

AXL F AI8 W 1F - Analog module

2702525

<https://www.phoenixcontact.com/us/products/2702525>

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The figure shows the standard item

Axioline F, Analog input module, Analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 100 Mbps, for SAFE AI applications with service-free continuous operation, 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 and current signals. The high long-term stability of the peripheral electronics ensures service-free continuous operation.

Your advantages

- 8 analog, bipolar input channels for the connection of either voltage or current signals
- Connection of sensors 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
- High long-term stability of measuring inputs
- Device rating plate stored
- Safe analog value processing with SAFE AI and other components

Commercial data

Item number	2702525
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI241
GTIN	4055626210803
Weight per piece (including packing)	268.4 g
Weight per piece (excluding packing)	204 g
Customs tariff number	85389091
Country of origin	DE

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Technical data

Dimensions

Dimensional drawing	
Width	53.6 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
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Material specifications

Color (Housing)	gray (RAL 7042)
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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	16 Byte
Output address area	0 Byte

Fieldbus data telegram (PROFIBUS)

Required parameter data	11 Byte
Required configuration data	6 Byte

Input data

Analog:

Input name	Analog inputs
Description of the input	Differential inputs, voltage or current can be chosen separately
Number of inputs	8

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A/D conversion time	2 μ s
Connection method	Push-in connection
Connection technology	2-conductor
Note regarding the connection technology	shielded, twisted pair
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Input resistance current input	104 Ω (typical)
Voltage input signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V
Input resistance of voltage input	268 k Ω (typical)
A/D converter resolution	16 bit
Data formats	IB IL, S7-compatible
Input filter	30 Hz, 12 kHz and mean value generation (can be parameterized)
Filtering	RFI filtering / passive TP 1st order
Limit frequency (3 dB)	30 Hz 12 kHz (in fast mode)
Common mode voltage range signal - ground	-50 V DC ... 50 V DC
Measured value representation	16 bits (15 bits + sign bit)
Protective circuit	Transient protection of inputs; Suppressor diode Overload protection of the current inputs; No; ± 5.2 V DC, maximum, $I_{max} = 50$ mA Overload protection of the voltage inputs; ± 30 V DC, maximum

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	for SAFE AI applications with service-free continuous operation

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

Supply voltage	5 V DC (via bus base module)
Current draw	max. 130 mA typ. 105 mA

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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. 45 mA typ. 35 mA
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: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os)	500 V AC, 50 Hz, 1 min
Test voltage: 5 V supply of the local bus (U_{BUS}) / analog inputs	500 V AC, 50 Hz, 1 min
Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground	500 V AC, 50 Hz, 1 min
Test voltage: 24 V supply (I/O) / analog inputs	500 V AC, 50 Hz, 1 min
Test voltage: 24 V supply (I/O) / functional ground	500 V AC, 50 Hz, 1 min
Test voltage: Analog inputs / functional ground	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

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C -10 °C ... 35 °C (annual average)
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, annual average < 75%)
Permissible humidity (storage/transport)	5 % ... 95 % (Non-condensing, annual average < 75%)

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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)
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Mounting

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

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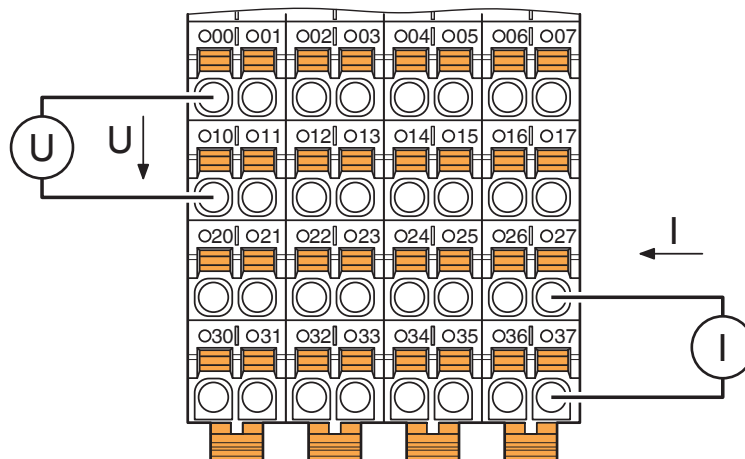
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Drawings

