

2708083

<https://www.phoenixcontact.com/us/products/2708083>

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FO converter with integrated optical diagnostics, for DeviceNet™, CAN, CANopen® up to 800 kbps, basic module, interfaces: 1 x CAN, 1 x alarm, 1 x FO (BFOC), 850 nm, for PCF/fiberglass cable (multimode)

## Product description

The PSI-MOS-DNET... fiber optic transmission system enables DeviceNet™ and CANopen® users to benefit from simple and interference-free networking based on fiber optics. In addition, bus cable short circuits only affect the specific potential segment concerned. This increases overall availability, and improves flexibility when designing the bus topology. The use of fiber optic technology enables branch lines and star and tree structures to be created. The 22.5 mm space-saving devices from the **PSI-MOS-DNET CAN/FO...** series feature an internal backplane. The maximum network expansion that can be achieved (sum total of copper and fiber optic cables) essentially depends on the data rate used.

## Your advantages

- Data rates of up to 800 kbps, set via DIP switches
- Approved for use in zone 2
- Intrinsically safe fiber optic interface (Ex op is) for direct connection to devices in zone 1



DeviceNet™

CANopen®

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2708083       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DN06          |
| Product key                          | DNC213        |
| GTIN                                 | 4017918943202 |
| Weight per piece (including packing) | 200.3 g       |

# PSI-MOS-DNET CAN/FO 850/BM - FO converters



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|                                      |          |
|--------------------------------------|----------|
| Weight per piece (excluding packing) | 198.2 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   |
| Application    | Base module   |
| MTBF           | 299 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))    |
|                | 47 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day)) |

### Electrical properties

|   |                                       |
|---|---------------------------------------|
| Electrical isolation                            | VCC // CAN                            |
| Maximum power dissipation for nominal condition | 2 W                                   |
| Test voltage data interface/power supply        | 1.5 kV <sub>rms</sub> (50 Hz, 1 min.) |

#### Supply

|                             |   |
|-----------------------------|---|
| Supply voltage range        | 10 V DC ... 30 V DC (via pluggable COMBICON screw terminal block) |
| Nominal supply voltage      | 24 V DC (in acc. with UL)   |
| Typical current consumption | 100 mA (24 V DC)  |
| Max. current consumption    | 100 mA  |

### 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 | 0.46 A       |

### Connection data

#### Supply

|                   |  |
|-------------------|--|
| Connection method | Pluggable COMBICON screw terminal block through basic module |
| Tightening torque | 0.56 Nm ... 0.79 Nm  |

## Interfaces

|                        |                    |
|------------------------|--------------------|
| Bit distortion, input  | ± 35 % (permitted) |
| Bit distortion, output | < 6.25 %           |
| Signal                 | CAN                |
|                        | CANopen®           |
|                        | DeviceNet™         |

### Data: optical FO

|   |  |
|---|--|
| No. of channels                               | 1  |
| Transmit capacity, minimum                    | -17.9 dBm (50/125 µm)                                      |
|   | -14.1 dBm (62,5/125 µm)                                    |
|   | -5.1 dBm (200/230 µm)                                      |
| Transmission length incl. 3 dB system reserve | 2800 m (F-K 200/230 8 dB/km with quick mounting connector) |
|   | 4800 m (with F-G 50/125 2.5 dB/km)                         |
|   | 4200 m (with F-G 62,5/125 3.0 dB/km)                       |
| Connection method                             | B-FOC (ST®)  |
| Wavelength                                    | 850 nm   |
| Minimum receiver sensitivity                  | -32.5 dBm (50/125 µm)                                      |
|   | -32.5 dBm (62,5/125 µm)                                    |
|   | -32.1 dBm (200/230 µm)                                     |
| Transmission medium                           | PCF fiber  |
|   | Multi-mode fiberglass                                      |

### Data: CAN interface, in accordance with ISO/IS 11898 for DeviceNet™, CAN, CANopen®

|                           |   |
|---------------------------|---|
| Serial transmission speed | ≤ 800 kbps  |
| Connection method         | Pluggable screw connection                                  |
| Transmission length       | ≤ 5000 m (Dependent on the data rate and the protocol used) |
| Termination resistor      | 120 Ω (Can be connected)                                    |
| Transmission medium       | Copper  |
| File format/coding        | Bit stuffing, NRZ   |

