

# AXL F AI8 1F - Analog module



2688064

<https://www.phoenixcontact.com/in/products/2688064>

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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, 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.

## 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,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA
- Device rating plate stored

## Commercial Data

Item number	2688064
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	DRI
Product Key	DRI241
Catalog Page	Page 83 (C-6-2019)
GTIN	4046356501460
Weight per Piece (including packing)	246.1 g
Weight per Piece (excluding packing)	204 g
Customs tariff number	85389091
Country of origin	DE

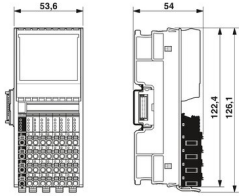
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## Technical Data

### 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).

### Material specifications

Color	traffic grey A 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

#### Module

Input address area	16 Byte
Output address area	16 Byte
Required parameter data	27 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
A/D conversion time	2 $\mu$ s
A/D converter resolution	16 bit
Connection method	Push-in connection
Connection technology	2-conductor
Note regarding the connection technology	shielded, twisted pair
	0 mA ... 20 mA

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Current input signal	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 kΩ (typical)
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

Type	block modular
Product type	I/O component
Product family	Axioline F
Mounting position	any (no temperature derating)
Scope of delivery	including bus base module and Axioline F connectors

## 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

Power consumption	typ. 1.255 W (at $U_{BUS}$ and $U_A$ (from HW 06))
	typ. 1.365 W (at $U_{BUS}$ and $U_A$ (up to HW 05))
	max. 1.62 W (at $U_{BUS}$ and $U_A$ (from HW 06))
	max. 1.605 W (at $U_{BUS}$ and $U_A$ (up to HW 05))

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

Supply voltage	5 V DC (via bus base module)
Current draw	max. 130 mA (up to HW 05)
	max. 60 mA (from HW 06)
	typ. 105 mA (up to HW 05)

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	typ. 45 mA (from HW 06)
Power consumption	max. 650 mW (up to HW 05)
	max. 300 mW (from HW 06)
	typ. 525 mW (up to HW 05)
	typ. 225 mW (from HW 06)

## Potentials: Supply for analog modules (U<sub>A</sub>)

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 55 mA (from HW 06)
	max. 45 mA (up to HW 05)
	typ. 43 mA (from HW 06)
	typ. 35 mA (up to HW 05)
Power consumption	max. 1.32 W (from HW 06)
	max. 1.08 W (up to HW 05)
Protective circuit	Surge protection; electronic (35 V, 0.5 s)
	Reverse polarity protection; Polarity protection diode
	Transient protection; Suppressor diode

## Connection data

### Connection technology

Connection name	Axiline F connector
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axiline F: system and installation" user manual.

### Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

### Axiline F connector

Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axiline F: system and installation" user manual.
Conductor cross section, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
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

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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)
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## Mounting

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

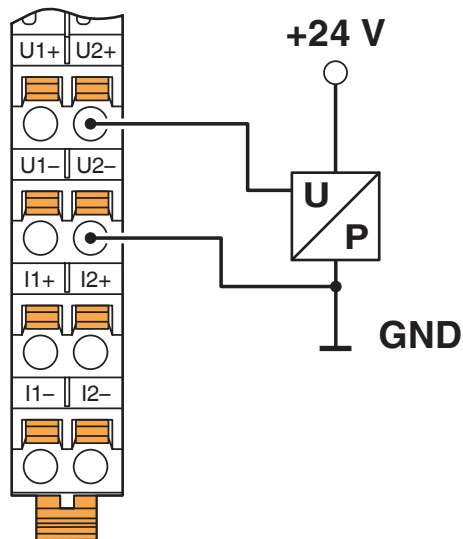
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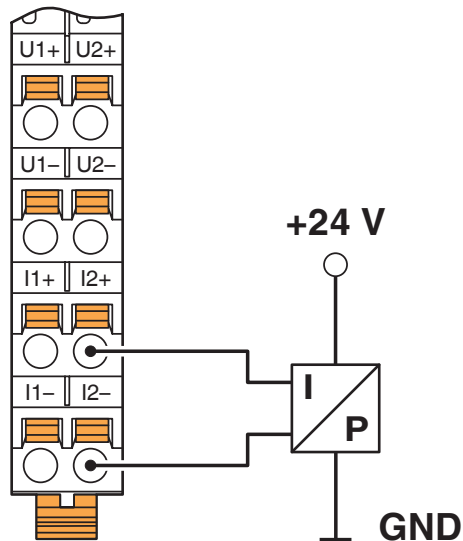
## Drawings

