

AXL F DO16/1 1H - Digital module



2688349

<https://www.phoenixcontact.com/us/products/2688349>

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Axioline F, Digital output module, Digital outputs: 16, 24 V DC, 500 mA, connection technology: 1-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 digital signals. The outputs are protected against short circuit and overload.

Your advantages

- 16 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Minimum update time of < 100 μ s
- Device rating plate stored

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2688349 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI232 |
| GTIN | 4046356606530 |
| Weight per piece (including packing) | 173.1 g |
| Weight per piece (excluding packing) | 134 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

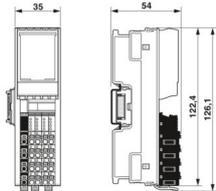
AXL F DO16/1 1H - Digital module

2688349

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Technical data

Dimensions

| | |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width | 35 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Note on dimensions | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

Notes

| | |
|---------------------|-------------------------|
| Note on application | |
| Note on application | Only for industrial use |

Interfaces

| | |
|----------------------|-----------------|
| Axioline F local bus | |
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

| | |
|-----------------------------|--------|
| Module | |
| ID code (hex) | none |
| Process data channel | 16 bit |
| Input address area | 0 Byte |
| Output address area | 2 Byte |
| Required parameter data | 1 Byte |
| Required configuration data | 6 Byte |

Output data

| | |
|-----------------------|---------------------------------------------------------------|
| Digital: | |
| Output name | Digital outputs |
| Connection method | Push-in connection |
| Connection technology | 1-conductor |
| Number of outputs | 16 |
| Protective circuit | Short-circuit protection, overload protection of the outputs; |

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2688349

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| | |
|-------------------------------------------------------------------|-------------------------------------------------------------------|
| | electronic |
| Output voltage | 24 V |
| Limitation of the voltage induced on circuit interruption | -25.8 V ... -15 V |
| Maximum output current per module | 8 A (provide external protection) |
| Nominal output voltage | 24 V DC |
| Load min. | 10 kΩ |
| Output voltage when switched off | max. 1 V |
| Output current when switched off | max. 300 μA |
| Nominal load, inductive | max. 12 VA (1.2 H, 48 Ω, with nominal voltage) |
| Nominal load, lamp | max. 12 W (at nominal voltage) |
| Nominal load, ohmic | max. 12 W (48 Ω, with nominal voltage) |
| Switching frequency | max. 10000 per second (with at least 50 mA load current) |
| | max. 1 per second (with inductive load) |
| | max. 16 per second (with nominal lamp load) |
| Reverse voltage resistance to short pulses | limited protection up to 0.5 A for 1 s |
| Behavior with overload | Shutdown with automatic restart |
| Behavior with inductive overload | Output can be destroyed |
| Signal delay | max. 100 μs (when switched on) |
| | max. 100 μs (when switched off, with at least 50 mA load current) |
| Overcurrent shut-down | as of 0.7 A |
| Output current with ground connection interrupt when switched off | < 1 mA |

Product properties

| | |
|-------------------|-----------------------------------------------------|
| Product type | I/O component |
| Product family | Axioline F |
| Type | block modular |
| Mounting position | any (no temperature derating) |
| Scope of supply | including bus base module and Axioline F connectors |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|-------------------------------------------------|--------|
| Maximum power dissipation for nominal condition | 1.15 W |
|-------------------------------------------------|--------|

Potentials: Axioline F local bus supply (U_{Bus})

| | |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 120 mA (up to HW 02) |
| | max. 60 mA (from HW 03) |

Potentials: Supply for digital output modules (U_O)

| | |
|----------------------|--------------------------------------------------------------------|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 8 A (provide external protection) |

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2688349

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| | |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; parallel diode; with external 5 A fuse (only for commissioning) |
| Electrical isolation/isolation of the voltage ranges | |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection name | Axioline F connector |
| 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 connection

| | |
|----------------------------------|---------------------------------------------|
| Connection method | Push-in connection |
| Conductor cross-section rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

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, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|------------------------------------------|---------------------------------------------------|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Degree of protection | IP20 |
| 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) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

Standards and regulations

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| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|-------------------|-------------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any (no temperature derating) |

