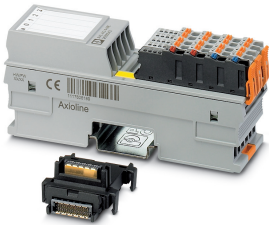


## I/O module - AXL F AO4 1H - 2688527

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Axioline F, 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 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

- ✓ 4 analog output channels for the connection of either voltage or current signals
- ✓ Bipolar voltage outputs, unipolar current outputs
- ✓ Connection of actuators in 2-conductor 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



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 744256
GTIN	4046356744256
Weight per Piece (excluding packing)	145.000 g
Weight per piece (including packing)	197.000 g
Custom tariff number	85389091
Country of origin	Germany
Sales Key	O1 - Automation Systems
Note	Made to Order (non-returnable)

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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
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
Color	traffic grey A RAL 7042
Net weight	145 g
Note on weight specifications	with connectors and bus base module
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Mounting position	any (no temperature derating)

### Interfaces

Designation	Axioline F local bus
Number	2
Connection method	Bus base module
Transmission speed	100 Mbps

### Axioline potentials

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## Technical data

### Axioline potentials

Designation	Axioline F local bus supply ( $U_{Bus}$ )
Supply voltage	5 V DC (via bus base module)
Current consumption	typ. 120 mA
	max. 150 mA
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. 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 $\Omega$ load)
	max. 125 mA (4 current channels, 24 mA output, 500 $\Omega$ load)
Power consumption	max. 3 W (at $U_A$ )
Protective circuit	Surge protection electronic (35 V, 0.5 s)
	Reverse polarity protection Polarity protection diode
	Transient protection Suppressor diode
Power consumption	typ. 2.04 W (at $U_{Bus}$ and $U_A$ )
	max. 3.75 W (at $U_{Bus}$ and $U_A$ )

### Analog outputs

Number of outputs	4
Connection method	Push-in connection
Connection technology	2-conductor
Note regarding the connection technology	shielded, twisted pair
Output name	Analog outputs
D/A converter 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 $\mu$ s
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Load/output load current output	$\leq$ 500 $\Omega$
Voltage output signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V
Load/output load voltage output	$\geq$ 1 k $\Omega$
Precision	typ. 0.1 % (of output range final value)

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## Technical data

### Electrical isolation

Test section	5 V supply of the local bus ( $U_{Bus}$ ) / 24 V supply (I/Os) 500 V AC 50 Hz 1 min.
	5 V supply of the local bus ( $U_{Bus}$ )/analog outputs 500 V AC 50 Hz 1 min.
	5 V supply of the local bus ( $U_{Bus}$ ) / functional 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 ground 500 V AC 50 Hz 1 min.
	Analog outputs/functional ground 500 V AC 50 Hz 1 min.

### Standards and Regulations

Immunity to ESD	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 6 kV contact discharge, 8 kV air discharge
Immunity to EF	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity to surge	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, supply lines DC: $\pm 0.5$ kV/ $\pm 0.5$ kV (symmetrical/asymmetrical), $\pm 1$ kV to shielded I/O cables
Immunity to conducted interference	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test according to EN 61000-6-3/IEC 61000-6-3 Class B
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)
Overvoltage category	II (IEC 60664-1, EN 60664-1)

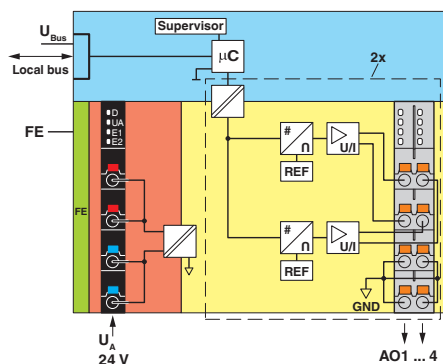
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

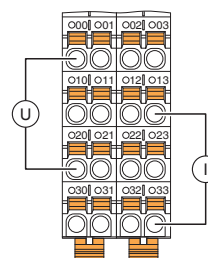
## Drawings

# I/O module - AXL F AO4 1H - 2688527

Block diagram



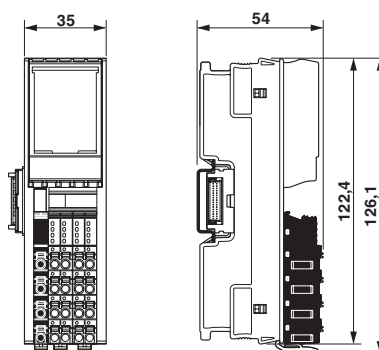
Connection diagram



Connection for voltage and current output

Internal wiring of the terminal points

Dimensional drawing



## Classifications

### eCI@ss

eCI@ss 10.0.1	27242601
eCI@ss 11.0	27242601
eCI@ss 4.0	27240400
eCI@ss 4.1	27240400
eCI@ss 5.0	27242200
eCI@ss 5.1	27242600
eCI@ss 6.0	27242600
eCI@ss 7.0	27242601
eCI@ss 9.0	27242601

### ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 6.0	EC001596
ETIM 7.0	EC001596

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## Classifications

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

## Approvals

### Approvals

#### Approvals

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

#### Ex Approvals


### Approval details

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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ABS		<a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>	21-2187864-PDA
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BSH			840
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RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE283021XG
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LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	LR2001902TA
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## Approvals

PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/1020/880590/21
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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/B4 BV
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EAC			EAC-Zulassung
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DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00000DF
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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
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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
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cULus Listed			
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## Accessories

### Accessories

### Device marking

Insert label - EMT (35X28)R - 0801602



Insert label, 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 28 mm, Number of individual labels: 500

### DIN rail connector

## I/O module - AXL F AO4 1H - 2688527

### Accessories

Bus connector - AXL F BS H - 2700992



Axioline F bus base module for housing type H

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### Shield connection

Shield connection - AXL SHIELD SET - 2700518



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

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### 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

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap in, 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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