

AXL F SSI1 AO1 1H - Function module



2688433

<https://www.phoenixcontact.com/us/products/2688433>

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Axioline F function module, 1 SSI interface for absolute encoder, 1 analog output: 0 - 10 V, ± 10 V, 0 - 5 V, ± 5 V, 0 - 20 mA, 4 - 20 mA, ± 20 mA, 2-conductor connection technology (including bus base module and connectors)

Product description

The module is designed for use within an Axioline F station. It is used to acquire data from absolute encoders with SSI interface with a maximum resolution of up to 56 bits. The module supports encoders with gray and binary code. Transmission speeds of up to 2 MHz are supported. In addition, the module has an analog output which allows for specifying setpoints, e.g., for electrical and hydraulic drives.

Your advantages

- Permanent surge protection against 24 V DC for all interfaces
- Permanent short-circuit protection for all interfaces
- 1 SSI interface
- Monitoring of the 24 V encoder supply
- Supports transmission speeds from 62.5 kHz to 2 MHz for SSI
- 8 bit ... 56 bit resolution
- Supports Gray and binary code
- 1 analog, bipolar output channel for the connection of either voltage or current signals
- Connection of actuators in 2-conductor technology
- Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA
- Device rating plate stored

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2688433 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI261 |
| GTIN | 4046356644952 |
| Weight per piece (including packing) | 182.2 g |
| Weight per piece (excluding packing) | 135 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

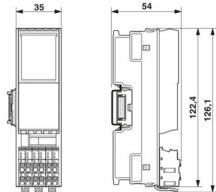
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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 35 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Note on dimensions | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Material specifications

| | |
|-----------------|-----------------|
| Color (Housing) | gray (RAL 7042) |
|-----------------|-----------------|

Interfaces

Axioline F local bus

| | |
|----------------------|-----------------|
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

Programming data (LocalbusSlave)

| | |
|---------------------|---------|
| Input address area | 12 Byte |
| Output address area | 12 Byte |

Fieldbus data telegram (PROFIBUS)

| | |
|-----------------------------|---------|
| Required parameter data | 29 Byte |
| Required configuration data | 7 Byte |

Input data

Encoder

| | |
|--------------------------|---|
| Number of inputs | 1 |
| Input name | SSI interface |
| Description of the input | RS-422 interface in accordance with SSI specification |

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| | |
|------------------------|--|
| Encoder signals | Single-turn and multi-turn encoder, length measuring sticks |
| Input frequency | to 2 MHz (Can be parameterized: 62.5 kHz, 125 kHz (default), 250 kHz, 500 kHz, 1 MHz, 2 MHz) |
| Parity | Even, odd or no parity |
| Transmission frequency | 2.00 MHz |
| Adjustable resolution | 8 ... 56 bit |
| Encoder supply voltage | 24 V DC ($U_1 - 0.5$ V) |

Output data

Analog:

| | |
|---------------------------------|---|
| Output name | Analog outputs |
| Connection method | Push-in connection |
| Connection technology | 2-conductor (shielded, twisted pair) |
| Number of outputs | 1 |
| D/A conversion time | 5 μ s |
| D/A converter resolution | 16 bit |
| Protective circuit | Surge protection; Electronic (35 V, permanent) Short-circuit and overload protection; electronic Transient protection; Suppressor diode |
| Data formats | IB IL, S7-compatible, standardized representation |
| Measured value representation | 16 bits |
| Representation of output values | 16 bits (15 bits + sign) |
| Current output signal | 0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA |
| Load/output load current output | max. 500 Ω |
| Voltage output signal | 0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V |
| Load/output load voltage output | > 2 k Ω |
| Permissible cable length | max. 250 m |

Product properties

| | |
|--------------------|---|
| Product type | I/O component |
| Product family | Axioline F |
| Type | block modular |
| Mounting position | any (no temperature derating) |
| Scope of supply | including bus base module and Axioline F connectors |
| Special properties | Analog output: 1 |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

