

# PSI-MOS-CNET/FO 850 E - FO converters



2313711

<https://www.phoenixcontact.com/us/products/2313711>

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Fiber optic converter with integrated optical diagnostics, for ControlNet, 5 Mbps data rate, termination device, interfaces: 1 x CNET, 1 x Alarm, 1 x FO (B-FOC), 850 nm, for PCF/fiberglass (multi-mode)

## Your advantages

- Approved for use in zone 2
- Intrinsically safe fiber optic interface (Ex op is) for direct connection to devices in zone 1
- Floating switch contact for advance warning of critical FO paths
- Integrated optical diagnostics for continuous monitoring of FO paths
- Connections can be plugged in via a COMBICON screw terminal block
- Supply voltage and data signals routed through the DIN rail connectors
- Can be combined with the PSI copper repeater in a modular way using DIN rail connectors
- Redundant power supply possible by means of optional system power supply unit
- High-quality electrical isolation between all interfaces (ControlNet // fiber optic ports // power supply // DIN rail connector)

## Commercial data

Item number	2313711
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN06
Product key	DNC214
GTIN	4046356513845
Weight per piece (including packing)	249 g
Weight per piece (excluding packing)	249 g
Customs tariff number	85176200
Country of origin	DE

## Technical data

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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### Product properties

Product type	Media converter
MTTF	985 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	418 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	173 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	297 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 // ControlNet™
Maximum power dissipation for nominal condition	2.4 W
Test voltage data interface/power supply	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)

#### Supply

Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC
Typical current consumption	100 mA (24 V DC)
Max. current consumption	110 mA
	≤ 2 A (For operation in a joining station, via the DIN rail connector)

#### Function

Status and diagnostic indicators	Port A (module status indicator), FO signal (fiber optic signal quality), ERR (broken fiber, fiber optic)
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### Output data

#### Switching

Output name	Relay output
Number of outputs	1
Contact switching type	N/O contact
Minimum switching voltage	18 V DC
Maximum switching voltage	30 V DC
Limiting continuous current	500 mA

## Connection data

### Supply

Tightening torque	0.56 Nm ... 0.79 Nm
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## Interfaces

Bit distortion, input	± 35 %
Bit distortion, output	< 6.25 %
Signal	ControlNet™

### Data: optical FO

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	1200 m (F-K 200/230 8 dB/km with quick mounting connector)
	3100 m (with F-G 50/125 2.5 dB/km)
	3000 m (with F-G 62,5/125 3.0 dB/km)
Transmission protocol	Protocol transparent for ControlNet™ interface
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: ControlNet interface, in accordance with EN 50170

Serial transmission speed	5 Mbps
Connection method	BNC 75 Ω
Transmission length	≤ 1000 m
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section AWG max.	14
Conductor cross-section AWG min.	24
Transmission medium	Copper
File format/coding	Serial asynchronous UART/NRZ

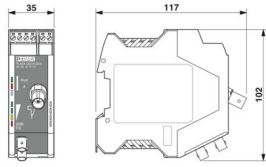
## Dimensions

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Dimensional drawing	
Width	35 mm
Height	105 mm
Depth	117 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
	62.5/125 µm
	PCF fiber
	Fiberglass

## Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Vibration (operation): 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Shock (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
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### ATEX

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
Note	Please follow the special installation instructions in the documentation!

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## ATEX

Identification	Ⓜ II (2) G [Ex op is Gb] IIC Ⓜ II (2) D [Ex op is Db] IIIC
Certificate	PTB 06 ATEX 2042 U

## UL, USA/Canada

Identification	508 Listed
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## 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
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## Electrostatic discharge

Contact discharge	± 6 kV
Discharge in air	± 8 kV
Comments	Criterion B

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## Electromagnetic HF field

Field intensity	10 V/m
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
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## Fast transients (burst)

Input	± 2 kV
Signal	± 2 kV
Comments	Criterion B

## Surge current load (surge)

Standards/regulations	EN 61000-4-5
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## Surge current load (surge)

Input	± 0.5 kV
Signal	± 1 kV
Comments	Criterion B

## Conducted interference

Standards/regulations	EN 61000-4-6
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## 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.