Connection diagram



Differential voltage input with active 3-conductor transmitter

Connection diagram



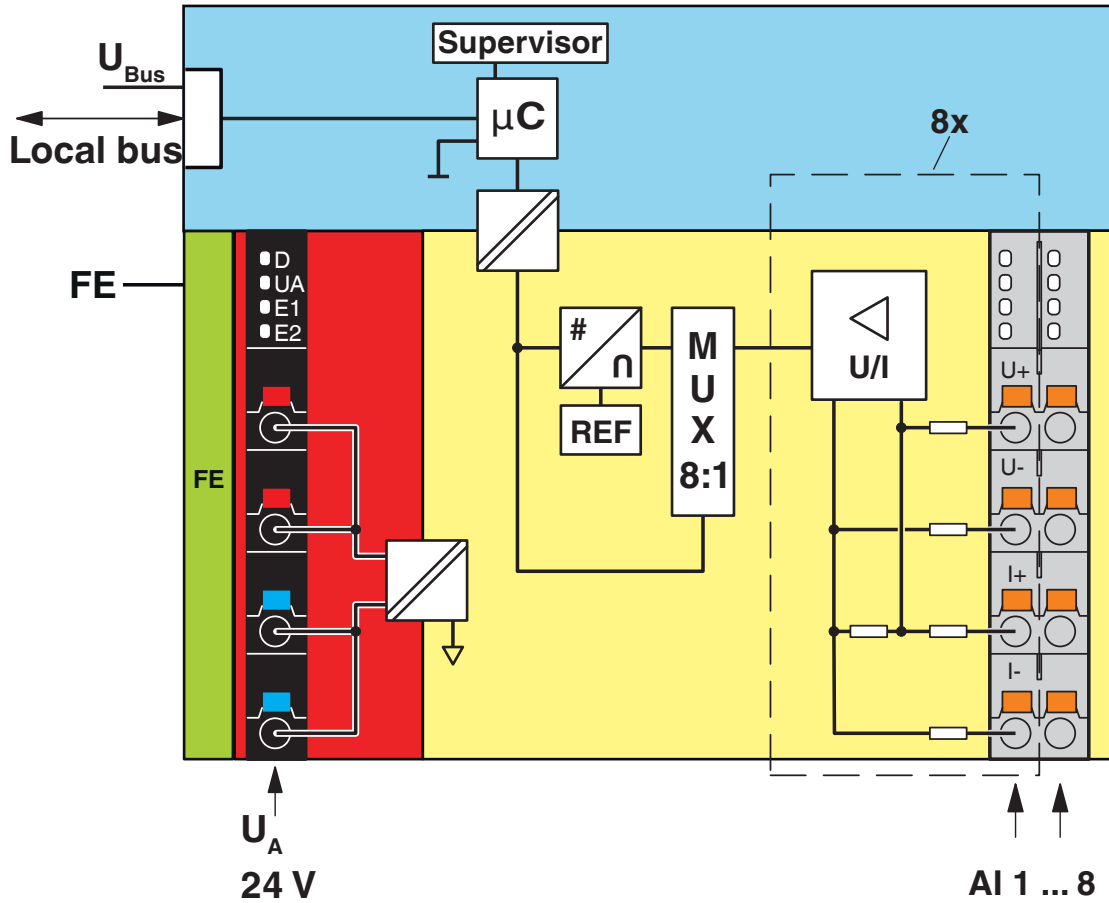
Passive pressure sensor at a differential current input

