

# Analog module - AXL F AO8 1F

2688080

<https://www.phoenixcontact.com/pc/products/2688080>

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Axioline F, Analog output module, Analog outputs: 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 output analog voltage and current signals.

## Your advantages

- 8 analog, bipolar output channels for the connection of either voltage or current signals
- Connection of actuators 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
- Short-circuit-proof outputs
- Device rating plate stored
- Safe analog value processing with SAFE AI and other components

## Commercial Data

Item number	2688080
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DRI242
Catalog Page	Page 85 (C-6-2019)
GTIN	4046356501446
Weight per Piece (including packing)	278.22 g
Weight per Piece (excluding packing)	260 g
Customs tariff number	85389091
Country of origin	DE

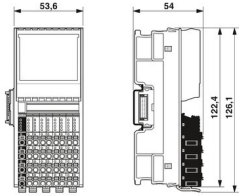
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## Technical Data

### 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	7 Byte

### Output data

#### Analog

Output name	Analog outputs
Connection method	Push-in connection
Connection technology	2-conductor
Note regarding the connection technology	shielded, twisted pair
Number of outputs	8
D/A conversion time	5 $\mu$ s
D/A converter resolution	16 bit
Protective circuit	Short-circuit and overload protection; electronic Transient protection; Suppressor diode

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Data formats	IB IL, S7-compatible
Representation of output values	16 bits (15 bits + sign)
Process data update	300 µs
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	-20 mA ... 20 mA
Load/output load current output	to 500 Ω
Voltage output signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V
Load/output load voltage output	> 2 kΩ
Permissible cable length	max. 250 m (Reference cable type LiYCY (TP) n*2*0.5 mm <sup>2</sup> )

## Product properties

Type	block modular
Product type	I/O component
Mounting position	any (observe 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

### Potentials

Power consumption	typ. 1.725 W (to $U_{\text{BUS}}$ and $U_{\text{A}}$ ; power input; no load, output 0 V)
	max. 6.29 W (to $U_{\text{BUS}}$ and $U_{\text{A}}$ ; 8 current channels, output 20 mA)

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

Supply voltage	5 V DC (via bus base module)
Current draw	max. 130 mA
	typ. 105 mA
Power consumption	max. 0.65 W
	typ. 0.525 W

### Potentials: Supply for analog modules ( $U_{\text{A}}$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 235 mA (8 current channels, 20 mA output)
	typ. 110 mA (8 voltage channels, 10 V output)
Power consumption	max. 5.64 W (8 current channels, 20 mA output)
Protective circuit	Surge protection; electronic (35 V, 0.5 s)
	Reverse polarity protection; up to HW 03: polarity protection diode from HW 04: parallel diode; with external 5 A fuse (for startup only)

Transient protection; Suppressor diode
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## 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 solid	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

### 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 <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

## 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
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 (observe temperature derating)

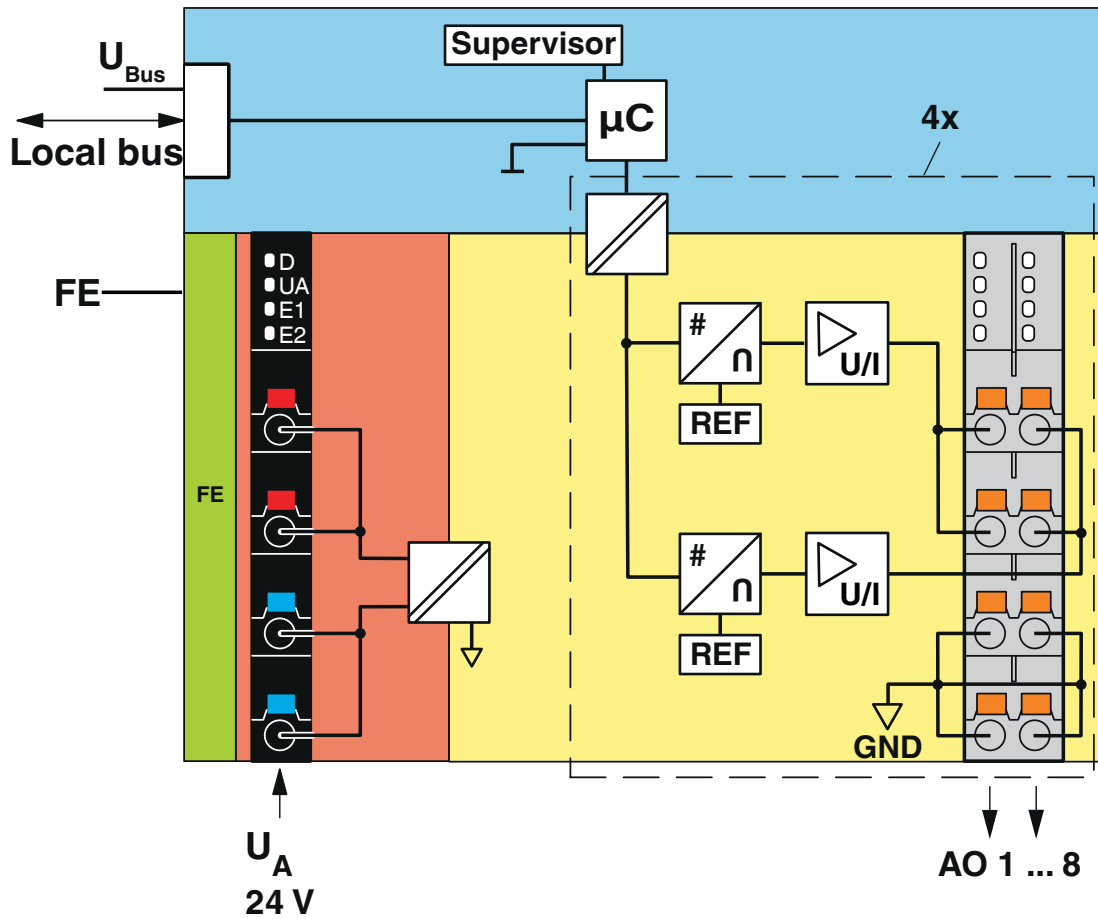
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## Drawings