Dimensional drawing



Connection diagram



Connection for voltage and current measurement

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Connection diagram



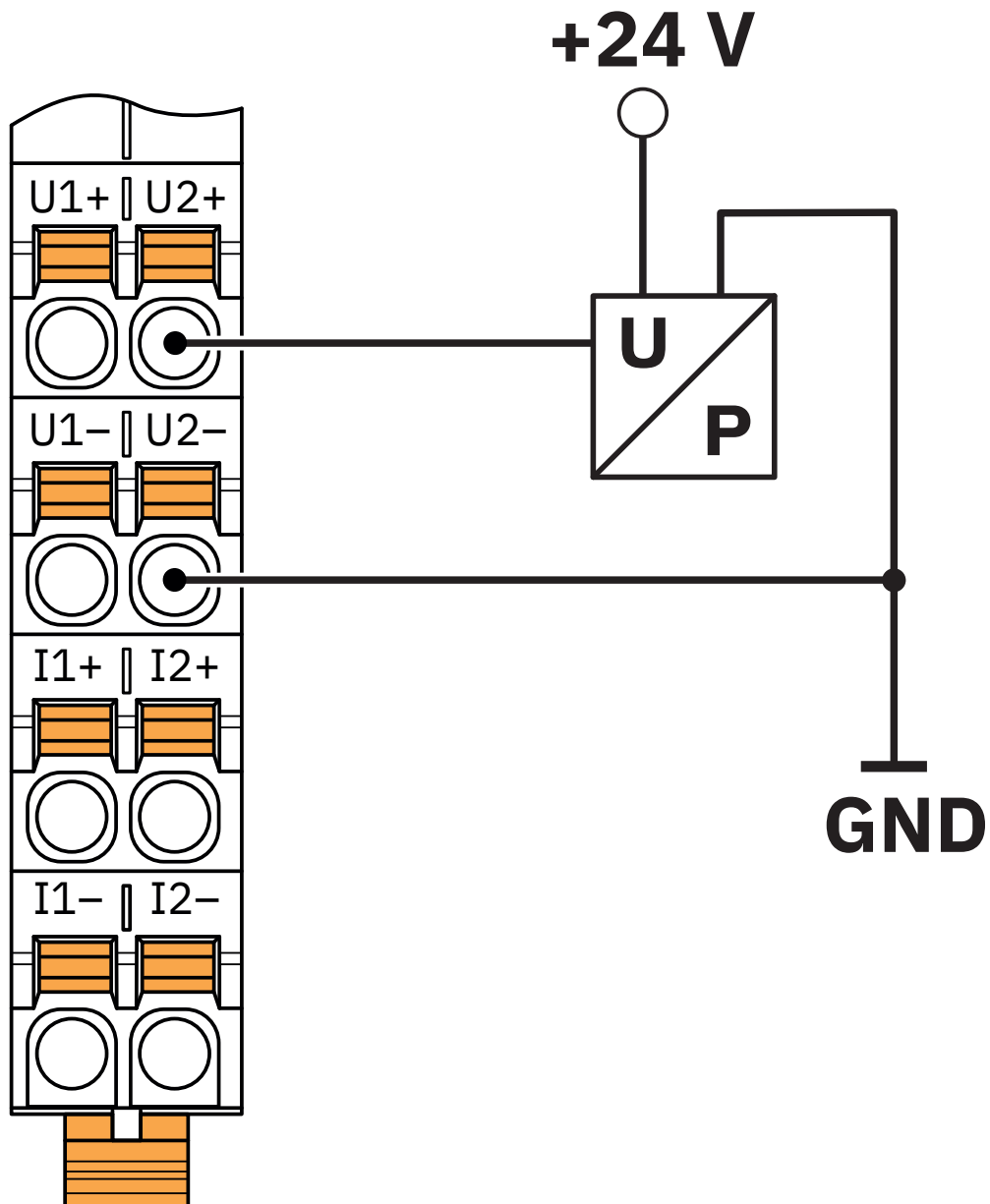
Active pressure sensor at a differential current input