## Dimensions

|        |          |
|--------|----------|
| Width  | 22.5 mm  |
| Height | 99 mm    |
| Depth  | 114.5 mm |

## Material specifications

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

## Cable/line

### FO cable

|             |            |
|-------------|------------|
| Fiber types | 200/230 µm |
|             | 50/125 µm  |

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|  |             |
|--|-------------|
|  | 62.5/125 µm |
|  | PCF fiber   |
|  | Fiberglass  |

## Mechanical tests

|  |  |
|--|--|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | : 5g, 10...150 Hz, 2.5 h, in XYZ direction |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27              | : 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 nA nC IIC T4 Gc X   |
| Note           | Please follow the special installation instructions in the documentation! |

### ATEX, FO interface

|                |   |
|----------------|---|
| Identification | ⊕ II (2) G [Ex op is Gb] IIC<br>⊕ II (2) D [Ex op is Db] IIIC             |
| Certificate    | PTB 06 ATEX 2042 U  |
| Note           | Please follow the special installation instructions in the documentation! |

### UL, USA/Canada

|                |  |
|----------------|--|
| Identification | Class I, Zone 2, AEx nc IIC T5<br>Class I, Div. 2, Groups A, B, C, D |
|----------------|--|

### 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                              |

### Noise emission

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

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## Electrostatic discharge

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

## Electrostatic discharge

|                   |             |
|-------------------|-------------|
| Contact discharge | ± 6 kV      |
| Discharge in air  | ± 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    | 2 kV (5 kHz) |
| Signal   | 2 kV (5 kHz) |
| Comments | Criterion B  |

## Surge current load (surge)

|          |               |
|----------|---------------|
| Input    | 0.5 kV (42 Ω) |
| Signal   | 1 kV (2 Ω)    |
| Comments | Criterion B   |

## Conducted interference

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

## Conducted interference

|          |             |
|----------|-------------|
| 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. |

