

## I/O module - AXL F DI16/4 2F - 2688022

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Axioline F, Digital input module, Digital inputs: 16, 24 V DC, connection method: 4-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 digital signals.  
The filter times of the inputs can be adjusted to increase noise immunity.  
Filter times of 100 µs enable the user to implement a counter function with a maximum input frequency of 5 kHz in the application.

### Why buy this product

- ✓ 16 digital inputs according to EN 61131-2 type 1 and type 3
- ✓ 24 V DC, 2.4 mA
- ✓ Connection of sensors in 2, 3, and 4-wire technology
- ✓ Minimum update time of < 100 µs
- ✓ Filter times can be adjusted in two increments: < 100 µs or 500 µs
- ✓ Maximum input frequency: 5 kHz
- ✓ Device rating plate stored
- ✓ Diagnostic and status indicators



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 501606
GTIN	4046356501606
Weight per Piece (excluding packing)	231.000 g
Custom tariff number	85389091
Country of origin	Germany

### Technical data

#### Dimensions

Width	53.6 mm
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## Technical data

### Dimensions

Height	129.9 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	231 g
Note on weight specifications	with connectors and bus base module
Diagnostics messages	I/O supply failure Yes
	Overload of group 1 Yes
	Overload of group 2 Yes

### Interfaces

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

### Axioline potentials

Designation	Supply of the Axioline F local bus U <sub>BUS</sub>
Supply voltage	5 V DC (via bus base module)

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## Technical data

### Axioline potentials

Current consumption	max. 120 mA
Power consumption	max. 600 mW
Designation	Supply for digital input modules U <sub>I</sub>
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	max. 4 A (2 A or each group of 8 inputs)
Power consumption	max. 120.8 W (Of which 800 mW with internal losses)
Type of protection	Surge protection of the supply voltage
	Polarity reversal protection of the supply voltage
Protection	max. 8 A (polarity reversal protection up to 5 A)

### Digital inputs

Input name	Digital inputs
Description of the input	EN 61131-2 types 1 and 3
Connection method	Push-in connection
Connection technology	4-wire
Number of inputs	16
Type of protection	Polarity reversal protection of the inputs
Input filter time	500 µs (default)
Input voltage range "0" signal	-3 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Nominal input current at U <sub>IN</sub>	2.4 mA

### 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)/functional earth ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / 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

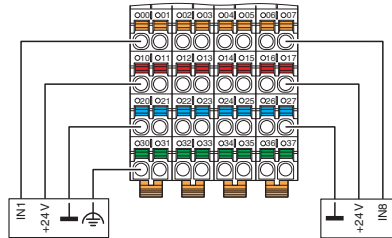
### Environmental Product Compliance

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

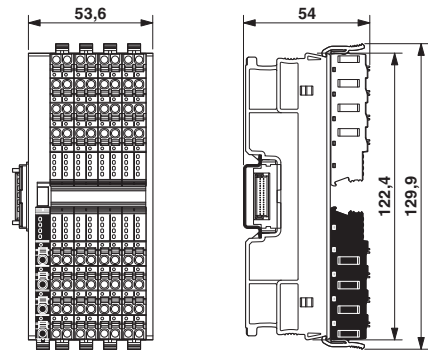
## Drawings

# I/O module - AXL F DI16/4 2F - 2688022

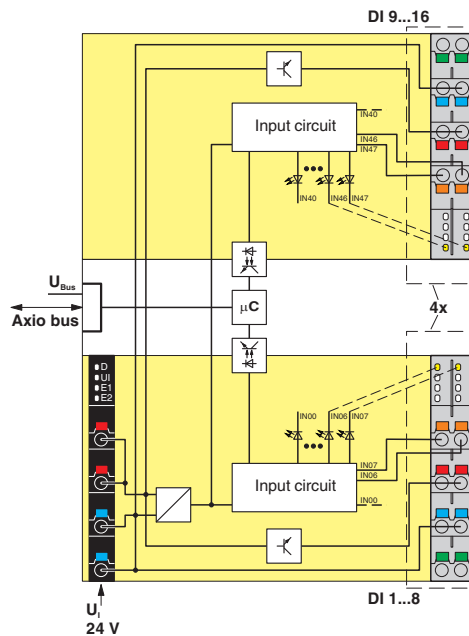
Connection diagram



Dimensional drawing



Block diagram



Internal wiring of the terminal points

## Classifications

eCl@ss

eCl@ss 4.0	27240404
eCl@ss 4.1	27240404
eCl@ss 5.0	27242204
eCl@ss 5.1	27242604
eCl@ss 6.0	27242604
eCl@ss 7.0	27242604
eCl@ss 8.0	27242604
eCl@ss 9.0	27242604

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## Classifications

### ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599
ETIM 6.0	EC001599

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602

## Approvals

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#### Approvals

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

#### Ex Approvals

### Approval details

BSH		<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
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/A2 BV
LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	14-20019
ABS		<a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>	17-HG1669996-PDA
NK		<a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>	14A006

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## Approvals

EAC			EAC-Zulassung
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
DNV GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAA00000DF
PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/2106/880590/16
RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE0078216XG
BSH		<a href="http://www.bsh.de/de/index.jsp">http://www.bsh.de/de/index.jsp</a>	840
KR		<a href="http://www.krs.co.kr/eng/main/main.aspx">http://www.krs.co.kr/eng/main/main.aspx</a>	HMB17372-AC002
cULus Listed			

## Accessories

Accessories

Connector set

Connector set - AXL CNS 8L-ORBG/D/UI/E1/E2 - 2700980

Axioline F connector set (for e.g., AXL F DI16/4 2F)



DIN rail connector

## I/O module - AXL F DI16/4 2F - 2688022

### Accessories

Bus connector - AXL F BS F - 2688129



Axioline F bus base module for housing type F

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