

## I/O module - AXL F AI2 AO2 1H - 2702072

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's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Axioline F, Analog I/O module, Analog inputs: 2, 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 method: 2-wire, Analog outputs: 2, 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 method: 2-wire, 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 and output analog voltage and current signals.

### Why buy this product

- 2 analog differential input channels
- Connection of sensors in 2-wire technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- 2 analog outputs
- Connection of actuators in 2-wire technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- Process data update < 150  $\mu$ s
- Device rating plate stored
- Diagnostic and status indicators

### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 933124
GTIN	4046356933124
Weight per Piece (excluding packing)	220.000 g
Custom tariff number	85389091
Country of origin	Germany

## I/O module - AXL F AI2 AO2 1H - 2702072

### Technical data

#### Dimensions

Width	35 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth is valid when a TH 35-7.5 DIN rail is used (according to EN 60715).

#### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
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)
Degree of protection	IP20

#### Connection data

Designation	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 solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

#### General

Mounting type	DIN rail
Net weight	197 g
Note on weight specifications	with connectors and bus base module

#### Interfaces

Designation	Axioline F local bus
No. of channels	2
Connection method	Bus base module
Transmission speed	100 Mbps

#### Axioline potentials

## I/O module - AXL F AI2 AO2 1H - 2702072

### Technical data

#### Axioline potentials

Designation	Communications power $U_{Bus}$
Supply voltage	5 V DC (via bus base module)
Current consumption	typ. 120 mA
	max. 150 mA
Power consumption	typ. 0.6 W
	max. 0.75 W
Designation	Supply for analog modules $U_A$
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	typ. 40 mA
	max. 80 mA
Power consumption	max. 1.92 W
	typ. 1.56 W (at $U_{Bus}$ and $U_A$ )
	max. 2.67 W (at $U_{Bus}$ and $U_A$ )
Type of protection	Surge protection of the supply voltage
	Polarity reversal protection of the supply voltage
	Transient protection
Protective circuit/component	electronic (35 V, 0.5 s)
	Polarity protection diode
	Suppressor diode

#### Analog inputs

Description of the input	Differential inputs, voltage or current can be chosen separately
Input name	Analog inputs
Number of inputs	2
Connection method	Push-in connection
Connection technology	2-wire
Note regarding the connection technology	Shielded, twisted pair
A/D conversion time	2 $\mu$ s
Resolution A/D	16 bit
Limit frequency (3 dB)	30 Hz
	12 kHz
Type of protection	Transient protection of inputs
Protective circuit/component	Suppressor diode
Data formats	IB IL, S7-compatible, standardized representation
Measured value representation	16 bits (15 bits + sign bit)
Current input signal	0 mA ... 20 mA

## I/O module - AXL F AI2 AO2 1H - 2702072

### Technical data

#### Analog inputs

	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)
Common mode voltage range signal - ground	-50 V DC ... 50 V DC
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)

#### Analog outputs

Number of outputs	2
Connection method	Push-in connection
Connection technology	2-wire
Note regarding the connection technology	Shielded, twisted pair
Output name	Analog outputs
D/A resolution	16 bit
Type of protection	Short-circuit and overload protection
	Transient protection
Protective circuit/component	Electronic
	Suppressor diode
Data formats	IB IL, S7-compatible, standardized representation
Representation of output values	16 bits (15 bits + sign)
Process data update	150 μs
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	-20 mA ... 20 mA
Load/output load current output	≤ 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
Precision	typ. 0.1 % (of output range final value)

#### Electrical isolation

Test section	5 V communications power (logic), 24 V supply (I/O) 500 V AC 50 Hz 1 min.
--------------	---

# I/O module - AXL F AI2 AO2 1H - 2702072

## Technical data

### Electrical isolation

	5 V supply (logic)/analog inputs and outputs 500 V AC 50 Hz 1 min.
	5 V supply (logic)/functional earth ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O)/analog inputs and outputs 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional earth ground 500 V AC 50 Hz 1 min.
	Analog inputs and outputs/functional earth ground 500 V AC 50 Hz 1 min.