## Standards and regulations

Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0
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## Mounting

Mounting type	DIN rail mounting
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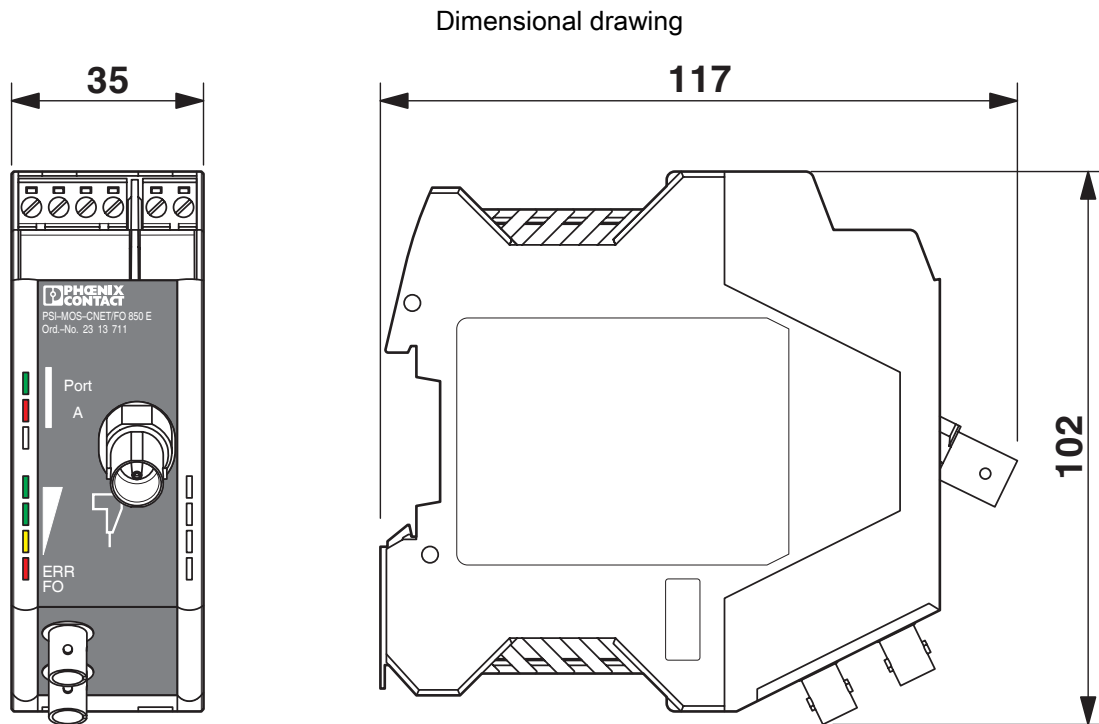
# PSI-MOS-CNET/FO 850 E - FO converters



