

## I/O module - AXL F DI16/1 1H - 2688310

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Axioline F, Digital input module, Digital inputs: 16, 24 V DC, connection method: 1-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.  
 You can adjust the filter times of the inputs to increase noise immunity.  
 Filter times of 100 µs enable you to implement a counter function with a maximum input frequency of 5 kHz in the application.

### Your advantages

- ✓ 16 digital inputs according to EN 61131-2 type 1 and type 3
- ✓ 24 V DC, 2.4 mA
- ✓ Connection of sensors in single-wire technology
- ✓ Minimum update time of < 100 µs
- ✓ Filter times can be adjusted in three increments: < 100 µs, 1000 µs or 3000 µs
- ✓ Maximum input frequency: 5 kHz
- ✓ Device rating plate stored



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 606455
GTIN	4046356606455

### Technical data

#### Dimensions

Caption	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).

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## Technical data

### 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.
	Applications with UL approval: only use copper conductors.
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	181.6 g
Note on weight specifications	with connectors and bus base module
Mounting position	any (no temperature derating)

### Interfaces

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

### Axioline potentials

Designation	Axioline F local bus supply (U <sub>Bus</sub> )
Supply voltage	5 V DC (via bus base module)
Current consumption	max. 120 mA (up to HW 01)
	max. 60 mA (as of HW 02)
Power consumption	max. 600 mW (up to HW 01)
	max. 300 mW (as of HW 02)
Designation	Supply for digital input modules (U <sub>i</sub> )

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## Technical data

### Axioline potentials

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	max. 20 mA
Power consumption	max. 480 mW
Protective circuit	Surge protection electronic (35 V, 0.5 s)
	Reverse polarity protection parallel diode; with external 5 A fuse (only for commissioning)
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	1-wire
Number of inputs	16
Protective circuit	Polarity reversal protection of the inputs parallel diode (30 V, 5 s)
Nominal input voltage $U_{IN}$	24 V DC
Nominal input current at $U_{IN}$	2.4 mA
Input filter time	3000 $\mu$ s (Default)
	1000 $\mu$ s
	< 100 $\mu$ s
Input voltage range "0" signal	-3 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC

### 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 ( $U_{BUS}$ ) / functional ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O)/functional 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)

