

AXL E EC IOL8 DI4 M12 6P - Communication module



2701524

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Axioline E, EtherCAT®, M12 connector, IO-Link ports Class A: 4, connection method: M12 connector, connection technology: 3-conductor, IO-Link ports Class B: 4, connection method: M12 connector, connection technology: 3-conductor, Digital inputs at pin 2 for class A ports: 4, 24 V DC, connection technology: 3-conductor, Plastic housing, degree of protection: IP65/IP67

Product description

The Axioline E EtherCAT® IO-Link master is designed for use within an EtherCAT® network. It enables the operation of up to eight IO-Link sensors/actuators and is also used to acquire digital signals.

Your advantages

- Connection to EtherCAT® network using M12 connectors (D-coded)
- Transmission speed of 100 Mbps
- Connection of four IO-Link devices with additional digital input
- Connection of four IO-Link actuators with additional power supply
- Connection of IO-Link ports using M12connectors (A-coded, 5-pos.)
- IO-Link specification V1.1.2
- Diagnostic and status indicators
- Short-circuit and overload protection of the sensor supply
- IP65/IP67 degree of protection

Commercial data

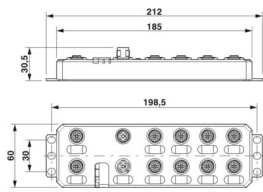
| | |
|--------------------------------------|---------------|
| Item number | 2701524 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR04 |
| Product key | DRI7DE |
| GTIN | 4046356763745 |
| Weight per piece (including packing) | 555.5 g |
| Weight per piece (excluding packing) | 551.4 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

EtherCAT®

| | |
|-------------------------------|----------------------------------|
| No. of channels | 2 |
| Connection method | M12 connector |
| Note on the connection method | D-coded |
| Number of positions | 4 |
| Transmission speed | 100 Mbps (with auto negotiation) |

EtherCAT®

| | |
|---------------------------|---|
| Equipment type | EtherCAT® subdevice |
| System-specific protocols | Mailbox protocols CANopen® over EtherCAT® Mailbox protocols File access over EtherCAT® |
| Specification | ETG.1000 V1.02 |

Input data

Digital:

| | |
|--------------------------|---|
| Input name | Digital inputs at pin 2 for class A ports |
| Description of the input | IEC 61131-2 type 1 |
| Number of inputs | 4 |

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| | |
|-----------------------------------|--|
| Connection method | M12 connector, X01 ... X04 have double occupancy |
| Connection technology | 3-conductor |
| Input voltage range "0" signal | -0.3 V DC ... 5 V DC |
| Input voltage range "1" signal | 15 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 | max. 200 mA (from L+/L-) |
| Total sensor current | max. 1.6 A (from L+/L-) |
| Input frequency | 0.5 kHz |
| Input filter time | < 1000 μ s |
| Protective circuit | Overload protection, short-circuit protection of sensor supply |

Digital

| | |
|--------------------------------|---|
| Description of the input | IO-Link ports in digital input (DI) mode |
| Number of inputs | max. 8 (IEC 61131-2 type 1) |
| Connection method | M12 connector, X01 ... X04 have double occupancy |
| Connection technology | 3-conductor |
| Nominal input voltage U_{IN} | 24 V DC |
| Input voltage range "0" signal | -0.3 V DC ... 5 V DC |
| Input voltage range "1" signal | 15 V DC ... 30 V DC |
| Nominal input current | typ. 3 mA |
| Sensor current per channel | max. 200 mA (from L+/L-) |
| Total sensor current | max. 1.6 A (from L+/L-) |
| Input filter time | < 1000 μ s |
| Input frequency | 0.5 kHz |
| Protective circuit | Overload protection; yes Short-circuit protection for the sensor supply; yes |

IO-Link

| | |
|-----------------------|--|
| Number of ports | 4 |
| Connection method | M12 connector |
| Connection technology | 3-conductor |
| Port type | Class A |
| Cycle Time | min. 2 ms (MasterCycleTime: PDInput* + PDOOutput* + OnReqData* <= 17 Bytes, COM3; * see "IO-Link Interface and System Specification V1.1.2") |