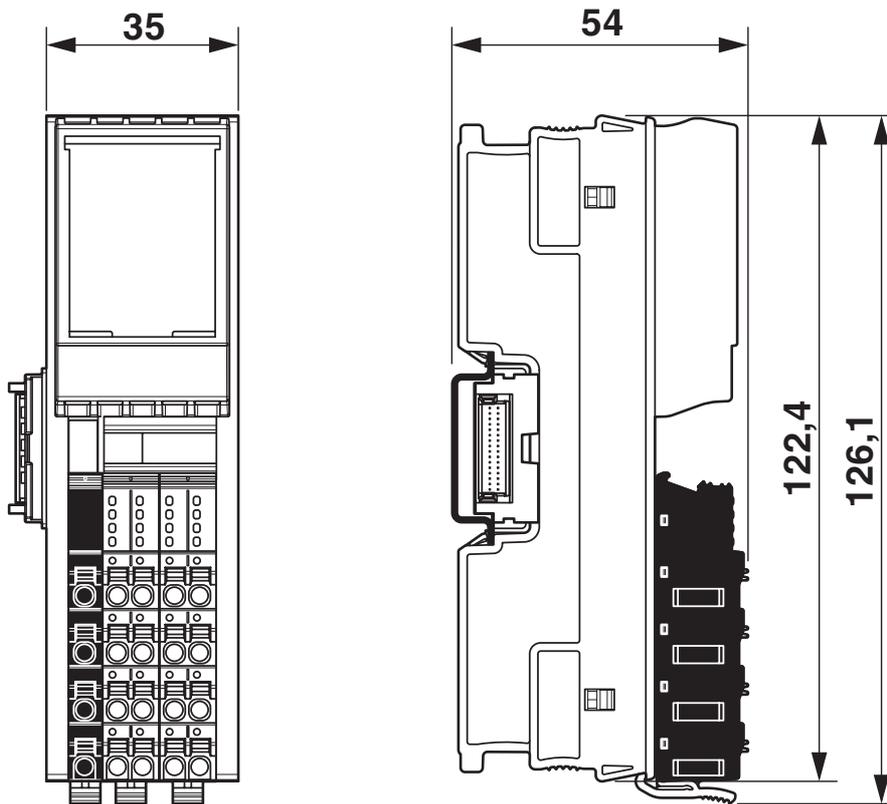
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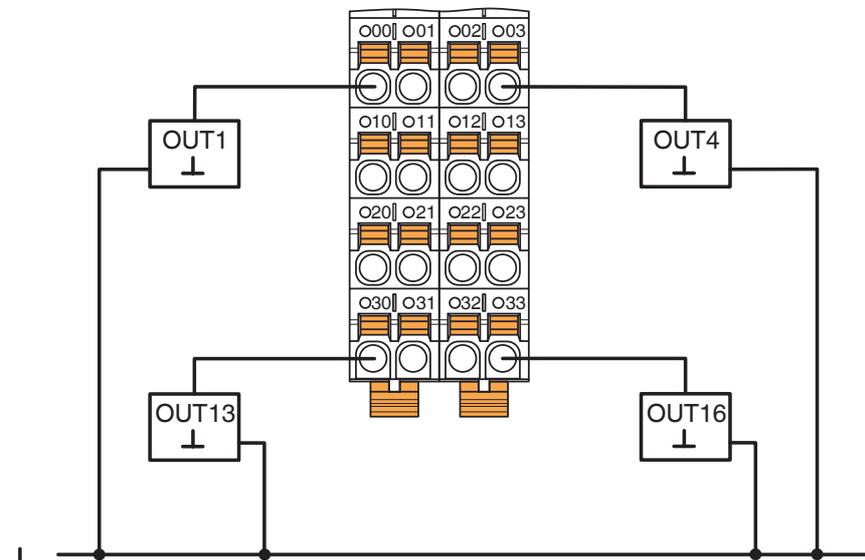
Drawings

