

AXL F EX IS AI8 HART XC 1F - Analog module



1052432

<https://www.phoenixcontact.com/us/products/1052432>

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Axioline F, Analog input module, Active analog inputs: 8 (HART), 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 100 Mbps, Extreme conditions version, intrinsically safe, HART functionality, degree of protection: IP20, including bus base module and Axioline F connectors

Product description

The module is an Axioline F I/O module for use in the Axioline F modular I/O system. The module is a modular I/O device that can be affixed to the Axioline F local bus, to communicate I/O data up to the Axioline F controller or bus coupler, which forms the head of the station. As an intrinsic safety I/O module, this device allows direct connection from intrinsically safe field I/Os to the terminals of the module. The analog input I/O module with HART capabilities collects analog input and HART data from the field I/O terminals and makes this information available to the controller / bus coupler through the Axioline F local bus. The active analog input module allows the connection of up to eight HART enabled, passive analog input signals.

Your advantages

- Active analog input module
- Sources power for up to 8 HART enabled, passive analog input signals
- Cyclic access to PV, SV, TV, QV, and Loop Current
- Current range: 4 mA ... 20 mA
- Intrinsically safe analog inputs with connection to Zone 1, Zone 0 or Division 1
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1052432 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI2E7 |
| GTIN | 4055626676715 |
| Weight per piece (including packing) | 398.7 g |
| Weight per piece (excluding packing) | 380 g |
| Customs tariff number | 85176200 |
| Country of origin | US |

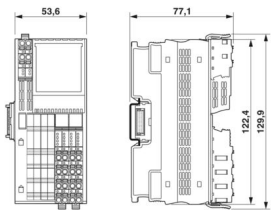
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1052432

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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 53.6 mm |
| Height | 129.9 mm |
| Depth | 77.1 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 |
| Utilization restriction | |
| EMC note | EMC: class A product, see manufacturer's declaration in the download area |
| Utilization restriction | |
| CCCex note | Use in potentially explosive areas is not permitted in China. |

Interfaces

| | |
|----------------------|-----------------|
| Axioline F local bus | |
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

| | |
|-----------------------------|---------|
| Module | |
| Input address area | 48 Byte |
| Output address area | 0 Byte |
| Required parameter data | 27 Byte |
| Required configuration data | 6 Byte |

Input data

| | |
|------------|----------------------|
| Analog: | |
| Input name | Active analog inputs |

AXL F EX IS AI8 HART XC 1F - Analog module



1052432

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| | |
|--|--|
| Description of the input | HART enabled, active analog input signals |
| Number of inputs | 8 (HART) |
| A/D conversion time | 500 µs |
| Connection method | Push-in connection |
| Connection technology | 2-conductor |
| Note regarding the connection technology | shielded, twisted pair |
| Current input signal | 4 mA ... 20 mA |
| Input resistance current input | 100 Ω (typical) |
| A/D converter resolution | 12 bit |
| Data formats | Inline, S7-compatible, standard formatting |
| Input filter | 25 Hz |
| Filtering | RFI filtering / passive TP 2nd order |
| Limit frequency (3 dB) | 15 Hz |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Protective circuit | Polarity reversal protection of the inputs |

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 | Extreme conditions version |
| | intrinsically safe |
| | HART functionality |

Insulation characteristics

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

Electrical properties

| | |
|---|--------|
| Maximum power dissipation for nominal condition | 2.51 W |
|---|--------|

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

| | |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 60 mA |
| | typ. 40 mA |

Potentials: 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 draw | max. 240 mA |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; Polarity protection diode |
| | Transient protection; Suppressor diode |

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1052432

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Electrical isolation/isolation of the voltage ranges

| | |
|--|-------------------------|
| Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os) | 500 V AC, 60 Hz, 1 min |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground | 500 V AC, 60 Hz, 1 min |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / analog inputs | 1500 V AC, 60 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 60 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / analog inputs | 1500 V AC, 60 Hz, 1 min |
| Test voltage: Analog inputs / functional ground | 500 V AC, 60 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

Ambient conditions

| | |
|--|--|
| Ambient temperature (operation) | -25 °C ... 60 °C (Standard) -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.) |
| 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) |

Standards and regulations

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

Approvals

ATEX

| | |
|----------------|---|
| Identification | II 3(1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC |
| Certificate | DEMKO 20 ATEX 2370X |

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IECEX

| | |
|----------------|--|
| Identification | Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC |
| Certificate | IECEX UL 20.0044X |

UKCA Ex (UKEX)

| | |
|----------------|---|
| Identification | II 3(1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC |
| Certificate | UL22UKEX2508X |

UL, USA/Canada

| | |
|----------------|---------|
| Identification | cULus |
| Certificate | E238705 |

UL Ex, USA / Canada

| | |
|----------------|--|
| Identification | Class I, Division 2, Groups A, B, C, D, T4 |
| | Intrinsically safe connections to: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc |
| | Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc |
| | [AEx ia Da] IIIC |
| | Ex ec [ia Ga] IIC T4 Gc |
| Certificate | [Ex ia Da] IIIC |
| | E196811 |

CCC / China-Ex

| | |
|----------------|-------------------------|
| Identification | Ex ec [ia Ga] IIC T4 Gc |
| | [Ex ia Da] IIIC |

Ex data

| | |
|------------------|---|
| UL, USA / Canada | Ind. Cont. Eq. (E238705) also Listed Ind. Cont. Eq. for haz. loc. E196811 Install in: Class I, Div. 2, Groups A, B, C, D T4 Intrinsically safe outputs for: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc [AEx ia Da] IIIC Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC |
|------------------|---|

