

## I/O module - AXL F AO4 XC 1H - 2702153

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Axioline F XC, Analog output module, Analog outputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection method: 2-wire, transmission speed in the local bus: 100 Mbps, Extreme conditions version, degree of protection: IP20, including bus base module and Axioline F connectors

The figure shows the standard item

### 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

- ✓ 4 analog output channels for the connection of either voltage or current signals
- ✓ Bipolar voltage outputs, unipolar current outputs
- ✓ Connection of actuators in 2-wire technology
- ✓ Voltage ranges: 0 V ... 10 V, ±10 V, 0 V ... 5 V, ±5 V
- ✓ Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA
- ✓ Short-circuit-proof outputs
- ✓ No derating in all ranges
- ✓ Short signal rise times
- ✓ Driving of high loads
- ✓ 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



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 991315
GTIN	4046356991315

### Technical data

#### Dimensions

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## 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 (Standard)
	-40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.)
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	Axoline F connector
Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axoline 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	199 g
Note on weight specifications	with connectors and bus base module

### Interfaces

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

### Axoline potentials

Designation	Axoline F local bus supply ( $U_{Bus}$ )
Supply voltage	5 V DC (via bus base module)

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### Technical data

#### Axioline potentials

Current consumption	typ. 120 mA
	max. 150 mA
Designation	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 consumption	typ. 60 mA (4 voltage channels, 10 V output)
	max. 85 mA (4 voltage channels, 10 V output)
	max. 110 mA (4 current channels, 20 mA output, 500 Ω load)
	max. 125 mA (4 current channels, 24 mA output, 500 Ω load)
Power consumption	max. 3 W (at U <sub>A</sub> )
	typ. 2.04 W (at U <sub>Bus</sub> and U <sub>A</sub> )
	max. 3.75 W (at U <sub>Bus</sub> and U <sub>A</sub> )
Type of protection	Surge protection of the supply voltage
	Polarity reversal protection of the supply voltage
	Transient protection

#### Analog outputs

Number of outputs	4
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
Representation of output values	16 bits (15 bits + sign)
Process data update	140 μs
Current output signal	0 mA ... 20 mA
	4 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	≥ 1 kΩ
Precision	typ. 0.1 % (of output range final value)

#### Electrical isolation

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## Technical data

### Electrical isolation

Test section	5 V communications power (logic), 24 V supply (I/O) 500 V AC 50 Hz 1 min.
	5 V supply (logic)/analog 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 outputs 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional earth ground 500 V AC 50 Hz 1 min.
	Analog outputs/functional earth ground 500 V AC 50 Hz 1 min.

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Approvals

### Approvals

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Approvals

DNV GL / KR / NK / BSH / RINA / UL Listed / cUL Listed / LR / PRS / BV / cULus Listed

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### Ex Approvals

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00000DF
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KR		<a href="http://www.krs.co.kr/eng/main/main.aspx">http://www.krs.co.kr/eng/main/main.aspx</a>	HMB17372-AC002
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NK		<a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>	14A006
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BSH		<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
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## Approvals

RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE256518XG
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
LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	14-20019
PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/2239/880590/19
BV		<a href="http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials">http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials</a>	36433/B0 BV
cULus Listed			

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