

AXL F AI4 U 1H - Analog module



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 technology: 2-, 3-, 4-conductor, 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-conductor 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

Commercial data

Item number	2688501
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI241
Catalog page	Page 83 (C-6-2019)
GTIN	4046356744232
Weight per piece (including packing)	197.4 g
Weight per piece (excluding packing)	191 g
Customs tariff number	85389091
Country of origin	DE

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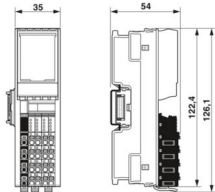
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Technical data

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).

Interfaces

Axioline F local bus

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

System properties

Module

Input address area	8 Byte
Output address area	8 Byte
Required parameter data	7 Byte
Required configuration data	6 Byte

Input data

Analog

Input name	Analog inputs
Description of the input	Differential inputs, voltage
Number of inputs	4
A/D conversion time	31.25 µs
A/D converter resolution	16 bit
Connection method	Push-in connection
Connection technology	2-, 3-, 4-conductor
Note regarding the connection technology	shielded, twisted pair
Voltage input signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V

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Input resistance of voltage input	268 kΩ (typical)
Data formats	IB IL, S7-compatible
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)
Limit frequency (3 dB)	30 Hz
	12 kHz
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 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 delivery	including bus base module and Axioline F connectors
Special properties	integrated sensor supply

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	4.08 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. 150 mA
	typ. 120 mA
Power consumption	max. 0.75 W
	typ. 0.6 W

Potentials: 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 draw	max. 245 mA ($I_{IS} = 4 \times 50$ mA (full load))
	max. 45 mA ($I_{IS} = 0$ mA)
	typ. 118 mA ($I_{IS} = 4 \times 20$ mA (nominal load))
	max. 125 mA ($I_{IS} = 4 \times 20$ mA (nominal load))
	typ. 238 mA ($I_{IS} = 4 \times 50$ mA (full load))
Power consumption	max. 5.88 W (Full load)
Protective circuit	Surge protection; electronic (35 V, 0.5 s)
	Reverse polarity protection; up to HW 02: polarity protection diodefrom HW 03: parallel diode; with external 5 A fuse (for startup only)

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	Transient protection; Suppressor diode
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Supply:

Designation	Sensor supply U_{IS}
Supply voltage	24 V DC (from U_A)
Current consumption	max. 50 mA (per channel)

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.

Conductor connection

Connection method	Push-in connection
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

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
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

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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)
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Mounting

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

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