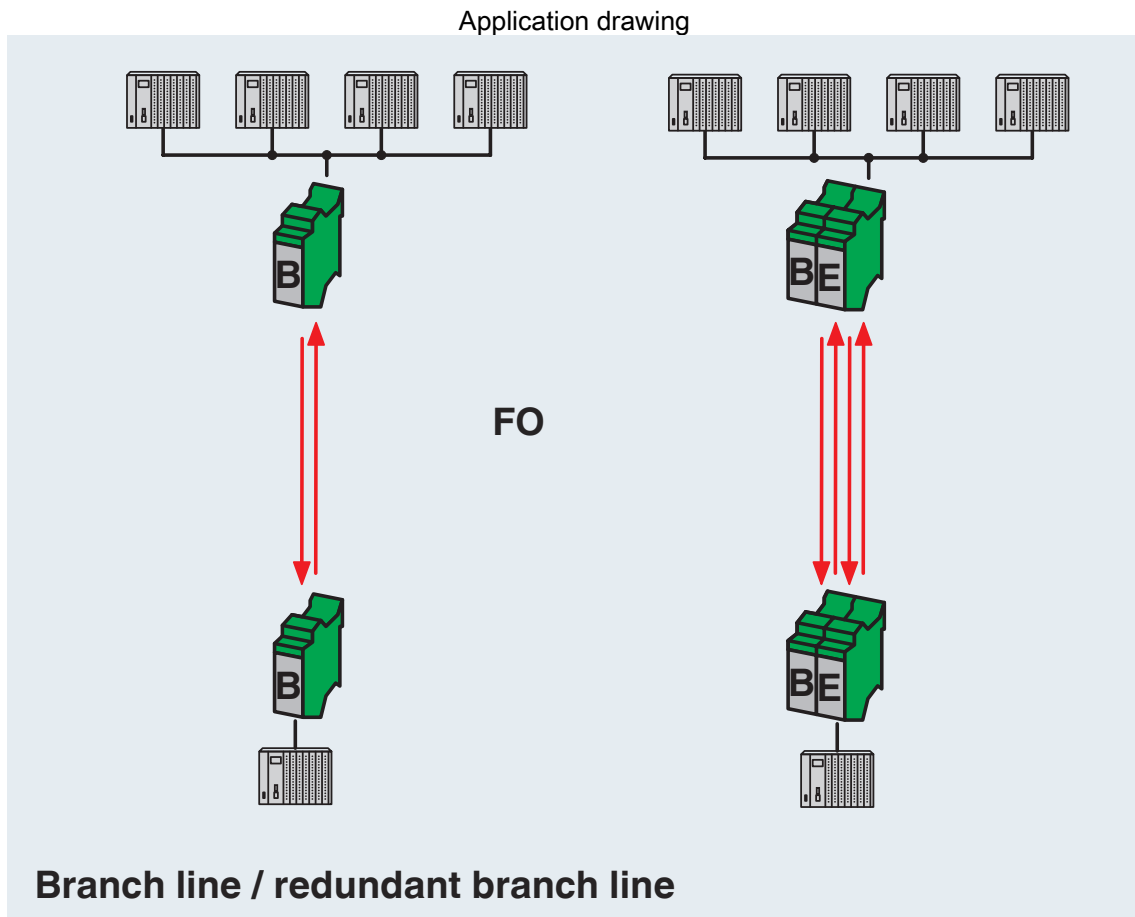
## Mounting

|               |                   |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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## Drawings

