

AXL F AI4 I XC 1H - Analog module

2702007

<https://www.phoenixcontact.com/us/products/2702007>

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.



The figure shows the standard item

Axioline F, Analog input module, Analog inputs: 4, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-, 3-, 4-conductor, transmission speed in the local bus: 100 Mbps, integrated sensor supply, Extreme conditions version, 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 current signals.

Your advantages

- 4 analog, bipolar input channels for the connection of current signals
- Connection of sensors in 2-, 3-, and 4-conductor technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA
- 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
- 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)
- Partially coated PCBs

Commercial data

Item number	2702007
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI241
GTIN	4046356900997
Weight per piece (including packing)	217.8 g
Weight per piece (excluding packing)	145 g
Customs tariff number	85389091
Country of origin	DE

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

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
Utilization restriction	
EMC note	EMC: class A product, see manufacturer's declaration in the download area

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:	
---------	--

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

Input name	Analog inputs
Description of the input	Differential inputs, current
Number of inputs	4
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
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Input resistance current input	104 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
Measured value representation	16 bits (15 bits + sign bit)
Protective circuit	Transient protection of inputs; Suppressor diode Overload protection of the inputs; No; ± 5.2 V DC, maximum, I_{max} = 50 mA

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 Extreme conditions version

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 W
---	-----

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

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)

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

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))
Current consumption	typ. 38 mA ($I_{IS} = 0$ mA)
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 (Standard, applications with UL approval, use in zone 2 potentially explosive area)
	-40 °C ... 70 °C (Extended, see section "Tested successfully: use

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

	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)

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

Test (noxious gas)

Test standard	ISA-71.04-2013 G3 Harsh Group A IEC 60068-2-60:2015 Method 4
Temperature	25 °C ±1 K
Humidity (relative)	75 % ±3 %
Test duration	21 Days
Volume concentration H ₂ S (Hydrogen sulfide)	50 ppb
Volume concentration NO ₂ (Nitrogen dioxide)	1250 ppb
Volume concentration Cl ₂ (Chlorine)	10 ppb
Volume concentration SO ₂ (Sulfur dioxide)	300 ppb

Standards and regulations

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

Approvals

ATEX

Identification	⊕ II 3 G Ex ec IIC T4 Gc
Certificate	UL 20 ATEX 2441X

IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX ULD 20.0026X

UL, USA/Canada

Identification	cULus
Certificate	E238705

UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T4 Class I, Division 2, Groups A, B, C, and D, T4 Ex ec IIC T4 Gc X
Certificate	E366272

