

AXL E PN DIO16 M12 6P - Digital module



2701511

<https://www.phoenixcontact.com/us/products/2701511>

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Axioline E, Digital I/O device, PROFINET, M12 connector, Digital inputs: 16, 24 V DC, connection technology: 4-conductor, Digital outputs: 16, 24 V DC, connection technology: 3-conductor, Plastic housing, degree of protection: IP65/IP67

Product description

The Axioline E device is designed for use within a PROFINET network. It is used to acquire and output digital signals.

Your advantages

- Connection to PROFINET network using M12 connectors (D-coded)
- Transmission speed of 100 Mbps
- Connection of digital sensors and actuators using M12connectors (A-coded)
- Diagnostic and status indicators
- Short-circuit and overload protection of the sensor supply
- IP65/IP67 degree of protection

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2701511 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR04 |
| Product key | DRI7DA |
| GTIN | 4046356763622 |
| Weight per piece (including packing) | 556.46 g |
| Weight per piece (excluding packing) | 548.5 g |
| Customs tariff number | 85176200 |
| Country of origin | DE |

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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 60 mm |
| Height | 185 mm |
| Depth | 30.5 mm |
| Drill hole spacing | 198.5 mm |
| Note on dimensions | The height is 212 mm including fixing clips. |

Notes

Note on application

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

Material specifications

| | |
|------------------|----------------------------|
| Color (Housing) | anthracite gray (RAL 7016) |
| Housing material | Pocan® |

Interfaces

PROFINET

| | |
|-------------------------------|----------------------------------|
| Number of interfaces | 2 |
| Connection method | M12 connector |
| Note on the connection method | D-coded |
| Number of positions | 4 |
| Transmission speed | 100 Mbps (with auto negotiation) |

PROFINET

| | |
|---------------------------|--|
| Equipment type | PROFINET-Device |
| System-specific protocols | PROFINET protocols LLDP PROFINET protocols MRP client PROFINET protocols DCP PROFINET protocols DCE/RPC |
| Protocols supported | SNMP v1 HTTP TFTP FTP |

Input data

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2701511

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Digital:

| | |
|-----------------------------------|--|
| Input name | Digital inputs |
| Description of the input | IEC 61131-2 types 1 and 3 |
| Number of inputs | 16 |
| Cable length | max. 30 m (to the sensor) |
| Connection method | M12 connector double occupancy |
| Connection technology | 4-conductor |
| Input voltage range "0" signal | 0 V DC ... 5 V DC |
| Input voltage range "1" signal | 11 V DC ... 30 V DC |
| Nominal input voltage U_{IN} | 24 V DC |
| Nominal input current at U_{IN} | typ. 3 mA |
| Sensor current per channel | typ. 75 mA (from U_S) |
| Total sensor current | max. 1.2 A (per device) |
| Input filter time | < 1000 μ s |
| Protective circuit | Overload protection, short-circuit protection of sensor supply |

Output data

Digital:

| | |
|---|--|
| Output name | Digital outputs |
| Connection method | M12 connector double occupancy |
| Connection technology | 3-conductor |
| Number of outputs | 16 |
| Protective circuit | Overload protection, short-circuit protection of outputs; yes |
| Output voltage | 24 V DC |
| Limitation of the voltage induced on circuit interruption | -28 V ... -17 V |
| Maximum output current per channel | 500 mA |
| Nominal output voltage | 24 V DC (from voltage U_S) |
| Output voltage range | 18 V DC ... 31.2 V DC |
| Output voltage when switched off | max. 1 V |
| Output current when switched off | max. 20 μ A |
| Nominal load, inductive | 12 VA (1.2 H, 48 Ω , with nominal voltage) |
| Nominal load, ohmic | 12 W (48 Ω , with nominal voltage) |
| Switching frequency | max. 5500 per second (with at least 50 mA load current) max. 1 per second (with inductive load) |
| Reverse voltage resistance to short pulses | Reverse voltage proof |
| Behavior with overload | Auto restart |
| Signal delay | max. 150 μ s (when switched on) max. 200 μ s (when switched off) |
| Overcurrent shut-down | min. 0.7 A |