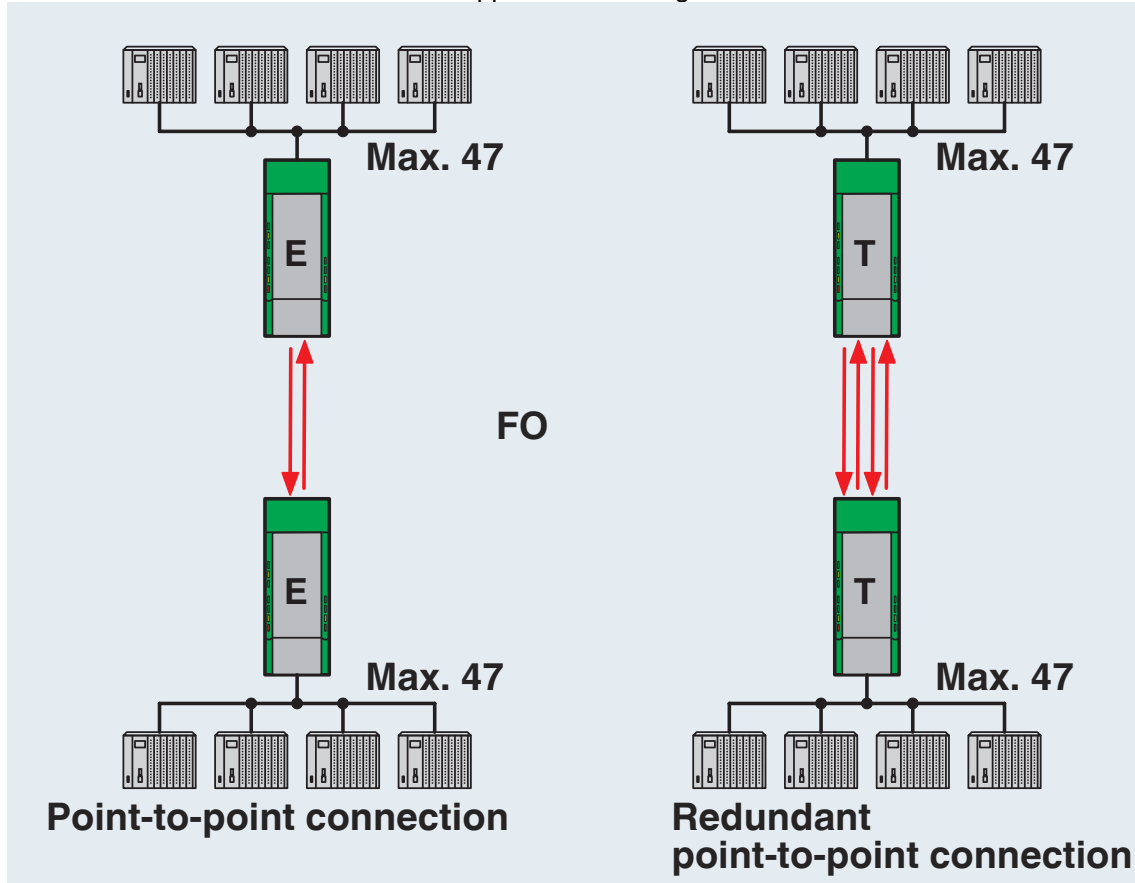
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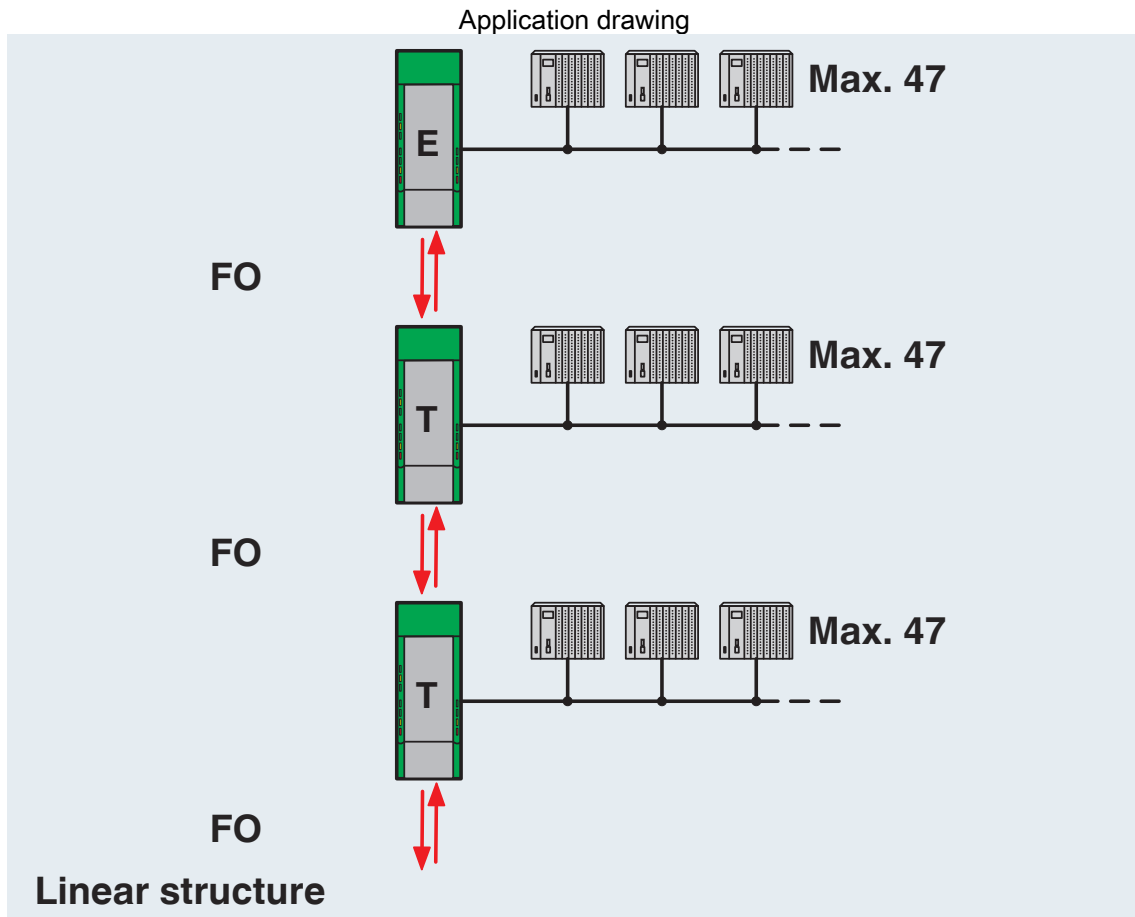
## Drawings