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	

Mounting

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

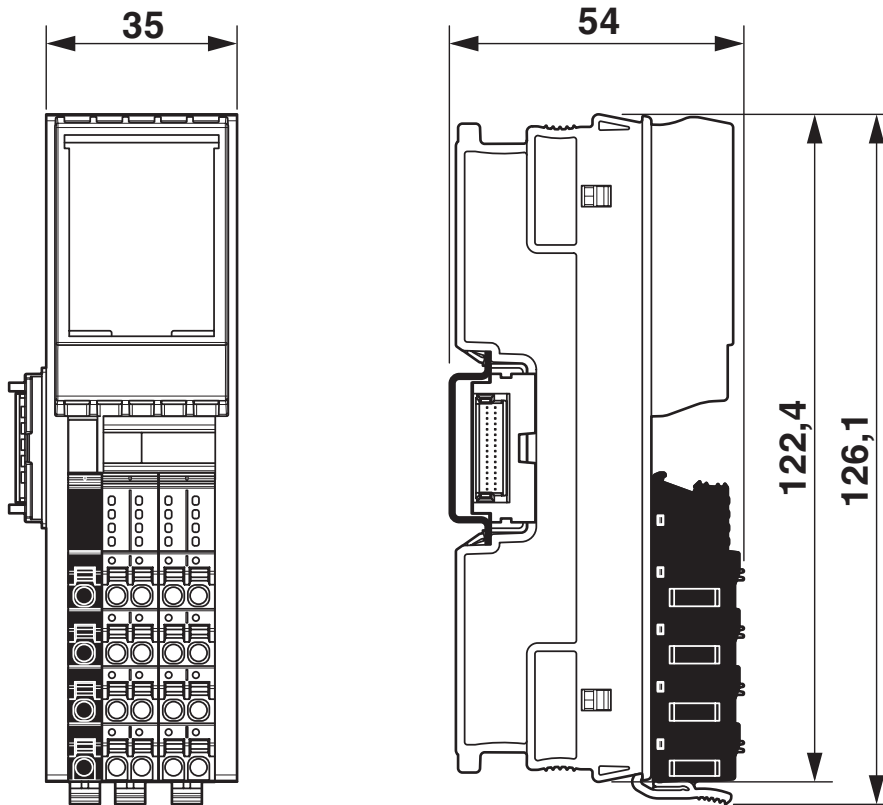
AXL F AI4 I XC 1H - Analog module

2702007

<https://www.phoenixcontact.com/us/products/2702007>

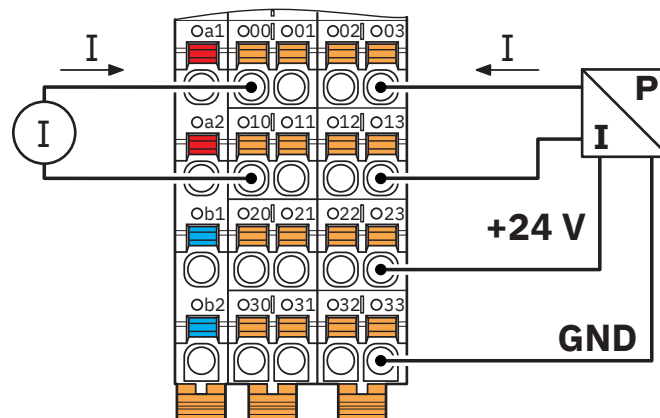
Drawings

Dimensional drawing



Dimensional drawing

Connection diagram



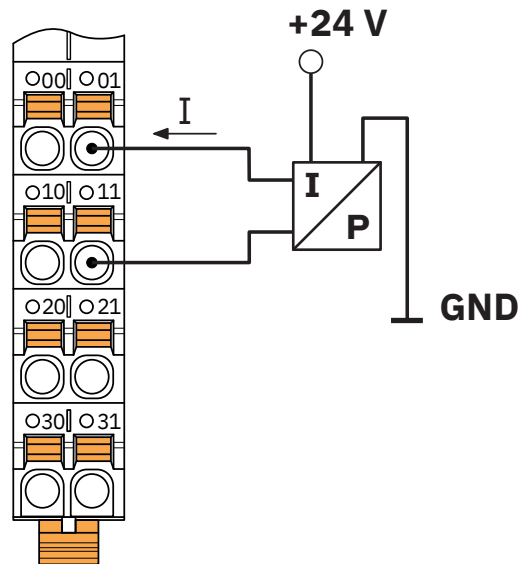
Connection for current measurement

AXL F AI4 I XC 1H - Analog module

2702007

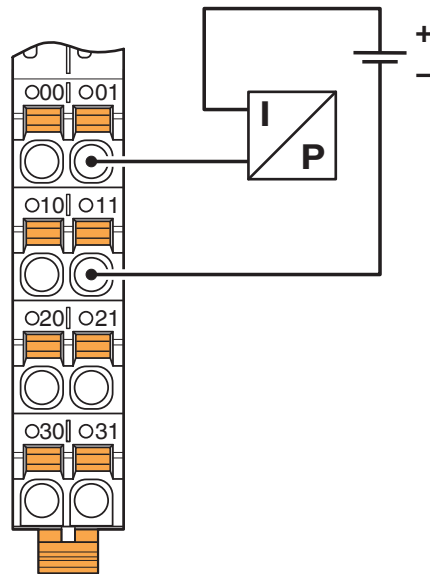
<https://www.phoenixcontact.com/us/products/2702007>

Connection diagram



Active pressure sensor at a differential current input

Connection diagram



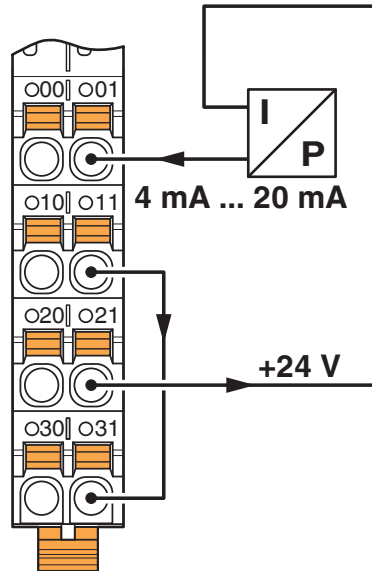
Differential current input with passive 2-conductor transmitter (current loop)