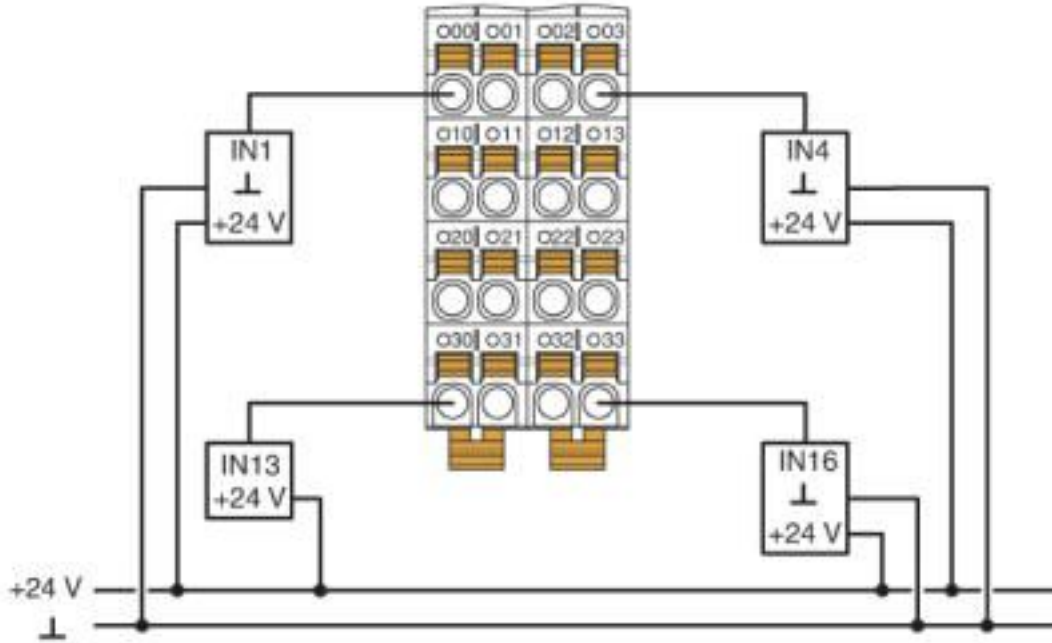
### Environmental Product Compliance

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 DI16/1 1H - 2688310

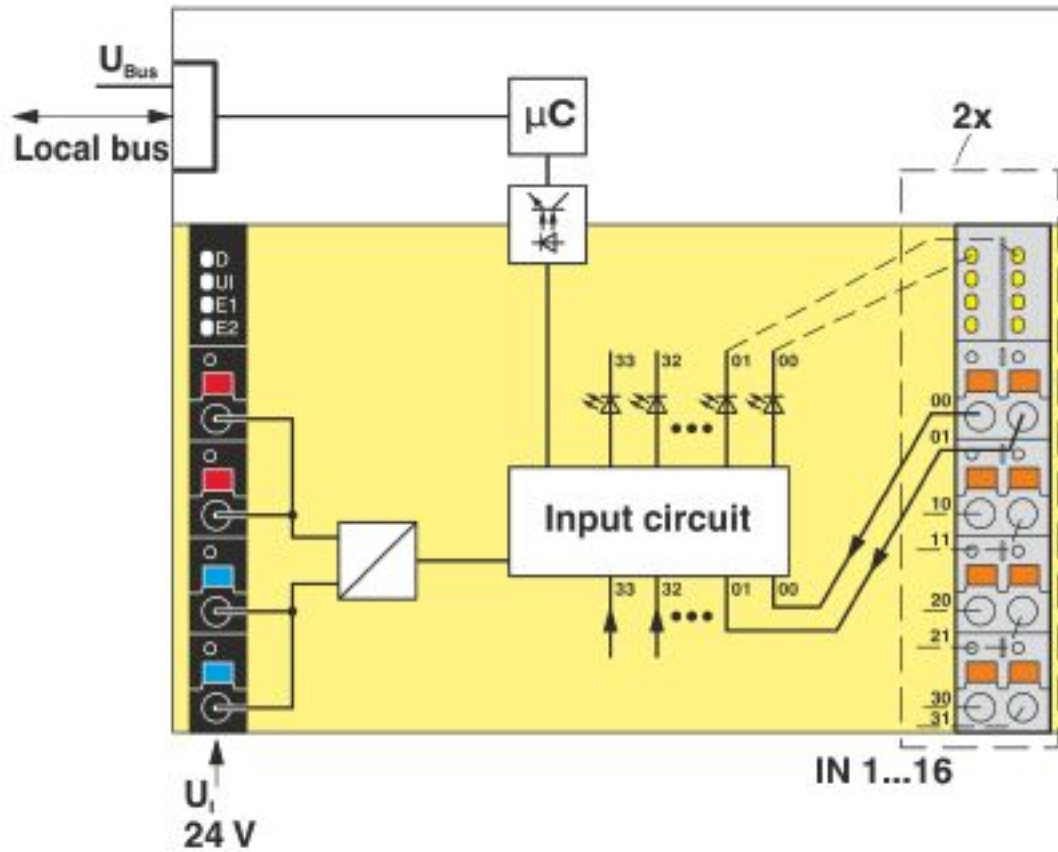
Connection diagram



Connection example

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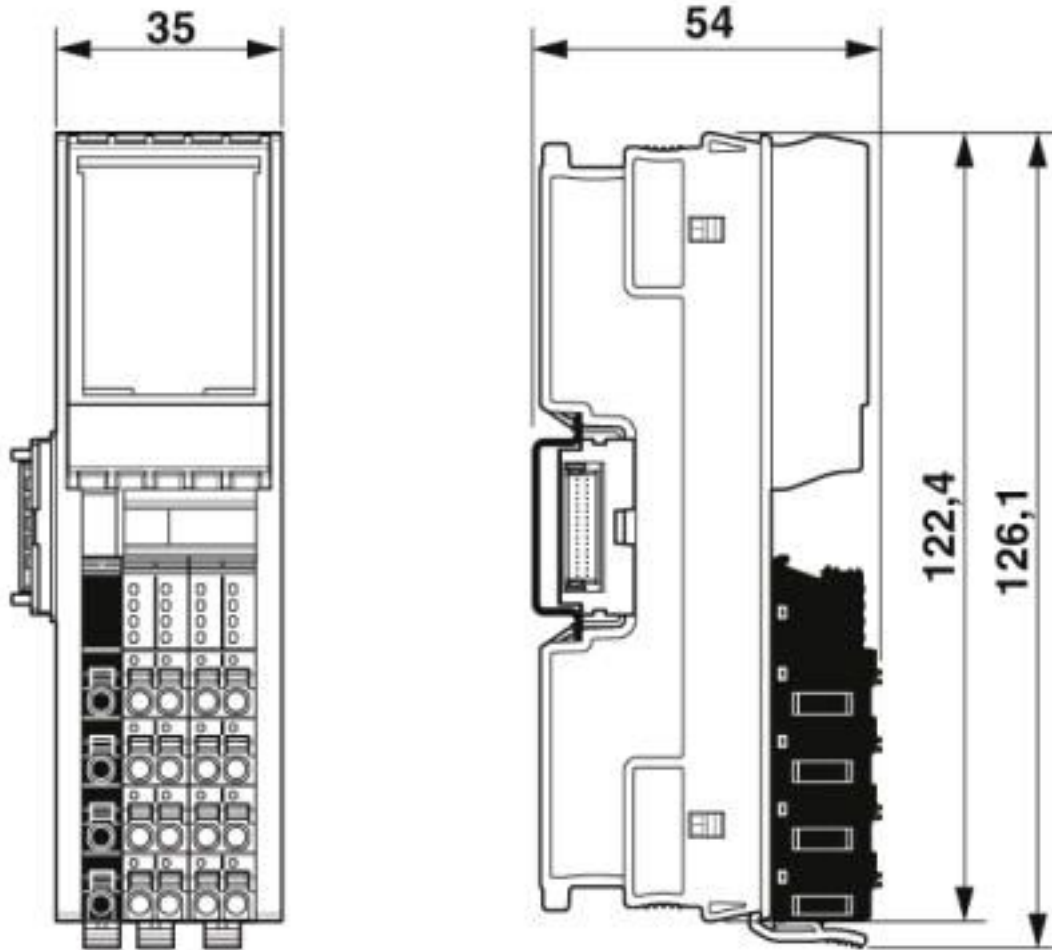
Block diagram



Internal wiring of the terminal points

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Dimensional drawing



Dimensions

Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	27242200
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 8.0	27242604
eCl@ss 9.0	27242604

ETIM

ETIM 3.0	EC001599
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## Classifications

### ETIM

ETIM 4.0	EC001599
ETIM 5.0	EC001599
ETIM 6.0	EC001599
ETIM 7.0	EC001599

### 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

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#### Approvals

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

#### 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>	18-HG1767360-PDA
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BSH	840
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## Approvals

RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE030120XG
LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	LR2001902TA
PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/2239/880590/19
NK		<a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>	14A006
ABS		<a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>	18-HG1767360-PDA
RINA		<a href="http://www.rina.org/en">http://www.rina.org/en</a>	ELE030120XG
BSH			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
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/B1 BV
EAC			EAC-Zulassung
EAC			EAC-Zulassung



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## Approvals

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00000DF
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
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="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00000DF

## 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: snapped into marker carrier, lettering field size: 35 x 28 mm, Number of individual labels: 500

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## DIN rail connector

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### Accessories

Bus connector - AXL F BS H - 2700992



Axioline F bus base module for housing type H

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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 into flat marker groove, 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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[5053S-AE](#)