

Bus coupler - FLM BK ETH M12 DI 8 M12-2TX - 2736916

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The Ethernet bus coupler opens a local bus for up to 16 devices. Additional functions: 10 Mbps and 100 Mbps, auto negotiation, auto crossover, 8 digital inputs, channel-specific diagnostics, short-circuit and overload protection, M12 fast connection technology.

Product Description

The Fieldline Modular FLM BK ETH M12 DI8 M12 bus coupler with 8 digital inputs couples a Fieldline Modular local bus station to an Ethernet network and is also used for measuring digital signals. The bus coupler consists of two Ethernet connections that are designed as D-coded M12 sockets. Additional Ethernet devices can be connected due to the integrated, manageable 3-port switch to implement a line structure. The transmission speeds are 10 Mbps and 100 Mbps and are automatically selected by the device (auto negotiation). The interfaces can automatically interchange the receive and transmit cables (autocrossover). Following network protocols are supported by the FLM BK ETH M12 DI8 M12 bus coupler:

- Modbus/TCP
- Modbus/UDP
- DDI (Device Driver Interface)

The Ethernet bus coupler provides a powerful local bus as lower-level bus. The total length of the local bus is 20 m and it can connect up to 16 I/O units. Selectable transmission speeds in the range 500 kBaud to 2 Mbaud allow for flexible adaptation to the application and also permit savings on warehousing costs. The local bus connection is provided by 5-pos. B-coded M12 connectors. The four double-occupied sensor slots can be assigned through 5-pos. A-coded M12 connectors with sensors in 2, 3 or 4 conductor technology respectively.

The sensor supply is short-circuit and overload-protected and thus guarantees a high plant availability. The diagnosis and status indicators for voltage supply, network and local bus operation with the corresponding monitoring functions reduce bus downtime and provide support if service becomes necessary.

The high-performance SPEEDCON technology used allows connection times to be reduced by up to 90 %. The classic M12 connections can continued to be used with full compatibility.

Product Features

- Modbus TCP
- 8 inputs, 24 V DC
- M12 connection technology with SPEEDCON fast locking system



Key Commercial Data

| | |
|--------------------------------------|----------|
| Packing unit | 1 pc |
| Weight per Piece (excluding packing) | 349.4 g |
| Custom tariff number | 85176200 |
| Country of origin | Germany |

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Technical data

Note

| | |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

Environmental Product Compliance

| | |
|------------|---------------|
| REACH SVHC | DEHP 117-81-7 |
|------------|---------------|

Dimensions

| | |
|--------------------|--------|
| Width | 70 mm |
| Height | 178 mm |
| Depth | 50 mm |
| Drill hole spacing | 178 mm |

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -25 °C ... 85 °C |
| Permissible humidity (storage/transport) | 95 % |
| Air pressure (operation) | 80 kPa ... 106 kPa (up to 2000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Degree of protection | IP65/IP67 |

General

| | |
|---------------|---|
| Mounting type | Wall mounting |
| Net weight | 280 g |
| Mounting type | Wall mounting, optionally on mounting plate |

Interfaces

| | |
|------------------------------|----------------------------------|
| Fieldbus system | Ethernet |
| Designation | Ethernet (Modbus TCP) |
| Connection method | M12 connectors, D-coded |
| Designation connection point | Copper cable |
| Transmission speed | 10/100 MBit/s (auto negotiation) |
| Number of positions | 4 |

Local bus gateway

| | |
|----------------------------------|------------------------------------|
| Designation | Local bus gateway |
| Connection method | M12 connector, B-coded |
| Transmission speed | 500 kbaud/2 Mbaud, can be selected |
| Max. number of local bus devices | 16 |
| Max. length of local bus | 20 m |

Power supply for module electronics

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Power supply for module electronics

| | |
|----------------------|--|
| Connection method | M12 connector |
| Designation | U_L |
| Supply voltage | 24 V DC |
| Supply voltage range | 18 V DC ... 30 V DC (including ripple) |
| Supply current | < 100 mA |

Fieldline potentials

| | |
|--------------------------------|---|
| Voltage supply U_L | 24 V DC |
| Power supply at U_L | max. 4 A |
| Current consumption from U_L | max. 118 mA (At 2 Mbaud) |
| | typ. 118 mA (At 2 Mbaud) |
| | max. 60 mA (At 500 kBaud) |
| | typ. 60 mA (At 500 kBaud) |
| Voltage supply U_S | 24 V DC |
| Power supply at U_S | max. 4 A |
| Current consumption from U_S | typ. 5 mA (plus power supply for sensors) |
| | max. 600 mA |

Digital inputs

| | |
|--------------------------------|--|
| Input name | Digital inputs |
| Connection method | M12 connector |
| | 2, 3, 4-wire |
| Number of inputs | 8 (EN 61131-2 type 1) |
| Protective circuit | Short-circuit protection, overload protection of the sensor supply Reverse polarity protection |
| Filter time | 3 ms |
| Input characteristic curve | IEC 61131-2 type 1 |
| Input voltage | 24 V DC |
| Input voltage range "0" signal | -30 V DC ... 5 V DC |
| Input voltage range "1" signal | 13 V DC ... 30 V DC |

Standards and Regulations

| | |
|----------------------------------|--------------------------------------|
| Test section | To I/O 500 V DC |
| Connection in acc. with standard | CUL |
| Protection class | III, IEC 61140, EN 61140, VDE 0140-1 |

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Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27250203 |
| eCl@ss 4.1 | 27250203 |
| eCl@ss 5.0 | 27250203 |
| eCl@ss 5.1 | 27242608 |
| eCl@ss 6.0 | 27242608 |
| eCl@ss 7.0 | 27242608 |
| eCl@ss 8.0 | 27242608 |
| eCl@ss 9.0 | 27242608 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC001434 |
| ETIM 3.0 | EC001604 |
| ETIM 4.0 | EC001604 |
| ETIM 5.0 | EC001604 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 43172015 |
| UNSPSC 7.0901 | 43201404 |
| UNSPSC 11 | 43172015 |
| UNSPSC 12.01 | 43201404 |
| UNSPSC 13.2 | 43201404 |

Approvals

Approvals

Approvals

UL Recognized / cUL Recognized / cULus Recognized

Ex Approvals

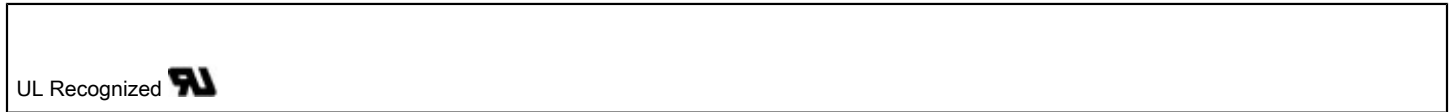
UL Recognized / cUL Recognized / cULus Recognized

Approvals submitted

Approval details

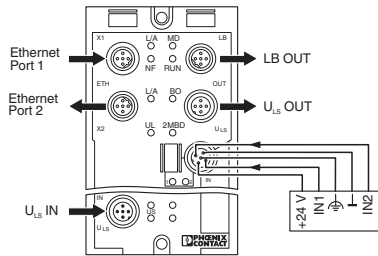
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Approvals



Drawings

Connection diagram



Dimensional drawing