Application drawing



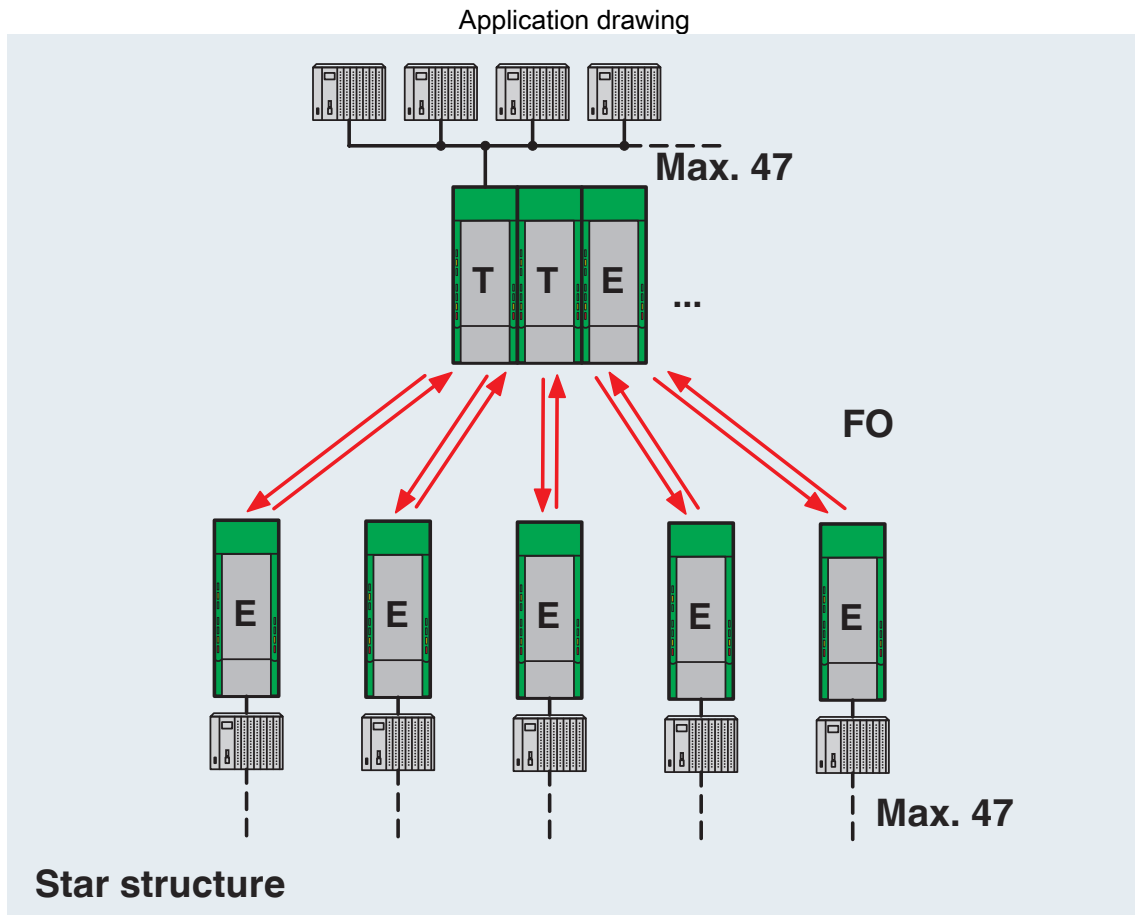
Point-to-point connection



