ 4 analog, bipolar input channels for the connection of voltage signals
- ✓ Connection of sensors in 2, 3, and 4-wire technology
- ✓ Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- ✓ Simultaneous scanning of all channels by means of simultaneous sampling
- ✓ High crosstalk attenuation between the channels, thanks to separate signal paths
- ✓ Particularly robust against electromagnetic interference
- ✓ Device rating plate stored



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 744232 |
| GTIN | 4046356744232 |
| Weight per Piece (excluding packing) | 200.000 g |
| Custom tariff number | 85389091 |
| Country of origin | Germany |

Technical data

Dimensions

I/O module - AXL F AI4 U 1H - 2688501

Technical data

Dimensions

| | |
|--------------------|---|
| 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 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 | 191 g |
| Note on weight specifications | with connectors and bus base module |

Interfaces

| | |
|--------------------|----------------------|
| Designation | Axioline F local bus |
| No. of channels | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

Axioline potentials

| | |
|-------------|---|
| Designation | Axioline F local bus supply (U _{Bus}) |
|-------------|---|

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Technical data

Axioline potentials

| | |
|----------------------|--|
| Supply voltage | 5 V DC (via bus base module) |
| Current consumption | typ. 120 mA |
| | max. 150 mA |
| Power consumption | typ. 0.6 W |
| | max. 0.75 W |
| Designation | Supply for analog modules (U _A) |
| Supply voltage | 24 V DC (I/O supply and sensor supply) |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current consumption | max. 45 mA (I _{IS} = 0 mA) |
| | typ. 118 mA (I _{IS} = 4 x 20 mA (nominal load)) |
| | max. 125 mA (I _{IS} = 4 x 20 mA (nominal load)) |
| | typ. 238 mA (I _{IS} = 4 x 50 mA (full load)) |
| | max. 245 mA (I _{IS} = 4 x 50 mA (full load)) |
| Power consumption | typ. 1.5 W (at U _{Bus} and U _A) |
| | max. 1.83 W (at U _{Bus} and U _A) |
| Type of protection | Surge protection of the supply voltage |
| | Polarity reversal protection of the supply voltage |
| | Transient protection supply voltage |

Analog inputs

| | |
|--|---|
| Description of the input | Differential inputs, voltage |
| Input name | Analog inputs |
| Number of inputs | 4 |
| Connection method | Push-in connection |
| Connection technology | 2, 3, 4-wire |
| Note regarding the connection technology | shielded, twisted pair |
| A/D conversion time | 31.25 µs |
| Resolution A/D | 16 bit |
| Limit frequency (3 dB) | 30 Hz |
| | 12 kHz |
| Type of protection | Transient protection of inputs |
| | Overload protection of the voltage inputs |
| Data formats | IB IL, S7-compatible |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Voltage input signal | 0 V ... 5 V |
| | -5 V ... 5 V |
| | 0 V ... 10 V |

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Technical data

Analog inputs

| | |
|---|--|
| | -10 V ... 10 V |
| Input resistance of voltage input | 268 kΩ (typical) |
| Common mode voltage range signal - ground | -50 V DC ... 50 V DC |
| Input filter | 30 Hz, 12 kHz and mean-value generation (can be parameterized) |

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

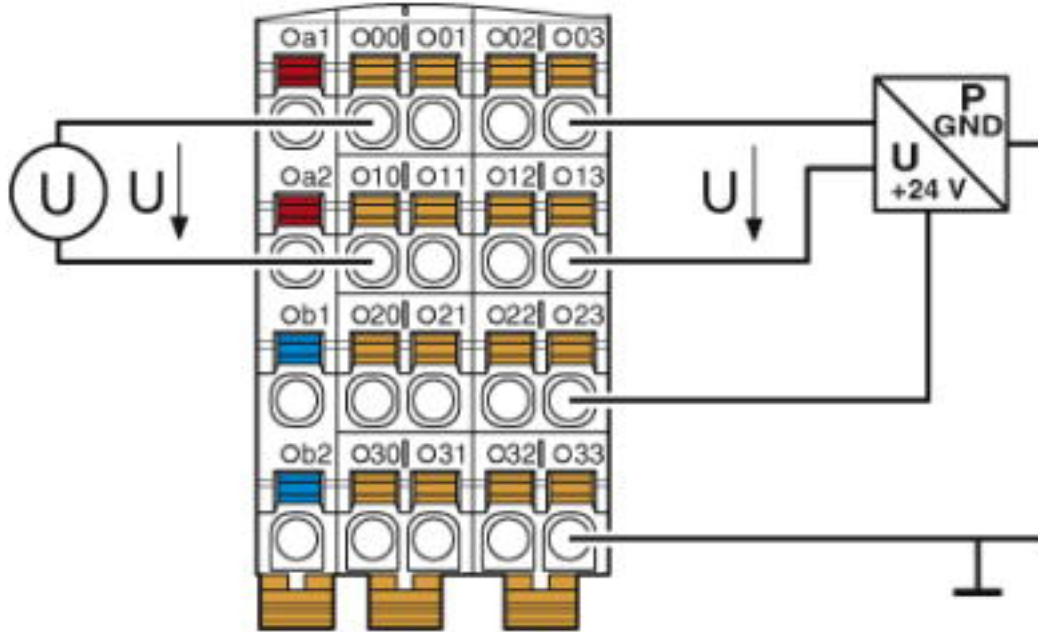
Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