### Standards and Regulations

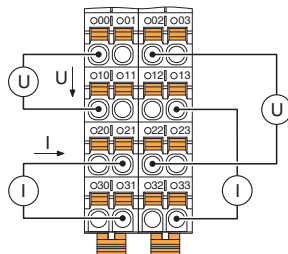
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
Protection class	III, IEC 61140, EN 61140, VDE 0140-1

### Environmental Product Compliance

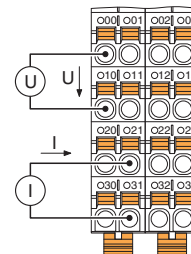
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

Connection diagram



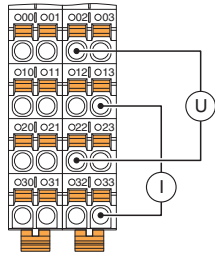
Connection diagram



Connection for voltage and current measurement

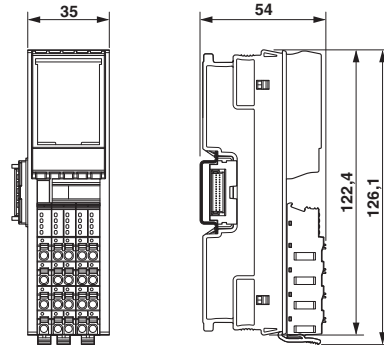
# I/O module - AXL F AI2 AO2 1H - 2702072

Connection diagram

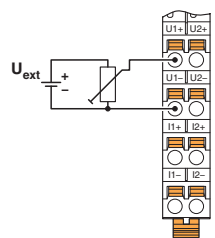


Connection for voltage and current output

Dimensional drawing

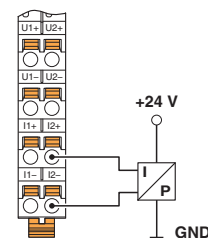


Connection diagram



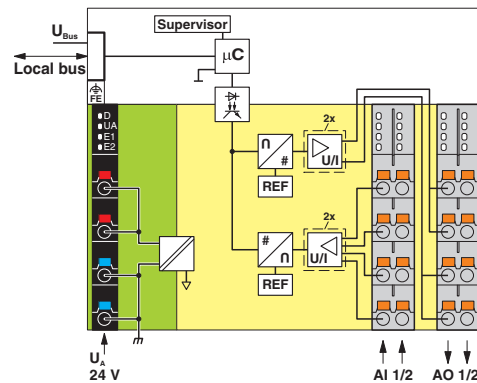
Connection of potentiometric position sensors

Connection diagram



Passive pressure sensor at a differential current input

Block diagram



## Classifications

eCl@ss

eCl@ss 5.1	27242601
eCl@ss 6.0	27242601

# I/O module - AXL F AI2 AO2 1H - 2702072

## Classifications

### eCl@ss

eCl@ss 8.0	27242601
eCl@ss 9.0	27242601

### ETIM

ETIM 5.0	EC001596
ETIM 6.0	EC001596

### UNSPSC

UNSPSC 13.2	32151602
-------------	----------

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / BSH / RINA / NK / BSH / cULus Listed

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
-----------	--	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
------------	--	---	---------------

BSH	<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
-----	---	-----

RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE0078216XG
------	--	---	--------------

## I/O module - AXL F AI2 AO2 1H - 2702072

### Approvals

NK	<b>ClassNK</b>	<a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>	14A006
----	----------------	---	--------

BSH		<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
-----	--	---	-----

cULus Listed			
--------------	--	--	--

### Accessories

#### Accessories

#### Device marking

Insert label - EMT (35X28)R - 0801602



Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, mounting type: snapped into marker carrier, lettering field size: 35 x 28 mm

---

#### DIN rail connector

Bus connector - AXL F BS H - 2700992



Axiline F bus base module for housing type H

---

#### Mounting material

Shield connection - AXL SHIELD SET - 2700518



Axiline shield connection set (contains 2 busbar holders and 2 SK 5 shield connection clamps)



## I/O module - AXL F AI2 AO2 1H - 2702072

### Accessories

#### Terminal marking

Zack marker strip - ZB 20,3 AXL UNPRINTED - 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

---

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



Zack marker strip, flat, in 10 mm pitch, unprinted, 10-section, for individual labeling with M-PEN 0,8, X-PEN, or CMS-P1-PLOTTER

---

---