AXL F AI4 I XC 1H - Analog module

2702007

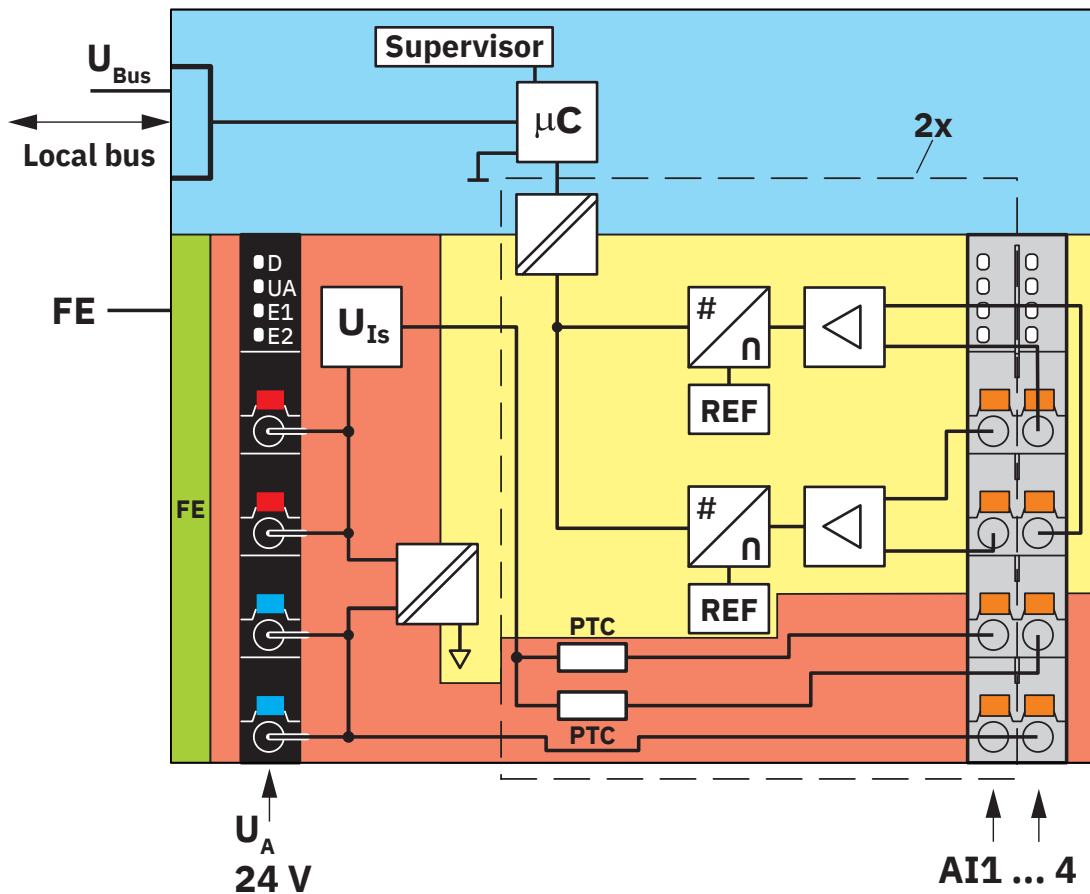
<https://www.phoenixcontact.com/us/products/2702007>

Connection diagram



Differential current input with passive 2-conductor transmitter (current loop)

Block diagram



Internal wiring of the terminal points

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702007>



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



IECEx

Approval ID: IECEx ULD 20.0026X



ATEX

Approval ID: UL 20 ATEX 2441X



cULus Listed

Approval ID: E366272



CCC

Approval ID: 2021122309114456_CN

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

Classifications

ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

ETIM

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

UNSPSC

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

AXL F AI4 I XC 1H - Analog module



2702007

<https://www.phoenixcontact.com/us/products/2702007>

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	9bcf0b4f-5acf-49f3-9081-6c46b7266855

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