Mounting

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

Ex data

Safety data

| | |
|--------------------------------------|---------|
| Max. output voltage U_o | 24.8 V |
| Max. output current I_o | 85.8 mA |
| Max. output power P_o | 532 mW |
| Safety-related maximum voltage U_m | 250 V |

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| | |
|--|-------------------------|
| A, B / IIC: Max. external inductivity L_o / Max. external capacitance C_o | 2.95 mH / 0.113 μ F |
| C/IIB, IIIC: Max. external inductivity L_o / Max. external capacitance C_o | 18.95 mH / 0.86 μ F |
| D/IIA, E, F, G, Class III: Max. external inductivity L_o / Max. external capacitance C_o | 30.95 mH / 3.05 μ F |

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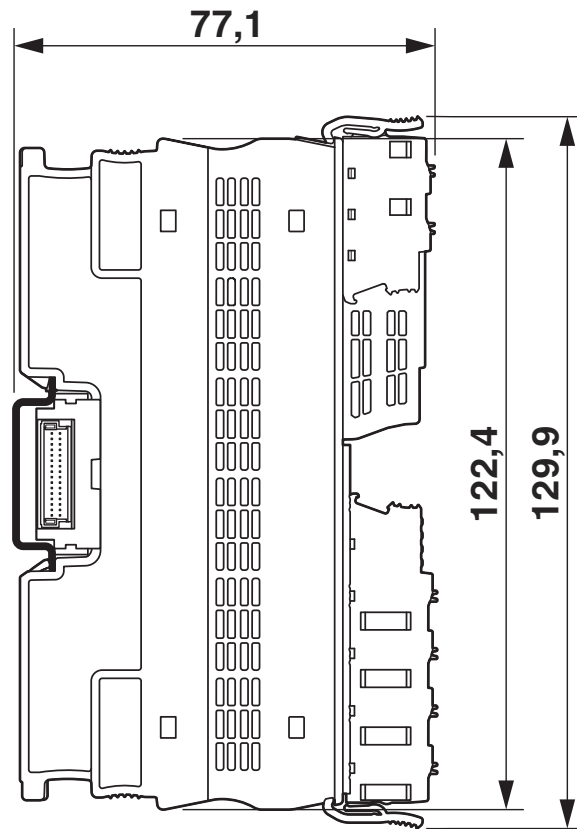
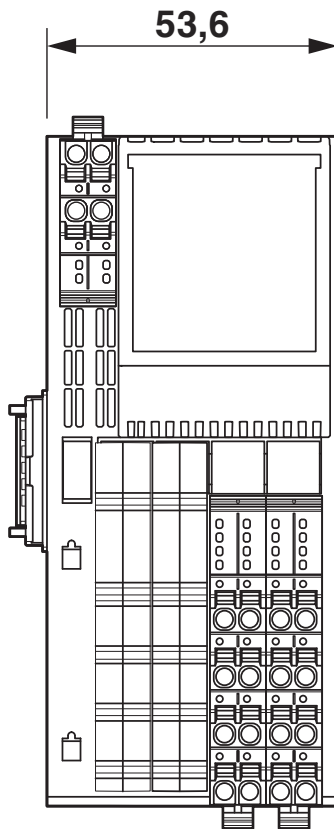


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Drawings

Dimensional drawing



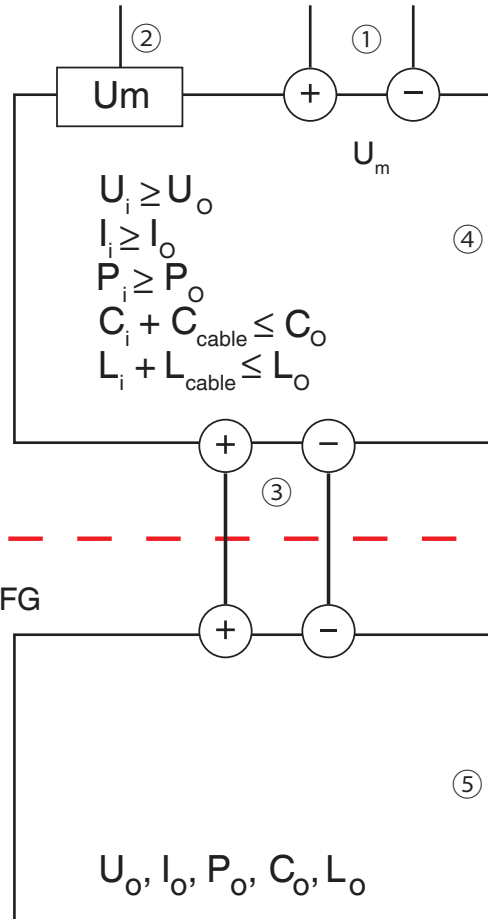
Dimensional drawing

Schematic diagram

Safe area

Class I, Division 2 , Groups ABCD, T4
 Class I, Zone 2, IIC, T4
 Zone 2, IIC, T4

Class I/II/III, Division 1, Groups ABCDEFG
 Class I, Zone 0, IIC
 Class II, Zone 20, IIIC
 Zone 0, IIC
 Zone 20, IIC



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1052432>



cULus Listed

Approval ID: E238705



IECEX

Approval ID: IECEX UL 20.0044X



cUL Listed

Approval ID: FILE E196811



UL Listed

Approval ID: FILE E196811



ATEX

Approval ID: DEMKO 20 ATEX 2370X



CCC

Approval ID: 2021122316114727



UKCA-EX

Approval ID: UL22UKEX2508X

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242601 |
| ECLASS-15.0 | 27242601 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001596 |
|-----------|----------|

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-25 |
| | 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) |
| SCIP | 0f5c460a-add9-4fd4-9bc8-cffcdf461953 |

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