Dimensional drawing

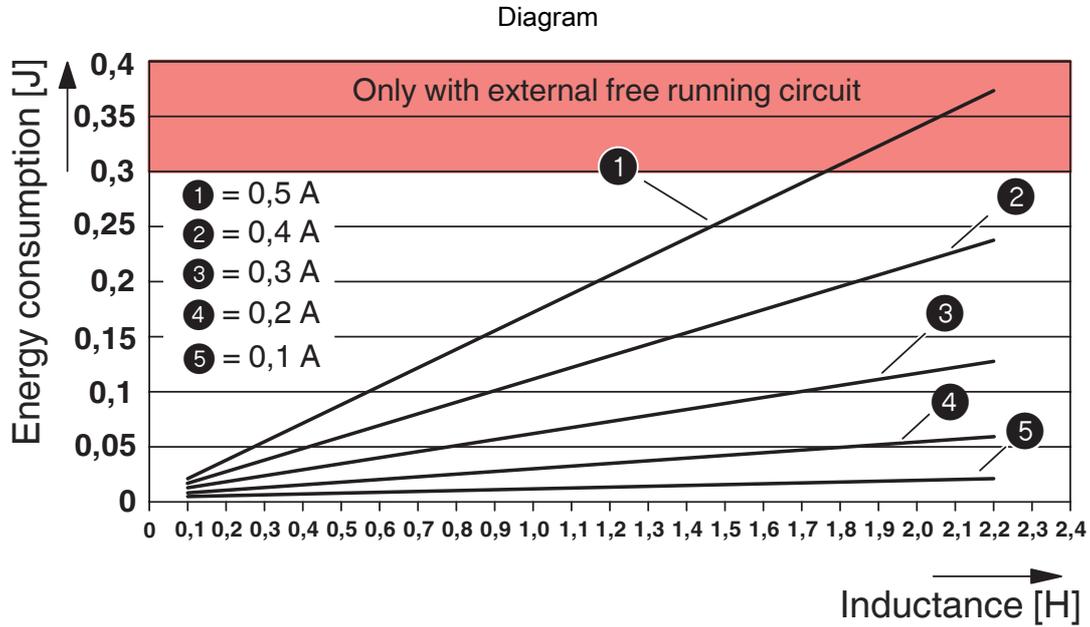


Dimensional drawing

Connection diagram



Connection example



Maximum energy consumption of the outputs when switching off inductive loads

The diagram shows the maximum amount of energy that may be fed back into the corresponding output groups (outputs 1 to 4, 5 to 8, 9 to 12, 13 to 16) for each switch off procedure when switching off an inductive load without external freewheeling circuit.

The current data refers to the ohmic DC voltage component of the inductive load.

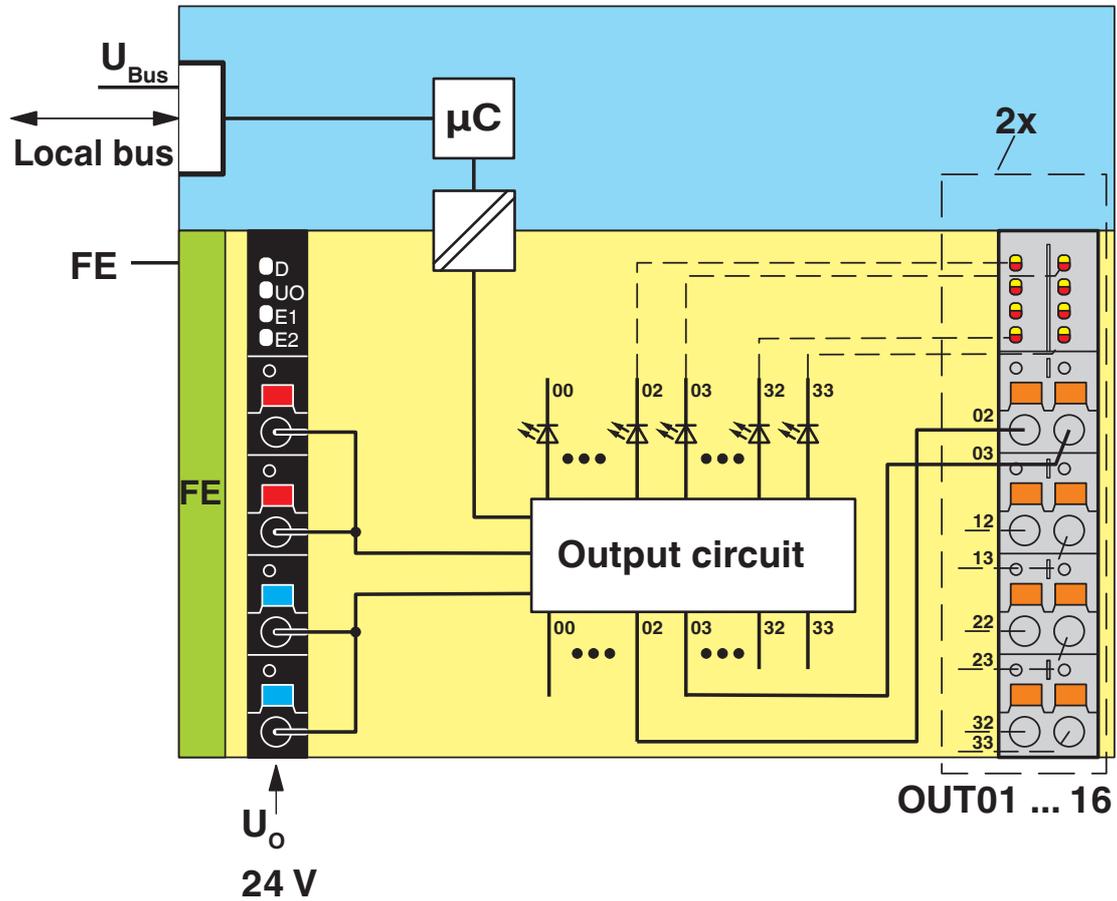
Note: Restrict freewheeling voltage to a maximum of -15 V when using an external freewheeling circuit. The external freewheeling circuit has no function in the event of a higher negative voltage.

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Block diagram



Internal wiring of the terminal points

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2688349>



DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2480202TA-02



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840



RINA

Approval ID: ELE008423XG001

ABS

Approval ID: 20-2059154-PDA



cULus Listed

Approval ID: E238705



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Approval ID: E238705

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242604 |
| ECLASS-15.0 | 27242604 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC001599 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | e92a485a-c1ae-4609-adad-5d75805029a8 |

EF3.0 Climate Change

| | |
|---------|---------------|
| CO2e kg | 15.71 kg CO2e |
|---------|---------------|

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