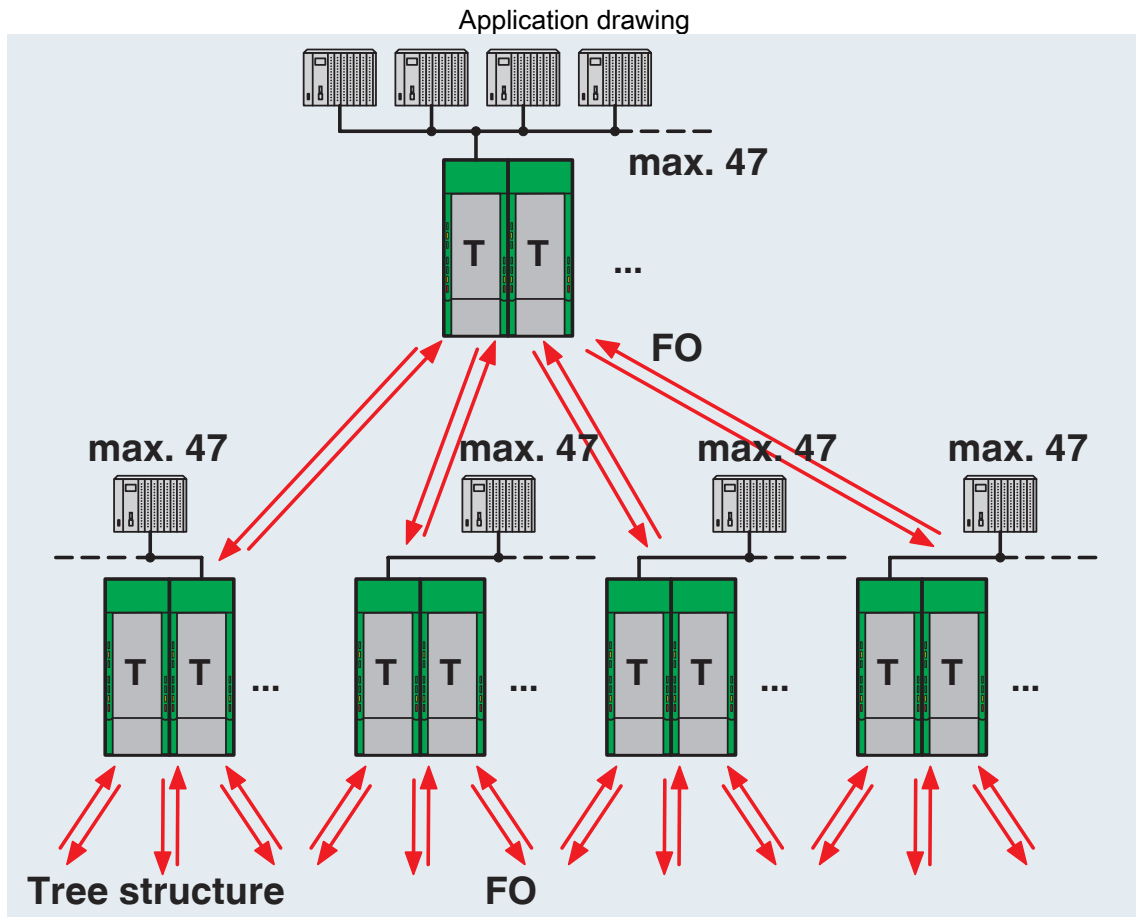
Line structure