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Electrical properties

| | |
|---|--------|
| Maximum power dissipation for nominal condition | 2.15 W |
|---|--------|

Encoder

| | |
|---------------------------|--|
| Nominal output voltage | 24 V DC ($U_1 - 0.5$ V) |
| Voltage range | 19.5 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current carrying capacity | max. 500 mA |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Short-circuit/overload protection; electronic |
| | Transient protection; Shielding |

Potentials: Axioline F local bus supply (U_{Bus})

| | |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 140 mA |

Potentials: Feed-in of supply voltage (U_1)

| | |
|----------------------|---|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 60 mA (Supply of the SSI interface and the analog output (20 mA), without sensor supply) |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; Polarity protection diode |
| | Transient protection; Suppressor diode |

Electrical isolation/isolation of the voltage ranges

| | |
|-------------------------------------|------------------------|
| Test voltage: Logic | 500 V AC, 50 Hz, 1 min |
| Test voltage: SSI I/O (24 V supply) | 500 V AC, 50 Hz, 1 min |
| Test voltage: Functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: Analog I/O | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-------------------------------|---|
| Connection name | Axioline F connector |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axioline F: system and installation" user manual. |

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, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

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Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Degree of protection | IP20 |
| 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) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

Mechanical test

| | |
|--|-----|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 30g |
| Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 10g |

Standards and regulations

| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|-------------------|-------------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any (no temperature derating) |

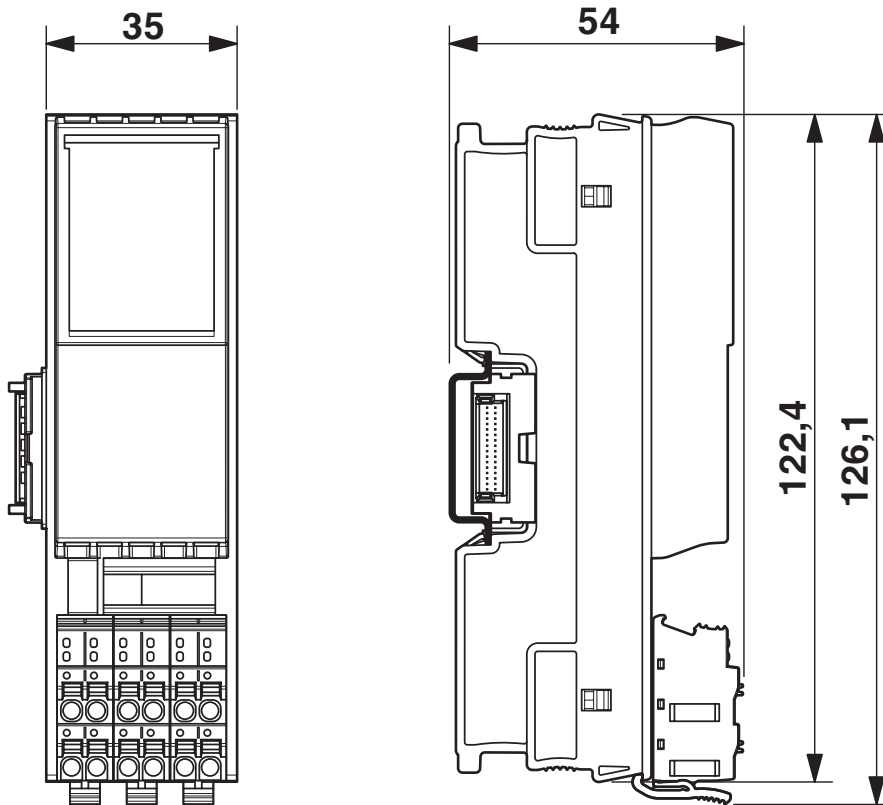
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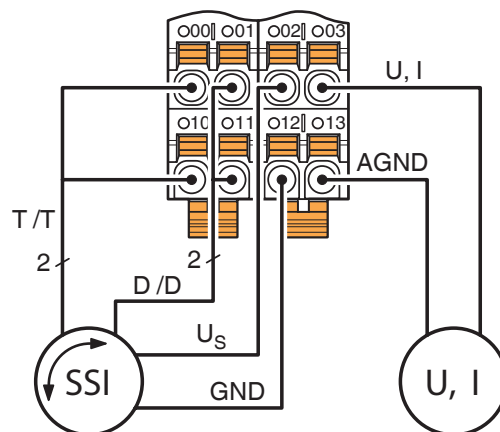
Drawings