Block diagram



Internal wiring of the terminal points

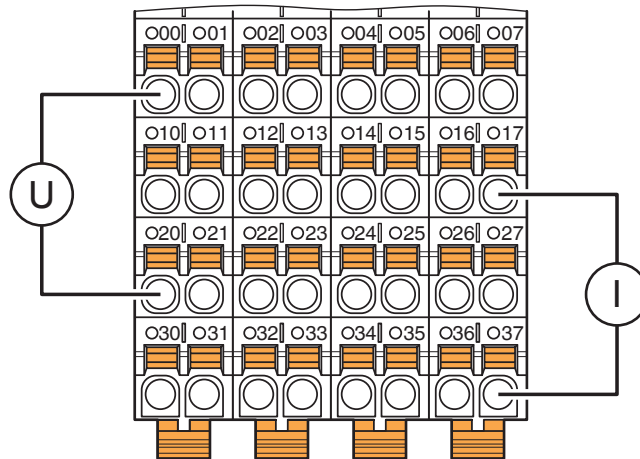
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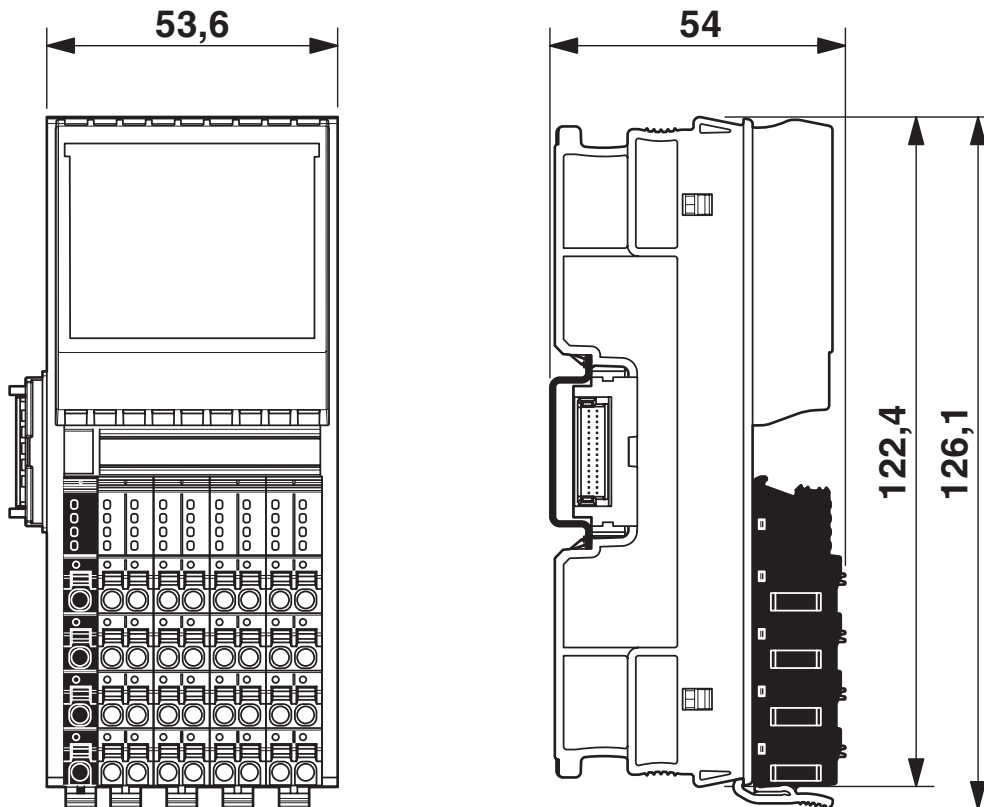


Connection diagram



Connection for voltage and current output

Dimensional drawing



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## Approvals



**EAC**

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



**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

**BSH**

Approval ID: 840



**RINA**

Approval ID: ELE283021XG

**ABS**

Approval ID: 21-2187864-PDA



**Functional Safety**

Approval ID: 968/EL 916.03/17

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27242601
ECLASS-10.0.1	27242601
ECLASS-11.0	27242601
ECLASS-12.0	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

### Bus connector

Bus connector - AXL F BS F - 2688129

<https://www.phoenixcontact.com/pc/products/2688129>

Axioline F bus base module for housing type F



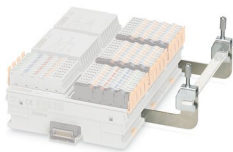
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### Shield connection

Shield connection - AXL SHIELD SET - 2700518

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

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



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## Zack marker strip

Zack marker strip - ZB 20,3 AXL UNPRINTED - 0829579

<https://www.phoenixcontact.com/pc/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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## Zack Marker strip, flat

Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580

<https://www.phoenixcontact.com/pc/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 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50

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## Insert label

Insert label - EMT (35X46)R - 0801604

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



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

## Function block

Function block - SAFE AI - 2400057

<https://www.phoenixcontact.com/pc/products/2400057>



Function block library for safety-related analog value acquisition with standard I/O modules. **Please contact the safety hotline (+49 5281 9-462777) before ordering the SAFE AI article.**

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