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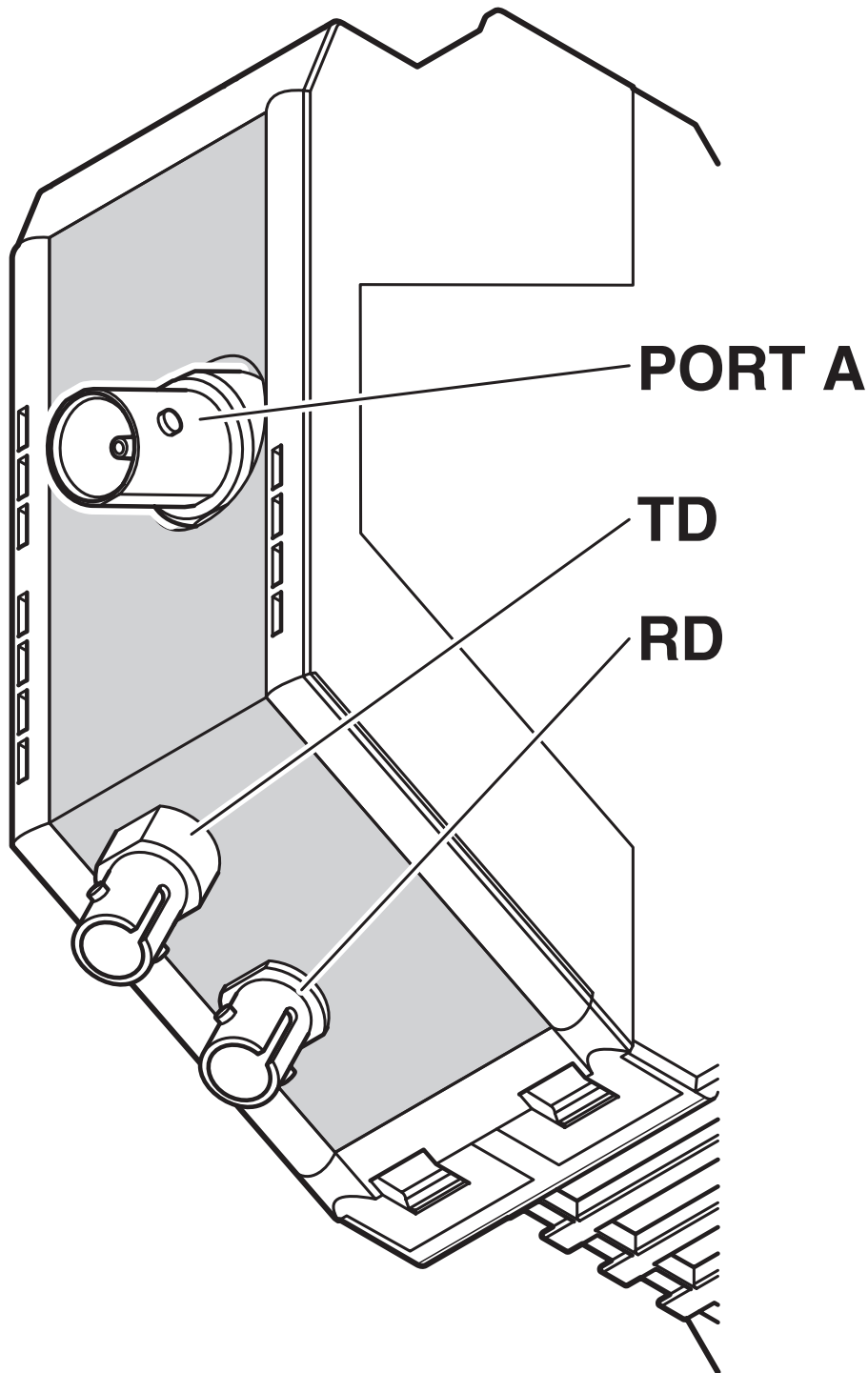