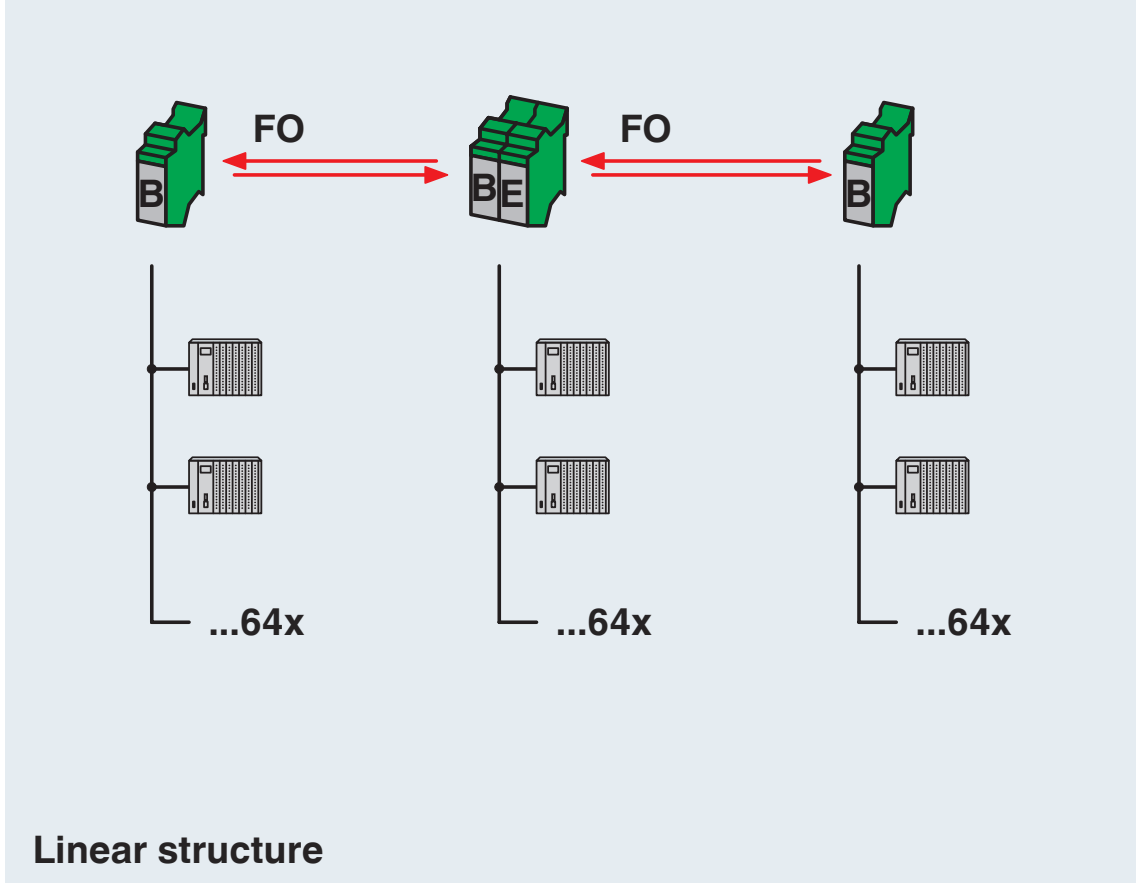


Branch line / redundant branch line

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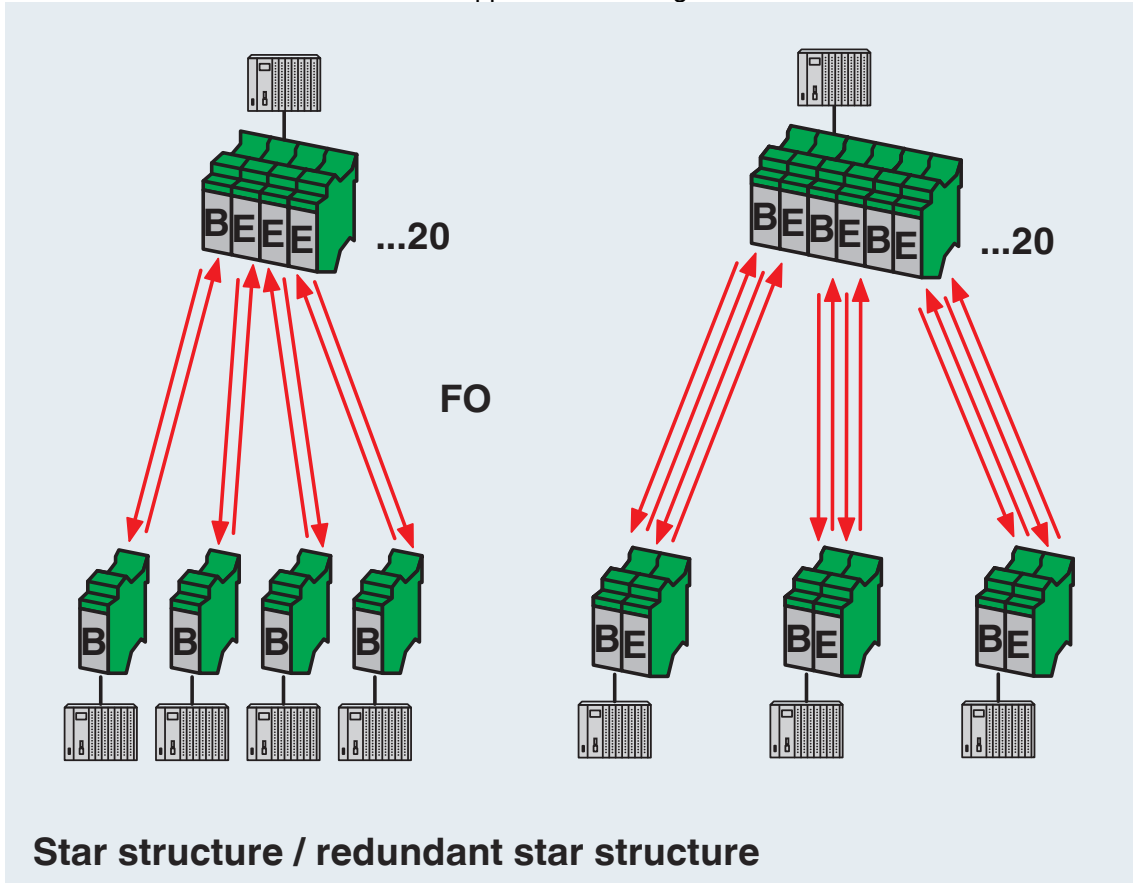
<https://www.phoenixcontact.com/us/products/2708083>

