

# PSI-MOS-RS232/FO1300 E - FO converters



2708588

<https://www.phoenixcontact.com/us/products/2708588>

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Fiber optic converter with integrated optical diagnostics, alarm contact, for RS-232 interfaces up to 115.2 kbps, termination device with one fiber optic interface (SC duplex), 1300 nm, for fiberglass cable

## Your advantages

- Connections can be plugged in via a COMBICON screw terminal block
- Supply voltage and data signals routed through the DIN rail connectors
- Redundant power supply possible by means of optional system power supply unit
- High-quality electrical isolation between all interfaces (RS-232 // fiber optic ports // power supply // DIN rail connector)
- Approved for use in zone 2
- Floating switch contact for advance warning of critical FO paths
- Integrated optical diagnostics for continuous monitoring of FO paths
- Automatic data rate detection for all data rates up to 115.2 kbps

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2708588       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DN06          |
| Product key                          | DNC215        |
| GTIN                                 | 4046356176286 |
| Weight per piece (including packing) | 245.8 g       |
| Weight per piece (excluding packing) | 183.78 g      |
| Customs tariff number                | 85176200      |
| Country of origin                    | DE            |

## Technical data

### Notes

#### Note on application

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

#### Utilization restriction

|            |   |
|------------|---|
| CCCex note | Use in potentially explosive areas is not permitted in China. |
|------------|---|

### Product properties

|                |  |
|----------------|--|
| Product type   | Media converter  |
| Product family | PSI-MOS  |
| MTTF           | 942 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)                                     |
|                | 418 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)                                  |
|                | 172 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)                                    |
| MTBF           | 549 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))     |
|                | 113 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day)) |

### Electrical properties

|   |                                       |
|---|---------------------------------------|
| Electrical isolation                            | VCC // V.24 (RS-232)                  |
| Maximum power dissipation for nominal condition | 2.5 W                                 |
| Test voltage data interface/power supply        | 1.5 kV <sub>rms</sub> (50 Hz, 1 min.) |

#### Supply

|                             |  |
|-----------------------------|--|
| Supply voltage range        | 18 V DC ... 32 V DC  |
| Nominal supply voltage      | 24 V DC  |
| Typical current consumption | 100 mA (24 V DC)   |
| Max. current consumption    | ≤ 2 A (For operation in a joining station, via the DIN rail connector) |

### Output data

#### Switching

|                             |              |
|-----------------------------|--------------|
| Output name                 | Relay output |
| Output description          | Alarm output |
| Number of outputs           | 1            |
| Maximum switching voltage   | 60 V DC      |
|                             | 42 V AC      |
| Limiting continuous current | 1 A          |

### Connection data

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## Supply

|   |   |
|---|---|
| Connection method                       | COMBICON plug-in screw terminal block       |
| Single conductor/terminal point, rigid  | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Single-wire/terminal point, flexible    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross-section, flexible [AWG] | 24 ... 14                                   |
| Stripping length                        | 7.00 mm                                     |
| Tightening torque                       | 0.56 Nm ... 0.79 Nm                         |

## Interfaces

|                        |                                |
|------------------------|--------------------------------|
| Bit distortion, input  | ± 35 % (permitted)             |
| Bit distortion, output | < 6.25 %                       |
| Signal                 | Modbus                         |
| Transmission channels  | 2 (1/1), RxD, TxD, full duplex |

## Data: optical FO

|   |  |
|---|--|
| No. of channels                               | 1  |
| Transmit capacity, minimum                    | -3.4 dBm (50/125 µm, multimode fiberglass)     |
|   | -4.7 dBm (62.5/125 µm, multimode fiberglass)   |
|   | -5.5 dBm (9/125 µm, singlemode fiberglass)     |
| Transmission length incl. 3 dB system reserve | 27 km (With F-G 50/125 0.7 dB/km at 1300 nm)   |
|   | 22 km (with F-G 62.5/125 0.8 dB/km at 1300 nm) |
|   | 45 km (With F-E 9/125 0,4 dB/km at 1300 nm)    |
| Transmission protocol                         | Transparent to protocol for RS-232 interface   |
| Connection method                             | SC duplex                                      |
| Wavelength                                    | 1300 nm  |
| Minimum receiver sensitivity                  | -25.5 dBm (50/125 µm, multimode fiberglass)    |
|   | -25.5 dBm (62.5/125 µm, multimode fiberglass)  |
|   | -26.5 dBm (9/125 µm, singlemode fiberglass)    |
| Maximum receiver sensitivity                  | 0 dBm  |
| Transmission medium                           | Multi-mode fiberglass                          |
|   | Single-mode fiberglass                         |

## Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

|                           |                         |
|---------------------------|-------------------------|
| Serial transmission speed | 9.6 Kbps ... 115.2 Kbps |
| Connection method         | D-SUB 9 plug            |
| Tightening torque         | 0.4 Nm                  |
| Transmission length       | ≤ 15 m                  |
| Transmission medium       | Copper                  |
| File format/coding        | UART (11 Bit, NRZ)      |
| Data direction switching  | Automatic control       |

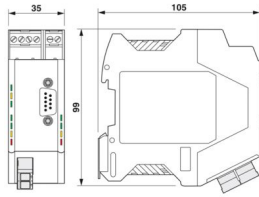
## Dimensions

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|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Width               | 35 mm  |
| Height              | 99 mm  |
| Depth               | 105 mm   |

## Material specifications

|                    |                  |
|--------------------|------------------|
| Color (Housing)    | green (RAL 6021) |
| Material (Housing) | PA 6.6-FR        |

## Cable/line

### FO cable

|             |            |
|-------------|------------|
| Fiber types | 50/125 µm  |
|             | 9/125 µm   |
|             | Fiberglass |

## Mechanical tests

|  |   |
|--|---|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | Operation: 5g, 10...150 Hz, 2.5 h, in XYZ direction |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27              | Operation: 15g, 11 ms period, half-sine shock pulse |

## Environmental and real-life conditions

### Ambient conditions

|   |  |
|---|--|
| Degree of protection                    | IP20   |
| Ambient temperature (operation)         | -20 °C ... 60 °C   |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C   |
| Altitude                                | ≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation) |
| Permissible humidity (operation)        | 30 % ... 95 % (non-condensing)   |

## Approvals

### CE

|             |              |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

### ATEX

|                |   |
|----------------|---|
| Identification | ⊕ II 3 G Ex ec nC IIC T4 Gc   |
| Certificate    | PxCIF07ATEX2708559X   |
| Note           | Please follow the special installation instructions in the documentation! |

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## UL, USA/Canada

|                |                |
|----------------|----------------|
| Identification | 508 Listed     |
|                | 508 Recognized |

## Corrosive gas test

|                |                                  |
|----------------|----------------------------------|
| Identification | ISA-S71.04-1985 G3 Harsh Group A |
|----------------|----------------------------------|

## EMC data

|                               |   |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Noise immunity                | EN 61000-6-2:2005                         |

## Noise emission

|                       |          |
|-----------------------|----------|
| Standards/regulations | EN 55011 |
|-----------------------|----------|

## Electrostatic discharge

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

## Electrostatic discharge

|                   |             |
|-------------------|-------------|
| Contact discharge | $\pm 6$ kV  |
| Discharge in air  | $\pm 8$ kV  |
| Comments          | Criterion B |

## Electromagnetic HF field

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

## Electromagnetic HF field

|                 |             |
|-----------------|-------------|
| Field intensity | 10 V/m      |
| Comments        | Criterion A |

## Fast transients (burst)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

## Fast transients (burst)

|          |             |
|----------|-------------|
| Input    | $\pm 2$ kV  |
| Signal   | $\pm 2$ kV  |
| Comments | Criterion B |

## Surge current load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

## Surge current load (surge)

|          |              |
|----------|--------------|
| Input    | $\pm 0.5$ kV |
| Signal   | $\pm 1$ kV   |
| Comments | Criterion B  |

## Conducted interference

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

## Conducted interference

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|          |             |
|----------|-------------|
| Comments | Criterion A |
| Voltage  | 10 V        |