Product properties

| | |
|----------------|---------------|
| Product type | I/O component |
| Product family | Axioline E |

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2701511

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| | |
|--------------------|-----------------|
| Type | Stand-alone |
| Special properties | Plastic housing |

Electrical properties

Potentials

| | |
|--------------------------------|------------|
| Voltage supply U_S | 24 V DC |
| Power supply at U_S | max. 4 A |
| Current consumption from U_S | typ. 8 mA |
| | max. 1.2 A |

Supply: Module electronics, sensors, and actuators

| | |
|----------------------|--|
| Designation | Module electronics, sensors and actuators (U_S) |
| Connection method | M12 connector, T-coded |
| Number of positions | 4 |
| Supply voltage | 24 V DC |
| Supply voltage range | 18 V DC ... 31.2 V DC (including all tolerances, including ripple) |
| Current consumption | typ. 190 mA \pm 15 % (at 24 V DC) |
| | max. 12 A |

Supply: Actuators

| | |
|----------------------|--|
| Designation | Supply of actuators (U_A) for additional devices |
| Connection method | M12 connector, T-coded |
| Number of positions | 4 |
| Supply voltage | 24 V DC |
| Supply voltage range | 18 V DC ... 31.2 V DC (including all tolerances, including ripple) |
| Current consumption | typ. 3 mA \pm 15 % (at 24 V DC) |
| | max. 12 A |

Electrical isolation/isolation of the voltage ranges

| | |
|--|------------------------|
| Test voltage: 24 V supply (communications power/sensor supply, digital inputs/outputs)/bus connection (Ethernet 1) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (communications power/sensor supply, digital inputs/outputs)/bus connection (Ethernet 2) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (communications power/sensor supply, digital inputs/outputs)/FE | 500 V AC, 50 Hz, 1 min |
| Test voltage: Bus connection (Ethernet 1)/FE | 500 V AC, 50 Hz, 1 min |
| Test voltage: Bus connection (Ethernet 2)/FE | 500 V AC, 50 Hz, 1 min |
| Test voltage: Bus connection (Ethernet 1)/bus connection (Ethernet 2) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (actuator supply)/24 V supply (communications power and sensor supply, digital inputs/outputs) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (actuator supply)/bus connection (Ethernet 1) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (actuator supply)/bus connection (Ethernet 2) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (actuator supply)/FE | 500 V AC, 50 Hz, 1 min |

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Connection data

| | |
|-------------------|---------------|
| Connection method | M12 connector |
|-------------------|---------------|

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Degree of protection | IP65/IP67 |
| 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) | -25 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % |
| Permissible humidity (storage/transport) | 5 % ... 95 % |

Mechanical test

| | |
|--|--|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 30g, 11 ms period, half-sine shock pulse |
| Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 10g |

Standards and regulations

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

Mounting

| | |
|---------------|----------------|
| Mounting type | Screw mounting |
|---------------|----------------|