Dimensional drawing



Dimensions (in mm)

Connection diagram



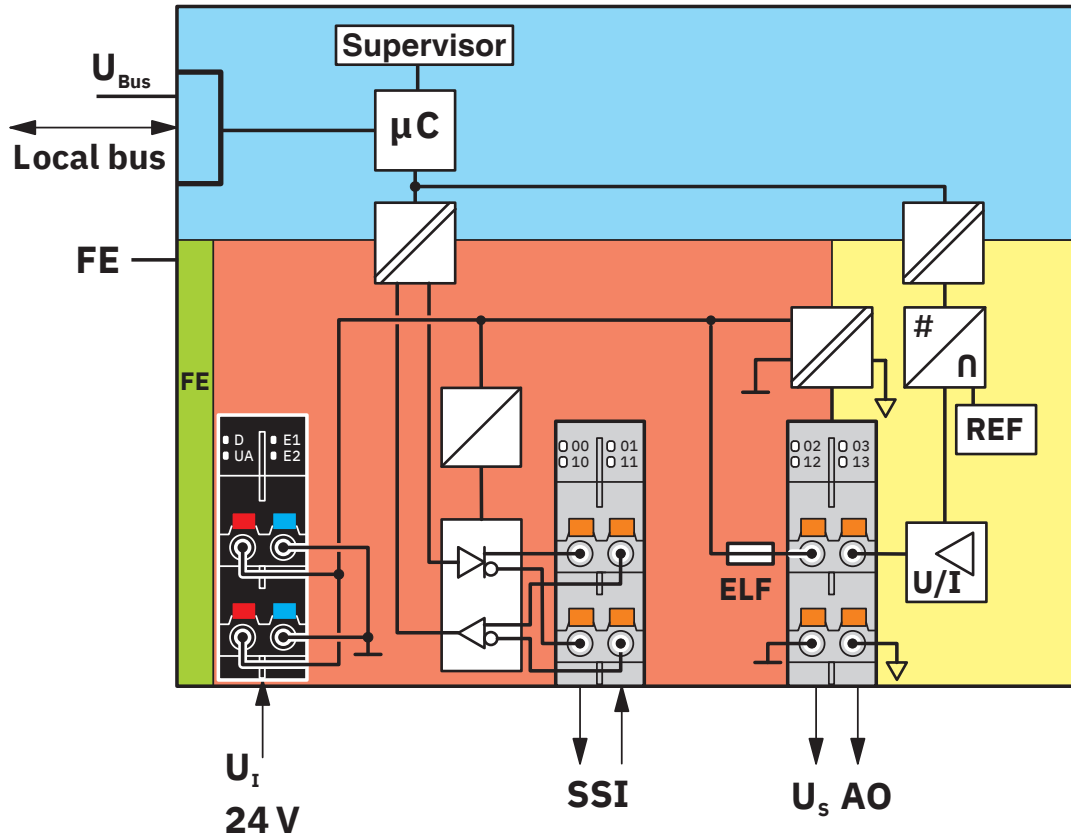
Example connection of an SSI sensor and an analog actuator for current or voltage

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Block diagram



Internal wiring of the terminal points

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Approvals

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cULus Listed

Approval ID: E238705

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242605 |
| ECLASS-15.0 | 27242605 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001601 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1) |
| SCIP | a27cdddc-6a84-45b2-8822-7a9bf5cd1847 |

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