## Emitted interference

|                       |                                  |
|-----------------------|----------------------------------|
| Standards/regulations | EN 55011                         |
| Comments              | Class A, industrial applications |

## Criteria

|             |  |
|-------------|--|
| Criterion A | Normal operating behavior within the specified limits.                               |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |

## Standards and regulations

|   |                    |
|---|--------------------|
| Free from substances that could impair the application of coating | VDMA 24364:2018-05 |
|---|--------------------|

## Mounting

|                       |  |
|-----------------------|--|
| Mounting type         | DIN rail mounting  |
| Assembly note         | The product can be snapped onto all 35 mm DIN rails in accordance with EN/IEC 60715. |
| Useable DIN rail type | DIN rail: 35 mm  |

# PSI-MOS-RS232/FO1300 E - FO converters

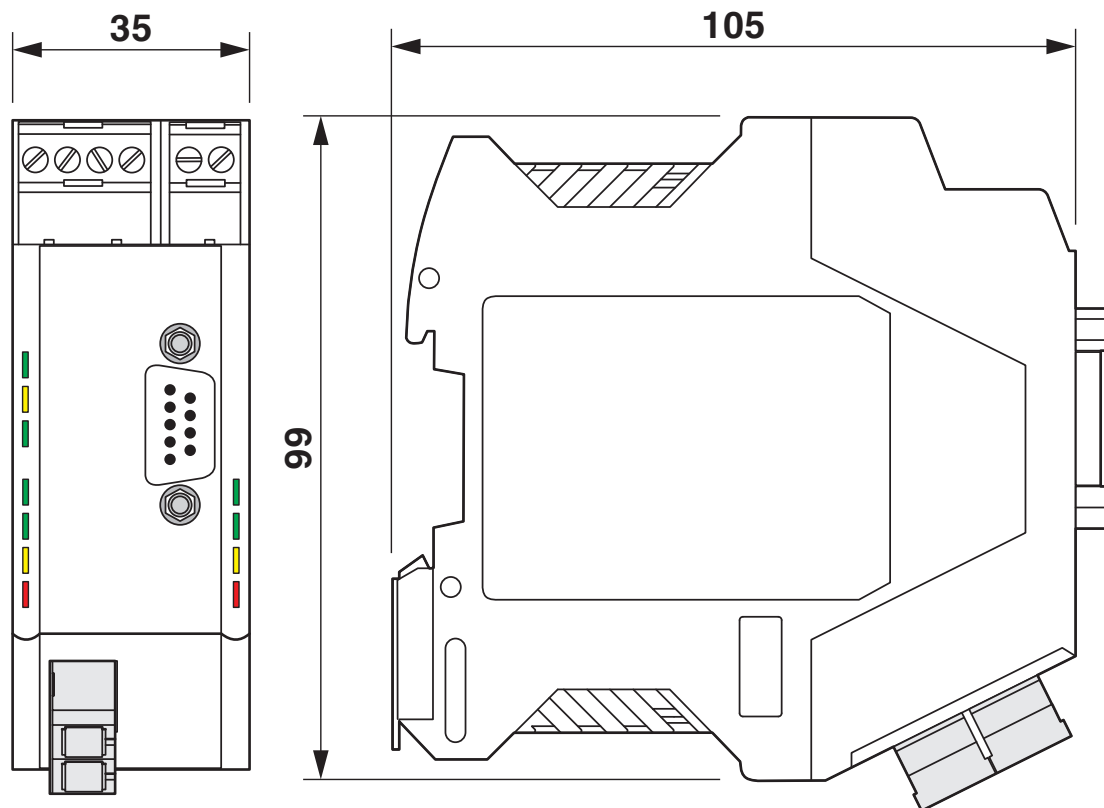


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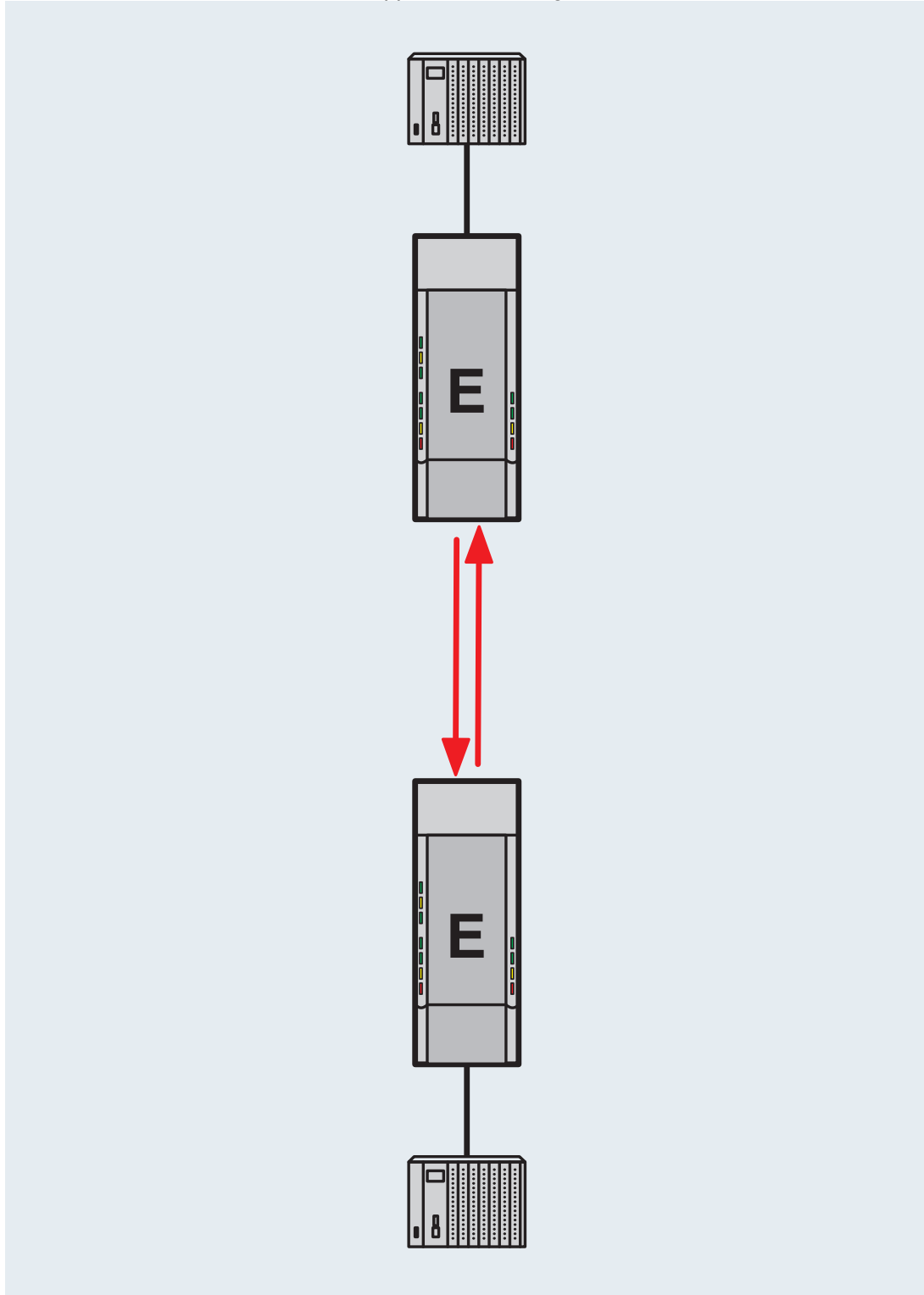
## Drawings