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Connection diagram



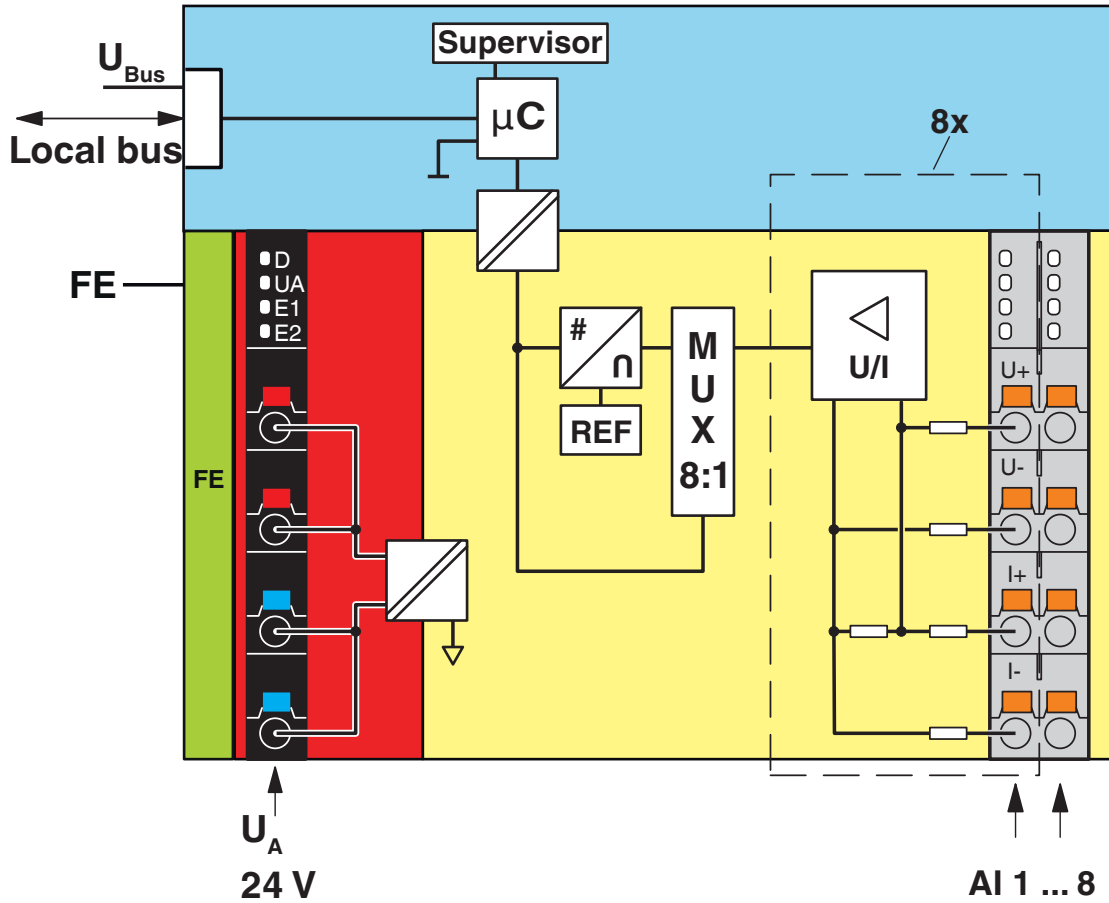
Differential voltage input with active 3-conductor transmitter

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Block diagram



Internal wiring of the terminal points

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702525>



cULus Listed

Approval ID: E238705



Functional Safety

Approval ID: 968/EL 916.05/24

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Classifications

ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

ETIM

ETIM 10.0	EC001596
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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)
SCIP	1b73886c-f0b9-428b-bdbc-02ada21852ac

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