

## I/O module - AXL F DI32/1 1F - 2688035

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Axioline F, Digital input module, Digital inputs: 32, 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 µs enable you to implement a counter function with a maximum input frequency of 5 kHz in the application.

### Why buy this product

- ✓ 32 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
- ✓ Diagnostic and status indicators



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 046356 501590 |
| GTIN         | 4046356501590                                                                                           |

### Technical data

#### Dimensions

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| Width              | 53.6 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                    | 238.3 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. 50 mA                                                         |
| Power consumption    | max. 1.2 W                                                         |

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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                  | 32                                         |
| 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 $U_{IN}$ | 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                            |

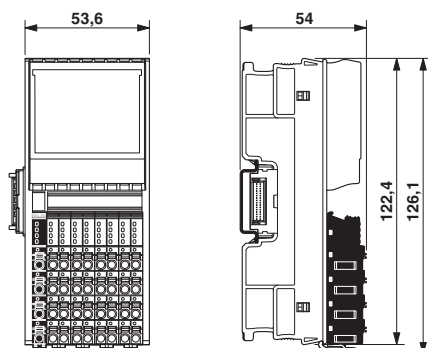
### Environmental Product Compliance

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

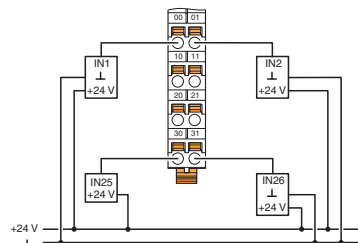
## Drawings

## I/O module - AXL F DI32/1 1F - 2688035

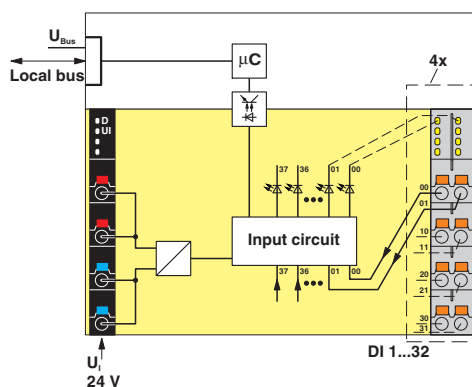
Dimensional drawing



Connection diagram



Block diagram



Internal wiring of the terminal points

### Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

UL Listed



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

FILE E 238705

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### 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     |
| LR           |    | <a href="http://www.lr.org/en">http://www.lr.org/en</a>                                                                                                                                                                       | 14-20019          |
| 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       |
| ABS          |                                                                                     | <a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>                                                                                                                       | 18-HG1767360-PDA  |
| EAC          |   |                                                                                                                                                                                                                               | EAC-Zulassung     |
| 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 |  |                                                                                                                                                                                                                               |                   |

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