Application drawing



Line structure

Application drawing

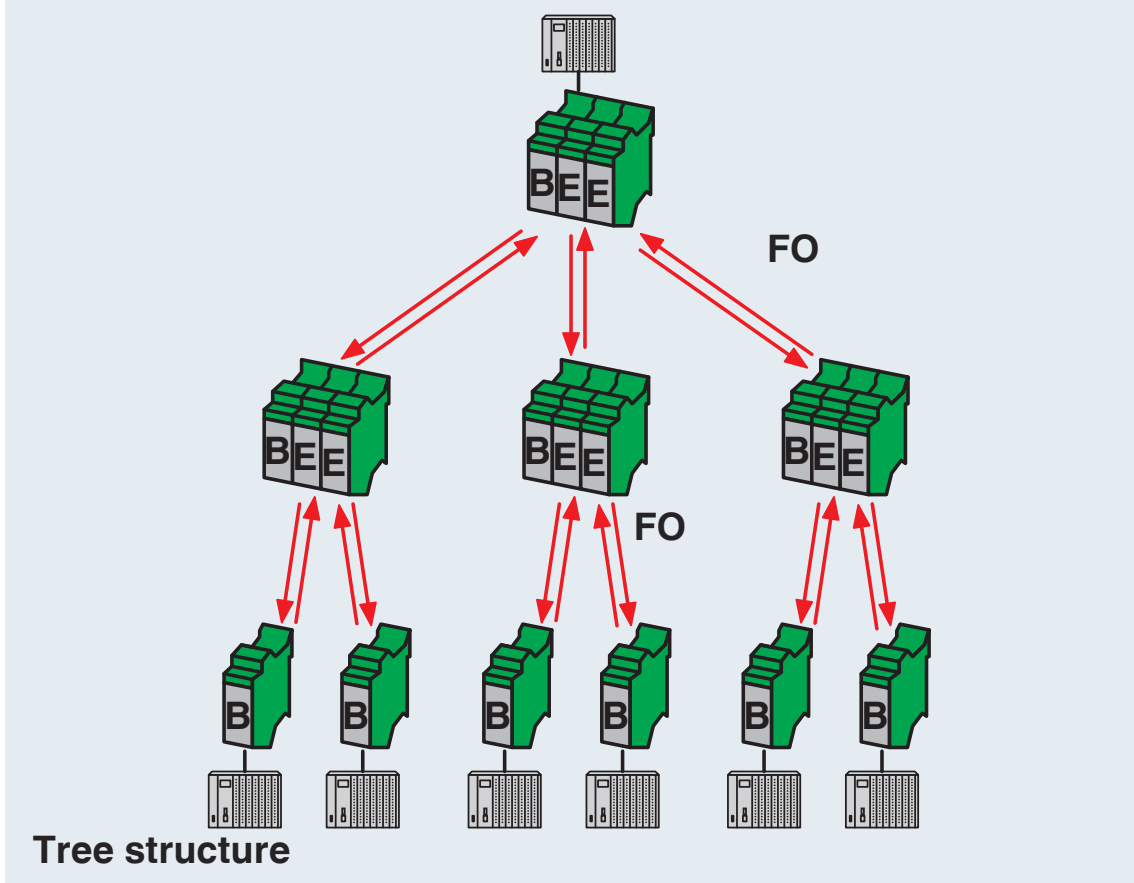


Star structure / redundant star structure

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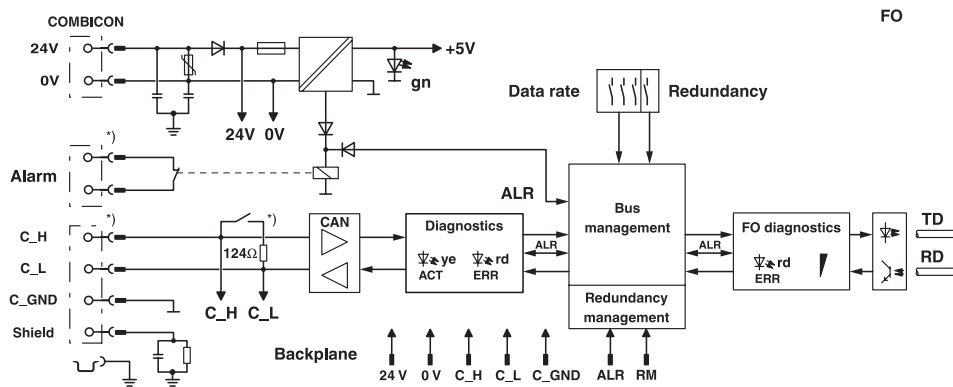
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Application drawing



Tree structure

Block diagram



\*) Only for basic module

\*) Only in the basic module

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2708083>



**cULus Recognized**  
Approval ID: E238705



**UL Listed**  
Approval ID: E199827

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## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 43223323 |
|-------------|----------|

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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.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | ecade925-421c-43c8-a7af-c1ab25e073ae |

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