IO-Link

| | |
|-----------------------|--|
| Number of ports | 4 |
| Connection method | M12 connector |
| Connection technology | 3-conductor |
| Port type | Class B |
| Cycle Time | min. 2 ms (MasterCycleTime: PDInput* + PDOOutput* + OnReqData* <= 17 Bytes, COM3; * see "IO-Link Interface and System Specification V1.1.2") |

Output data

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Digital

| | |
|---|---|
| Output description | IO-Link ports in digital output (DO) mode |
| Connection method | M12 connector, X01 ... X04 have double occupancy |
| Connection technology | 3-conductor |
| Number of outputs | max. 8 |
| Nominal output voltage | 24 V DC |
| Maximum output current per channel | 150 mA |
| Maximum output current per module | 1.2 A |
| Nominal load, ohmic | 3.6 W (160 Ω, at nominal load) |
| Nominal load, inductive | 3.6 VA (0.8 H, 160 Ω, at nominal load) |
| Signal delay | max. 150 μs (when switched on) max. 200 μs (when switched off) |
| Switching rate | 1 per second, maximum (at nominal inductive load) 5500 per second, maximum (at nominal ohmic load) |
| Limitation of the voltage induced on circuit interruption | -15 V DC |
| Output voltage when switched off | max. 1 V |
| Output current when switched off | max. 300 μA |
| Protective circuit | Overload protection; yes Short-circuit protection; yes |
| Behavior with overload | Shutdown with automatic restart |

Product properties

| | |
|--------------------|-----------------|
| Product type | I/O component |
| Product family | Axioline E |
| 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: IO-Link

| | |
|--|--|
| Nominal voltage for I/O supply | 24 V DC |
| Nominal current for every IO-Link port | max. 150 mA (at C/Q (pin 4), maximum of 1.6 A over all 8 IO-Link C/Q and L+ cables) max. 200 mA (at L+/L- (pin 1 and pin 3), during startup, up to 1.6 A for short periods) max. 2 A (at U_A (IO-Link B ports, pin 2 and pin 5)) |
| Permissible cable length | < 20 m (to the sensor) |
| Protective circuit | Overload protection; yes |

Supply: Module electronics and sensors

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| | |
|----------------------|--|
| Designation | Supply of module electronics and sensors (U _S) |
| Connection method | M12 connector, T-coded |
| Number of positions | 4 |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.5 V DC ... 31.2 V DC (including all tolerances, including ripple) |
| Current consumption | typ. 180 mA ±15 % (at 24 V DC) max. 12 A |

Supply: Actuators

| | |
|----------------------|--|
| Designation | Supply of actuators (U _A) |
| 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. 28 mA ±15 % (at 24 V DC) max. 12 A |

Electrical isolation/isolation of the voltage ranges

| | |
|---|------------------------|
| Test voltage: 24 V supply (communications power and sensor supply, IO-Link ports)/bus connection (Ethernet 1) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (communications power and sensor supply, IO-Link ports)/bus connection (Ethernet 2) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (communications power and sensor supply, IO-Link ports)/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, IO-Link ports) | 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 |

