

## 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, 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  $\mu$ s enable you 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 single-wire technology
- Minimum update time of < 100  $\mu$ s
- Filter times can be adjusted in three increments: < 100  $\mu$ s, 1000  $\mu$ s or 3000  $\mu$ s
- Maximum input frequency: 5 kHz
- Device rating plate stored
- Diagnostic and status indicators



### Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 STK   |
| GTIN         | <br>4 046356 606455 |
| GTIN         | 4046356606455   |

### 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). |

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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. |
| 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                    | 185.5 g                             |
| Note on weight specifications | with connectors and bus base module |
| Diagnostics messages          | I/O supply failure Yes              |

### 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  |
| 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. 20 mA   |
| Power consumption    | max. 480 mW  |

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## Technical data

### Axioline potentials

|                    |  |
|--------------------|--|
| 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                    | 1-wire                                     |
| Number of inputs                         | 16   |
| Type of protection                       | Polarity reversal protection of the inputs |
| Input filter time                        | 3000 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                            |

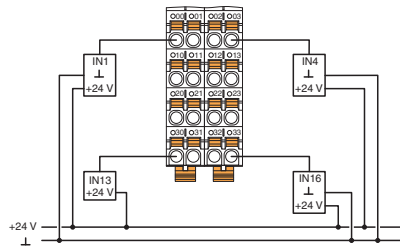
### Environmental Product Compliance

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

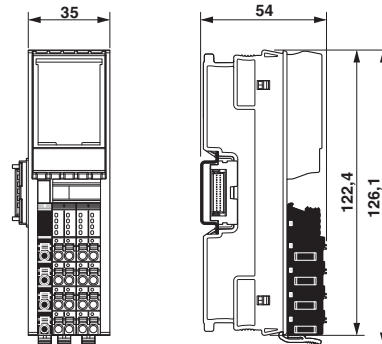
## Drawings

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

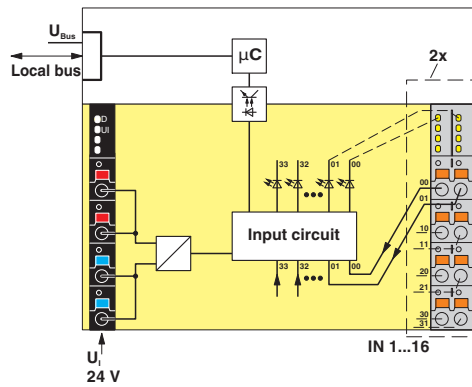
Connection diagram



Dimensional drawing



Block diagram



Internal wiring of the terminal points

## Approvals

Approvals

Approvals

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

Ex Approvals

## Approval details

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

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

## Approvals

|            |  |   |               |
|------------|--|---|---------------|
| 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 |
|------------|--|---|---------------|

|     |  |  |               |
|-----|--|--|---------------|
| EAC |  |  | EAC-Zulassung |
|-----|--|--|---------------|

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

|    |  |   |        |
|----|--|---|--------|
| NK |  | <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 |
|-----|--|---|-----|

|        |  |   |            |
|--------|--|---|------------|
| DNV GL |  | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a> | TAA00000DF |
|--------|--|---|------------|

|     |  |   |                  |
|-----|--|---|------------------|
| ABS |  | <a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a> | 17-HG1669996-PDA |
|-----|--|---|------------------|

|    |  |   |                |
|----|--|---|----------------|
| 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 |  |  |  |
|--------------|--|--|--|

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