

AXL F AI4 U 1H - Analog module

2688501

<https://www.phoenixcontact.com/us/products/2688501>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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
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

AXL F AI4 U 1H - Analog module

2688501

<https://www.phoenixcontact.com/us/products/2688501>

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	8 Byte
Output address area	0 Byte

Fieldbus data telegram (PROFIBUS)

Required parameter data	7 Byte
Required configuration data	6 Byte

Input data

Analog: General

Input name	Analog inputs
Description of the input	Differential inputs, voltage
Number of inputs	4

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

A/D conversion time	31.25 μ s
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
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)
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 inputs; \pm 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	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	1.85 W
-------------------------------------------------	--------

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

Supply voltage	5 V DC (via bus base module)
Current draw	max. 150 mA (up to HW 03) max. 60 mA (from HW 04) typ. 120 mA (up to HW 03) typ. 53 mA (from HW 04)

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) max. 245 mA ($I_{IS} = 4 \times 50$ mA (full load), up to HW 03)

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

Current draw	max. 238 mA ($I_{IS} = 4 \times 50$ mA (full load), from HW 04)
	typ. 34 mA ($I_{IS} = 0$ mA, from HW 04)
	max. 45 mA ($I_{IS} = 0$ mA, up to HW 03)
	max. 38 mA ($I_{IS} = 0$ mA, from HW 04)
	typ. 238 mA ($I_{IS} = 4 \times 50$ mA (full load), up to HW 03)
	typ. 234 mA ($I_{IS} = 4 \times 50$ mA (full load), from HW 04)
Current consumption	typ. 38 mA ($I_{IS} = 0$ mA, up to HW 03)
Protective circuit	Surge protection; electronic (35 V, 0.5 s)
	Reverse polarity protection; up to HW 02: polarity protection diode from HW 03: parallel diode; with external 5 A fuse (for startup only)
	Transient protection; Suppressor diode

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.

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
---------------------------------	------------------

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

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

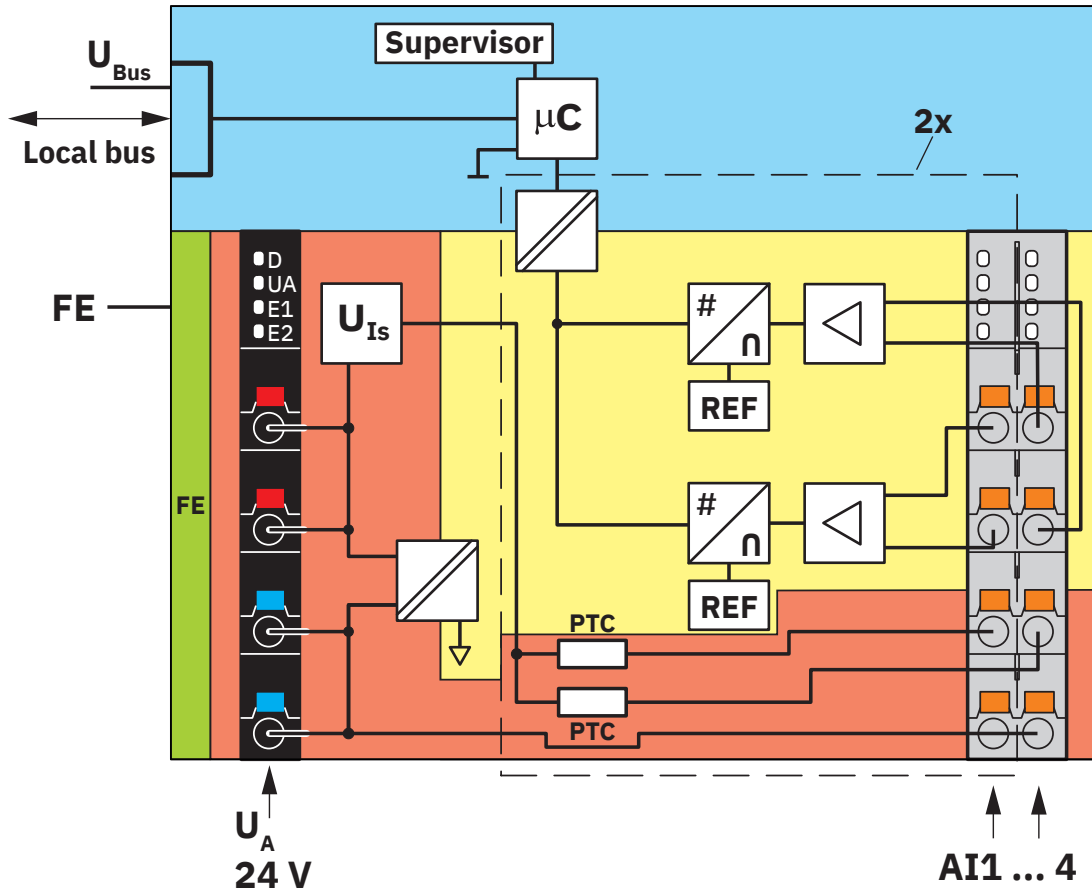
Mounting type	DIN rail mounting
Mounting position	any (no temperature derating)

AXL F AI4 U 1H - Analog module

2688501

<https://www.phoenixcontact.com/us/products/2688501>

Block diagram



Internal wiring of the terminal points

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2688501>



DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2480202TA-02



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840



RINA

Approval ID: ELE008423XG001

ABS

Approval ID: 23-2449604-PDA



cULus Listed

Approval ID: E238705

ABS

Approval ID: 23-2449604-PDA

BSH

Approval ID: 840



DNV GL

Approval ID: TAA00000DF



PRS

Approval ID: TE/1020/880590/21

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>



RINA

Approval ID: ELE008423XG001



LR

Approval ID: LR2480202TA-02



cULus Listed

Approval ID: E238705



cULus Listed

Approval ID: E238705

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

Classifications

ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

ETIM

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

UNSPSC

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

AXL F AI4 U 1H - Analog module



2688501

<https://www.phoenixcontact.com/us/products/2688501>

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-E
	No hazardous substances above the limits

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	a1def7f1-8886-4882-b885-3755a9763dab

Phoenix Contact 2026 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com