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 % |

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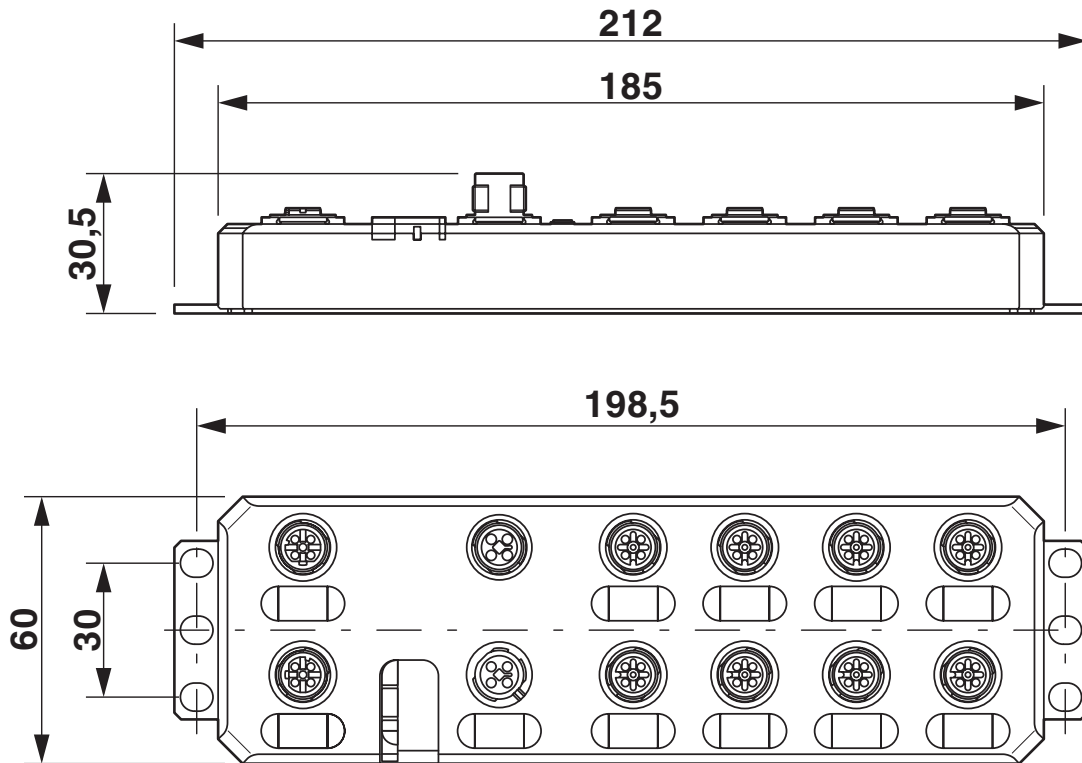


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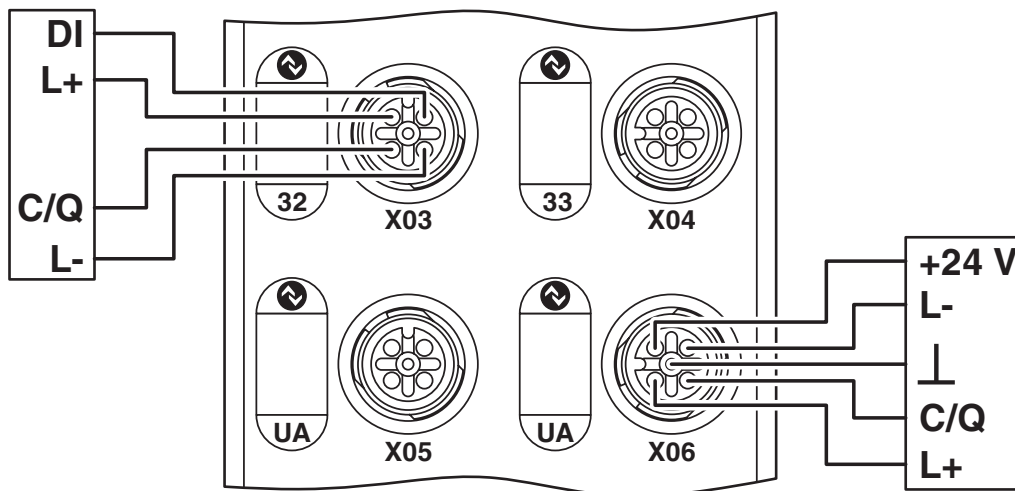
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Drawings

Dimensional drawing



Connection diagram



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Connection diagram



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Approvals

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EtherCAT

Approval ID: 0x84_002



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) |
|-------------------------------------|----------------------|

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