Star structure

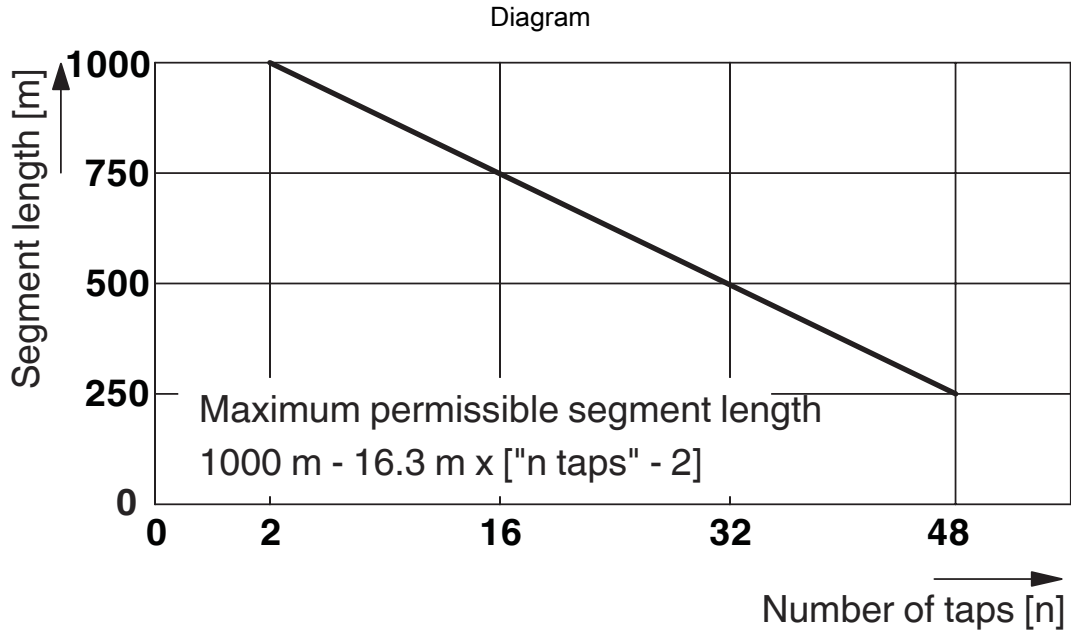


Tree structure

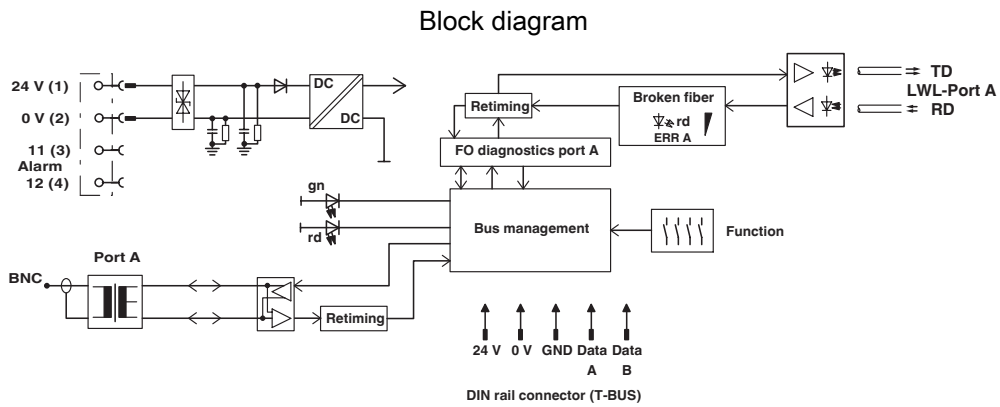
Schematic diagram



Device connections



Segment length is dependent on number of taps used



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## Environmental product compliance

### 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.)	No substance above 0.1 wt%
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