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Block diagram



Internal wiring of the terminal points

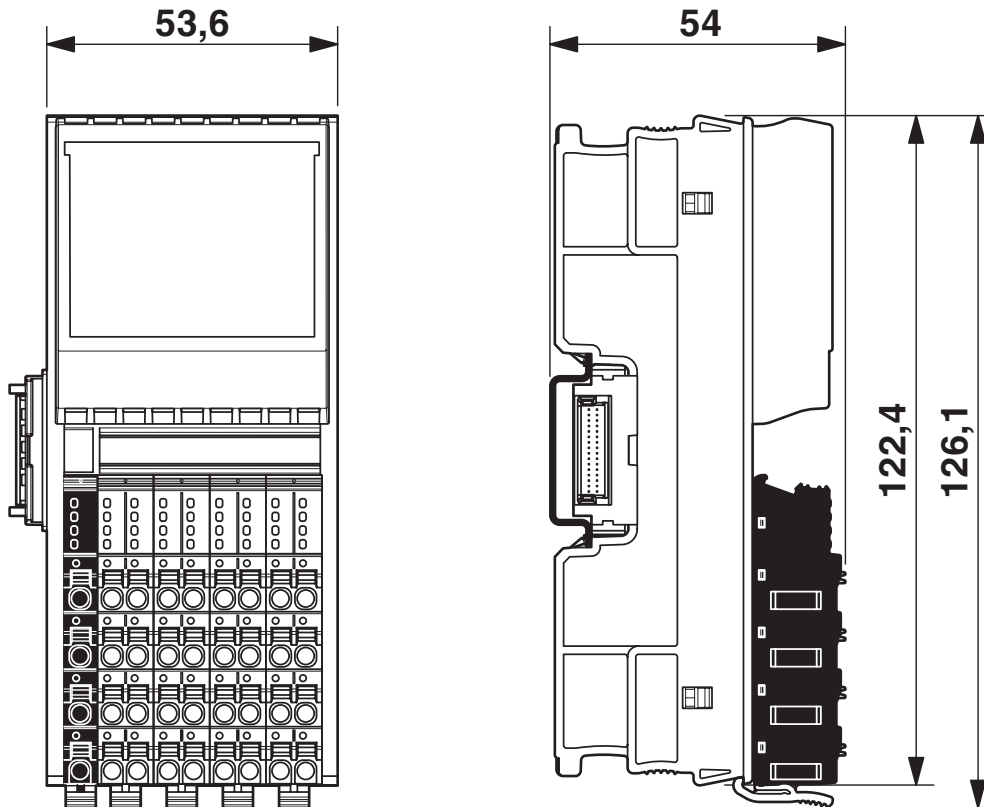
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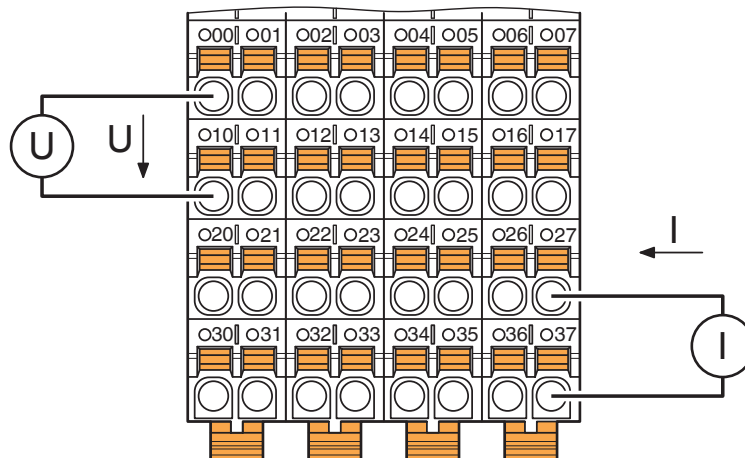
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Dimensional drawing



Connection diagram



Connection for voltage and current measurement



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## Approvals



**DNV GL**

Approval ID: TAA00000DF



**LR**

Approval ID: LR2001902TA



**BV**

Approval ID: 36433/B4 BV



**PRS**

Approval ID: TE/1020/880590/21



**UL Listed**

Approval ID: FILE E 238705



**cUL Listed**

Approval ID: FILE E 238705



**RINA**

Approval ID: ELE283021XG



**EAC**

Approval ID: TR\_TS\_D\_01831-19

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## Classifications

### ECLASS

ECLASS-11.0	27242601
ECLASS-12.0	27242601
ECLASS-13.0	27242601

### ETIM

ETIM 8.0	EC001596
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### UNSPSC

UNSPSC 21.0	32151600
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### AXL F BS F - Bus connector

2688129

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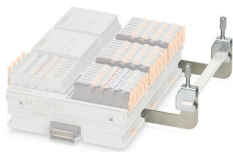
Axioline F bus base module for housing type F

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### AXL SHIELD SET - Shield connection

2700518

<https://www.phoenixcontact.com/in/products/2700518>



Axioline shield connection set (contains 2 shield bus holders and 2 SK 5 shield connection clamps)

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## ZB 20,3 AXL UNPRINTED - Zack marker strip

0829579

<https://www.phoenixcontact.com/in/products/0829579>



Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

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## ZBF 10/5,8 AXL UNPRINTED - Zack Marker strip, flat

0829580

<https://www.phoenixcontact.com/in/products/0829580>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 10.15 mm, lettering field size: 4 x 10, 15 x 5 mm, 1 x 5.8 x 5 mm, Number of individual labels: 50

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## EMT (35X46)R - Insert label

0801604

<https://www.phoenixcontact.com/in/products/0801604>



Insert label, for marking the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, lettering field size: 35 x 46 mm, Number of individual labels: 500

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