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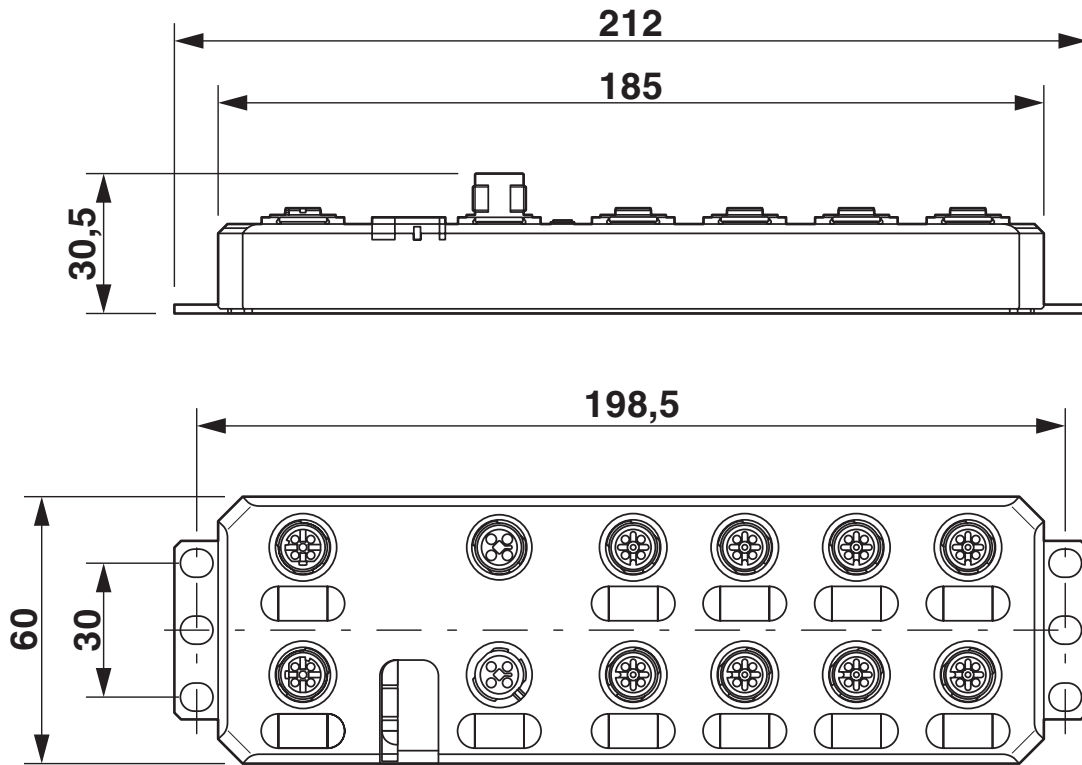


2701511

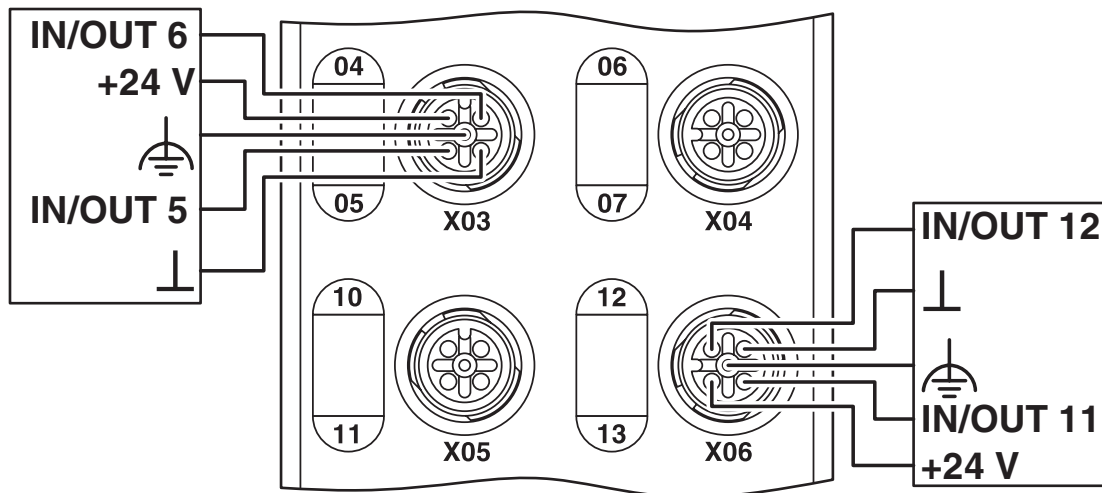
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Drawings

Dimensional drawing



Connection diagram



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Approvals

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PROFINET

Approval ID: Z12258



cULus Listed

Approval ID: E140324



cULus Listed

Approval ID: E199827

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Classifications

ECLASS

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

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001599 |
|-----------|----------|

UNSPSC

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

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Environmental product compliance

EU RoHS

| | |
|---|------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c) |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-25 |
| | 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 | 798a4cbe-dda5-4a9f-8d72-c6be49083bc3 |

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