Dimensional drawing



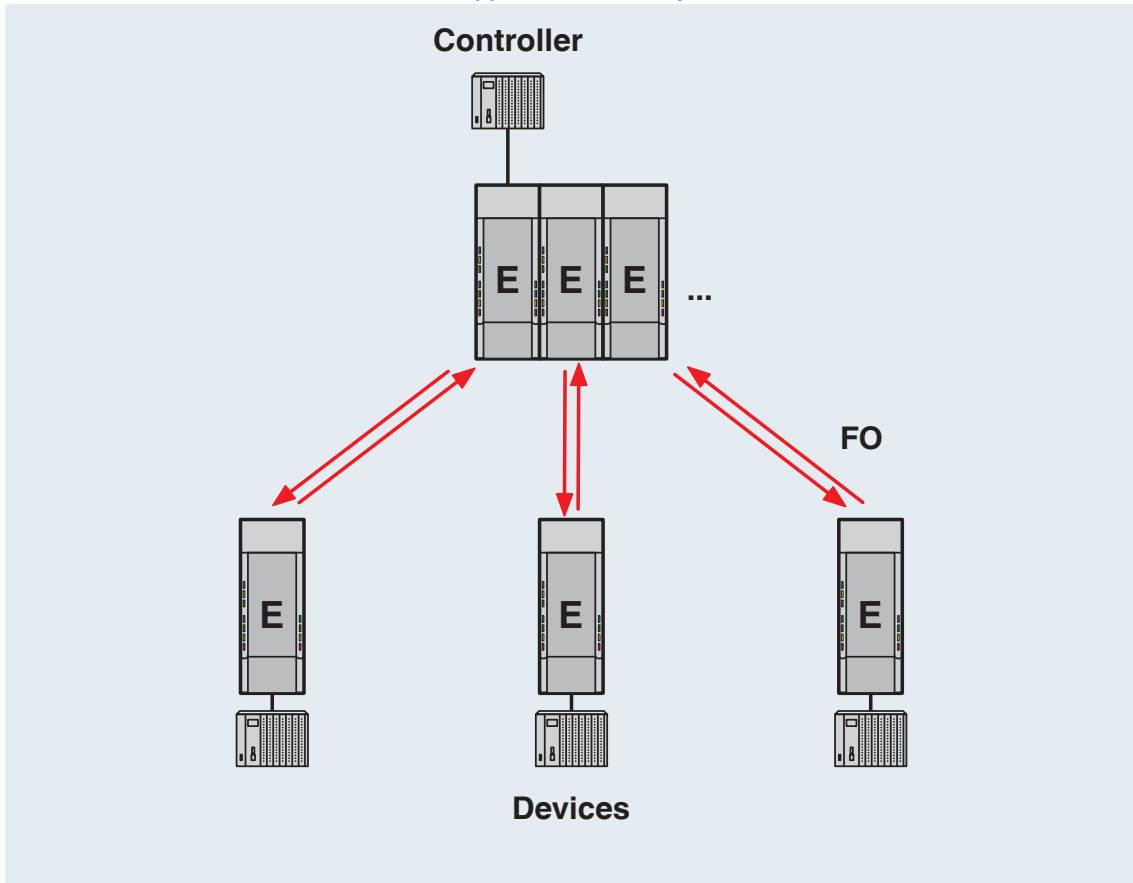
Housing dimensions

Application drawing



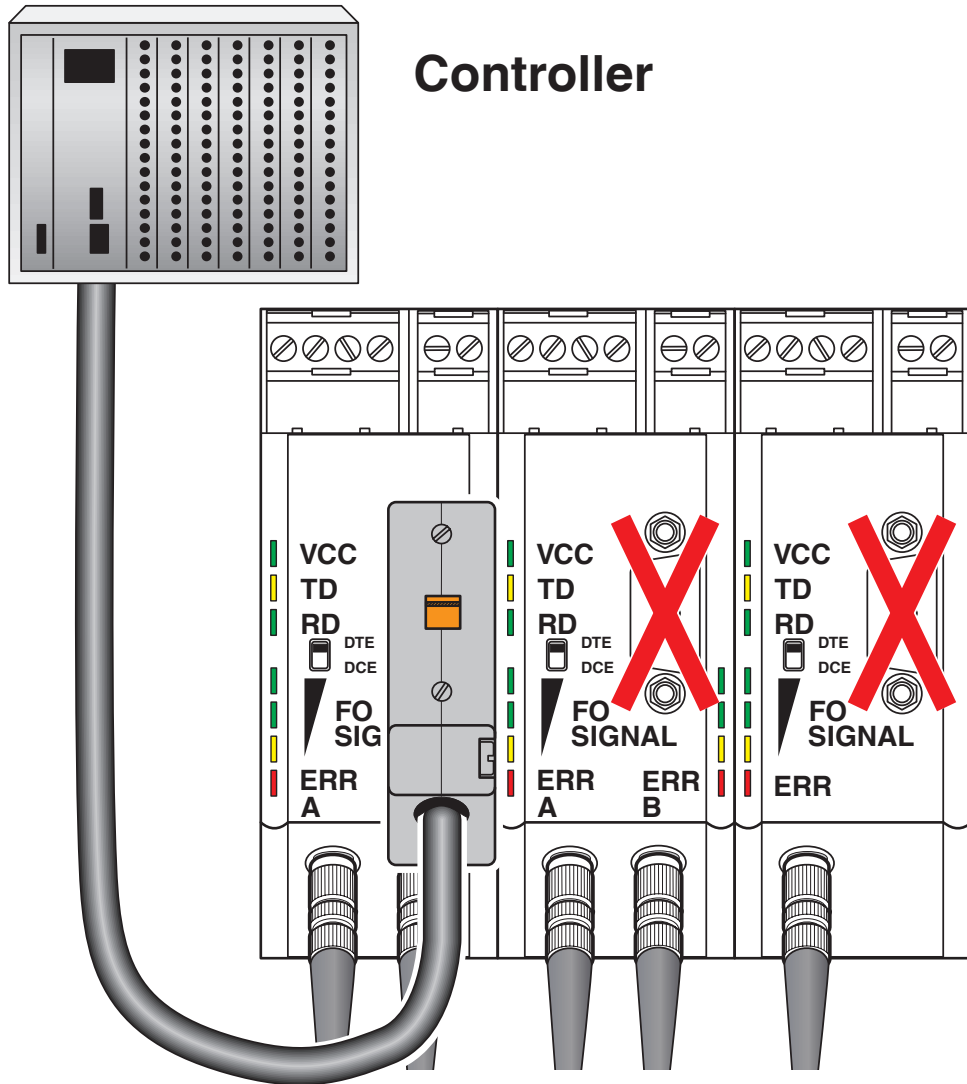
Point-to-point connection

Application drawing



Star structure

Schematic diagram



Connecting data cables

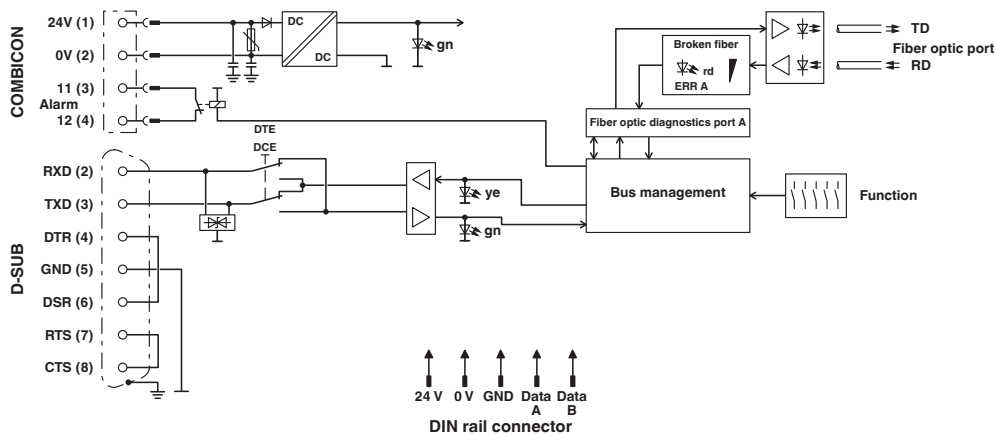
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Block diagram



Basic circuit diagram

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2708588>



**cULus Listed**

Approval ID: E238705



**cULus Recognized**

Approval ID: E238705

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 19170411 |
| ECLASS-15.0 | 19170411 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001467 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 43201500 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes                |
| Exemption                               | 6(c), 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.) | 1-Methyl-2-pyrrolidone (NMP)(CAS: 872-50-4) |
|                                     | Lead(CAS: 7439-92-1)                        |
| SCIP                                | 79d9c3e3-067f-49ba-ab9e-5448ae9e7261        |

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