Drawings

I/O module - AXL F AI4 U 1H - 2688501

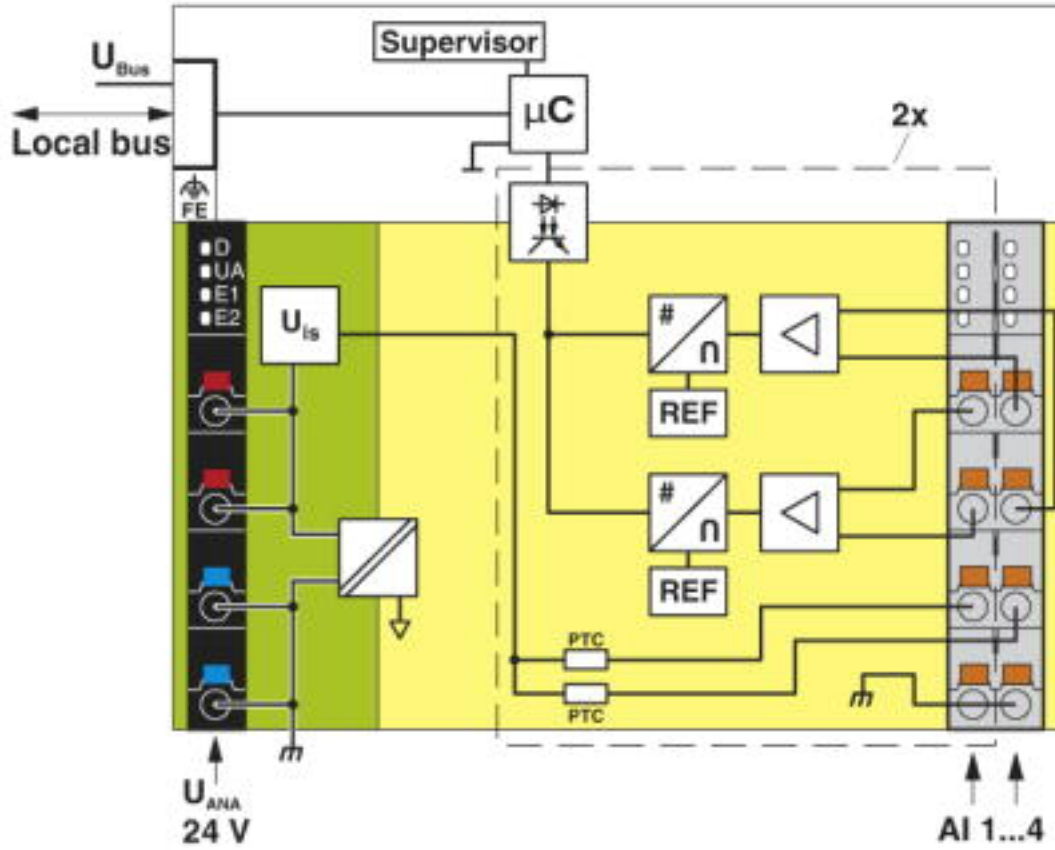
Connection diagram



Connector for voltage measurement

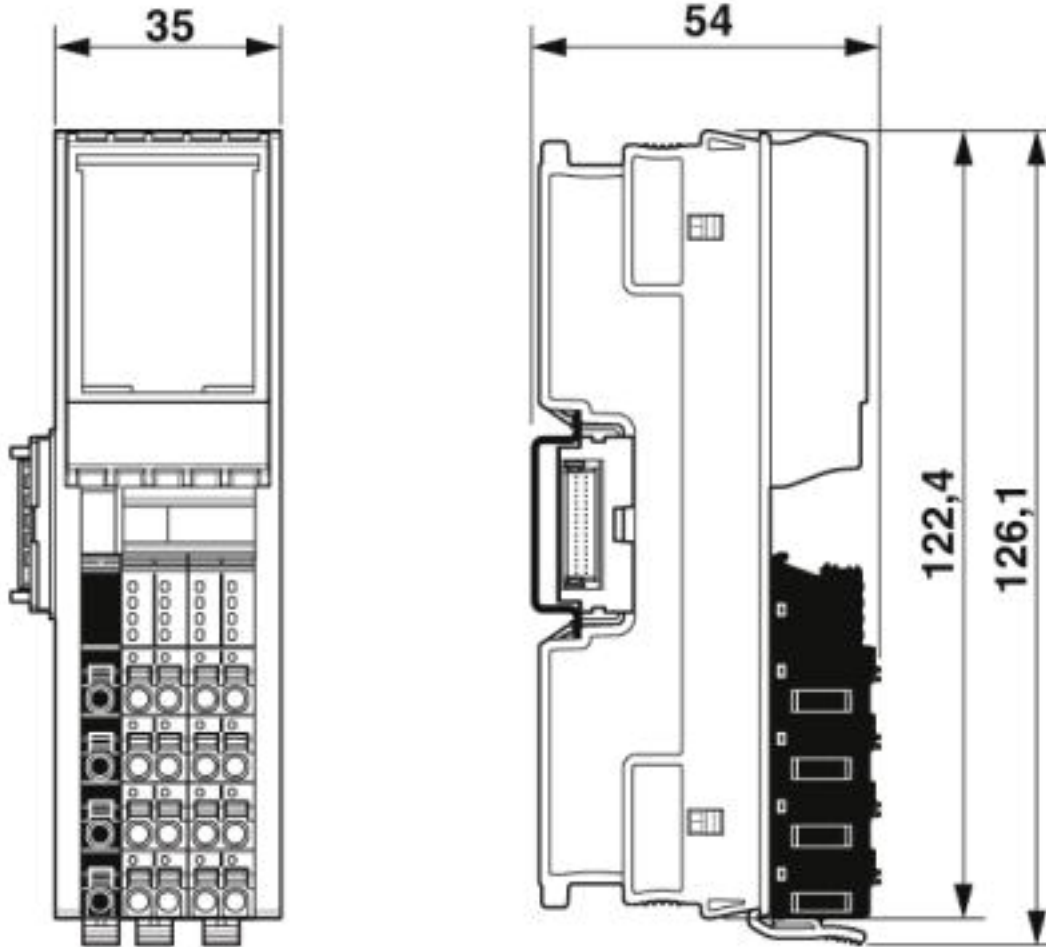
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Block diagram



I/O module - AXL F AI4 U 1H - 2688501

Dimensional drawing



Classifications

eCl@ss

| | |
|------------|----------|
| 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 8.0 | 27242601 |
| eCl@ss 9.0 | 27242601 |

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Classifications

ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001599 |
| ETIM 4.0 | EC001599 |
| ETIM 5.0 | EC001596 |
| 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 |

Approvals

Approvals


Approvals

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

Ex Approvals

Approval details







| | | | |
|--------|---|---|------------|
| DNV GL |  | https://approvalfinder.dnvgl.com/ | TAA00000DF |
|--------|---|---|------------|

| | | | |
|-----|---|---|-------------------|
| PRS |  | http://www.prs.pl/ | TE/2239/880590/19 |
|-----|---|---|-------------------|

| | | | |
|----|---|---|-------------|
| BV |  | http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials | 36433/B0 BV |
|----|---|---|-------------|

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Approvals

| | | | |
|--------------|---|---|------------------|
| LR |  | http://www.lr.org/en | 14-20019 |
| KR |  | http://www.krs.co.kr/eng/main/main.aspx | HMB17372-AC002 |
| ABS | | http://www.eagle.org/eagleExternalPortalWEB/ | 18-HG1767360-PDA |
| BSH | | http://www.bsh.de/de/index.jsp | 840 |
| RINA |  | http://www.rina.org/en | ELE256518XG |
| 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 |  | | |

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

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Accessories

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

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