PSI-MOS-DNET/FO 850 T - FO converters

2313986

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CRA-READY



Fiber optic converter with integrated optical diagnostics, for DeviceNet™, CAN, CANopen® up to 1000 kbps, T-coupler, interfaces: 1 x CAN, 1 x Alarm, 2 x FO (B-FOC), 850 nm, for PCF/fiberglass (multi-mode)

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. Thanks to extended functions, the modular devices in the PSI-MOS-DNET/FO... series support network expansion that is not dependent on the data rate.

Your advantages

- Data rates of up to 1 Mbps
- Supply voltage and data signals routed through the DIN rail connectors
- Can be combined with PSI-MOS FO converters in a modular way thanks to DIN rail connectors
- Automatic data rate detection or fixed data rate setting via DIP switches
- Integrated optical diagnostics for continuous monitoring of FO paths
- High-quality electrical isolation between all interfaces (DeviceNet // fiber optic ports // power supply // DIN rail connector)
- Connections can be plugged in via a COMBICON screw terminal block
- Redundant power supply possible by means of optional system power supply unit
- Floating switch contact for advance warning of critical FO paths





Commercial data

Item number	2313986
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC213
GTIN	4046356513814
Weight per piece (including packing)	265.2 g
Weight per piece (excluding packing)	245 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Note on application	Only for industrial use
Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

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	543 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	247 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	102 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	400 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	64 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
Special properties	The product is being prepared for compliance with the Cyber Resilience Act (CRA)

Electrical properties

Electrical isolation	VCC // CAN
Maximum power dissipation for nominal condition	3.6 W
Test voltage data interface/power supply	1.5 kV_{rms} (50 Hz, 1 min.)

Supply

Supply voltage range	11 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC
Typical current consumption	180 mA (24 V DC)
Max. current consumption	≤ 2 A (For operation in a joining station, via the DIN rail connector)

Function

Status and diagnostic indicators	LEDs: VCC (supply voltage), NET (Mod/Net status), FO signal (fiber optic signal quality), ERR (broken fiber, fiber optic)

Output data

Switching

Output name	Relay output

Number of outputs	1
Contact switching type	N/O contact
Minimum switching voltage	11 V DC
Maximum switching voltage	30 V DC

Connection data

Supply

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

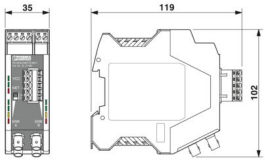
No. of channels	2
Transmit capacity, minimum	-17.6 dBm (50/125 µm)
	-14.6 dBm (62,5/125 µm)
	-4 dBm (200/230 µm)
Transmission protocol	Protocol transparent for CAN interface
Connection method	B-FOC (ST®)
Wavelength	850 nm
Minimum receiver sensitivity	-29 dBm (50/125 µm)
	-29 dBm (62,5/125 µm)
	-28.1 dBm (200/230 µm)
Transmission medium	PCF fiber
	Multi-mode fiberglass

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

Transmission speed	≤ 1 Mbps (Configurable via DIP switches)
Connection method	COMBICON plug-in screw terminal block
No. of channels	2 (CAN_High / CAN_Low)
Tightening torque	0.56 Nm ... 0.79 Nm
Transmission length	≤ 5000 m (Dependent on the data rate and the protocol used)
Number of bus devices	≤ 64 (per potential segment)
	≤ 63 (DeviceNet™, can be addressed logically)
	≤ 128 (CANopen®, can be addressed logically)
Termination resistor	124 Ω (Integrated and ready to be switched)
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
Max. AWG conductor cross-section, flexible	14
Min. AWG conductor cross-section, flexible	24
Single-wire/terminal point, rigid AWG max.	14

Single-wire/terminal point, rigid AWG min.	24
Stripping length	7 mm
Transmission medium	2-wire twisted pair, shielded
Transmission method	CSMA/CA
File format/coding	Bit stuffing, NRZ

Dimensions

Dimensional drawing	
Width	35 mm
Height	102 mm
Depth	119 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	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 IIC T4 Gc
Certificate	PxCIF10ATEX2313986X
Note	Please follow the special installation instructions in the documentation!

UL, USA/Canada

Identification	508 Listed

Corrosive gas test

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

Shipbuilding

Identification	DNV GL

Shipbuilding data

Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

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

Noise emission

Standards/regulations	EN 55011

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
Signal	± 2 kV
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Input	± 0.5 kV
Signal	± 1 kV
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.

Standards and regulations

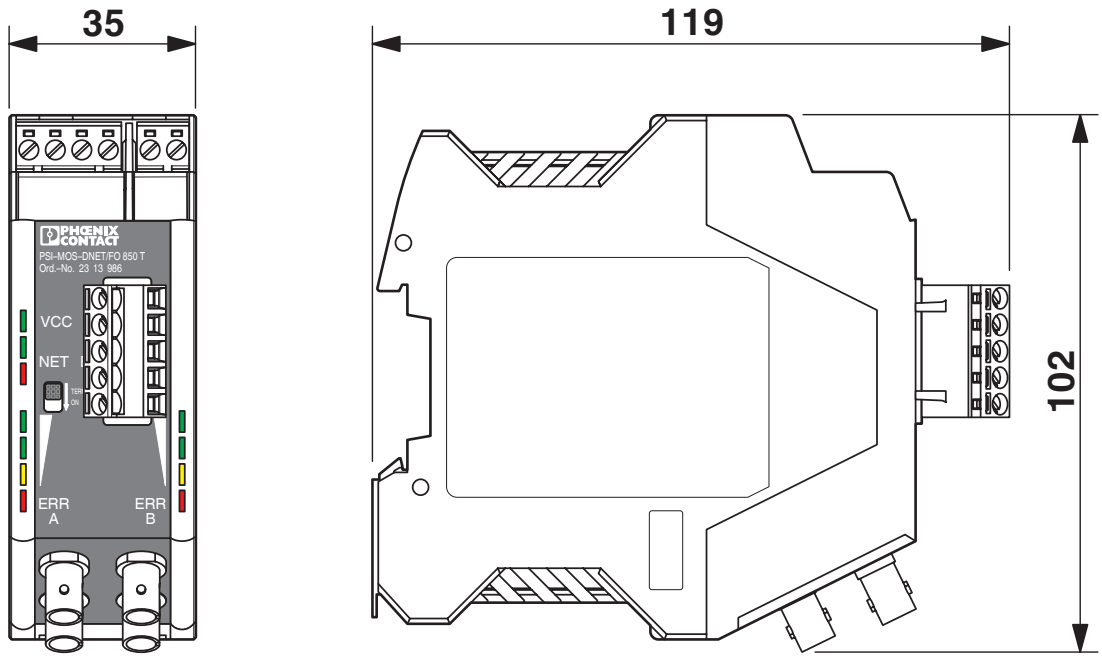
Free from substances that could impair the application of coating	VDMA 24364:2018-05

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

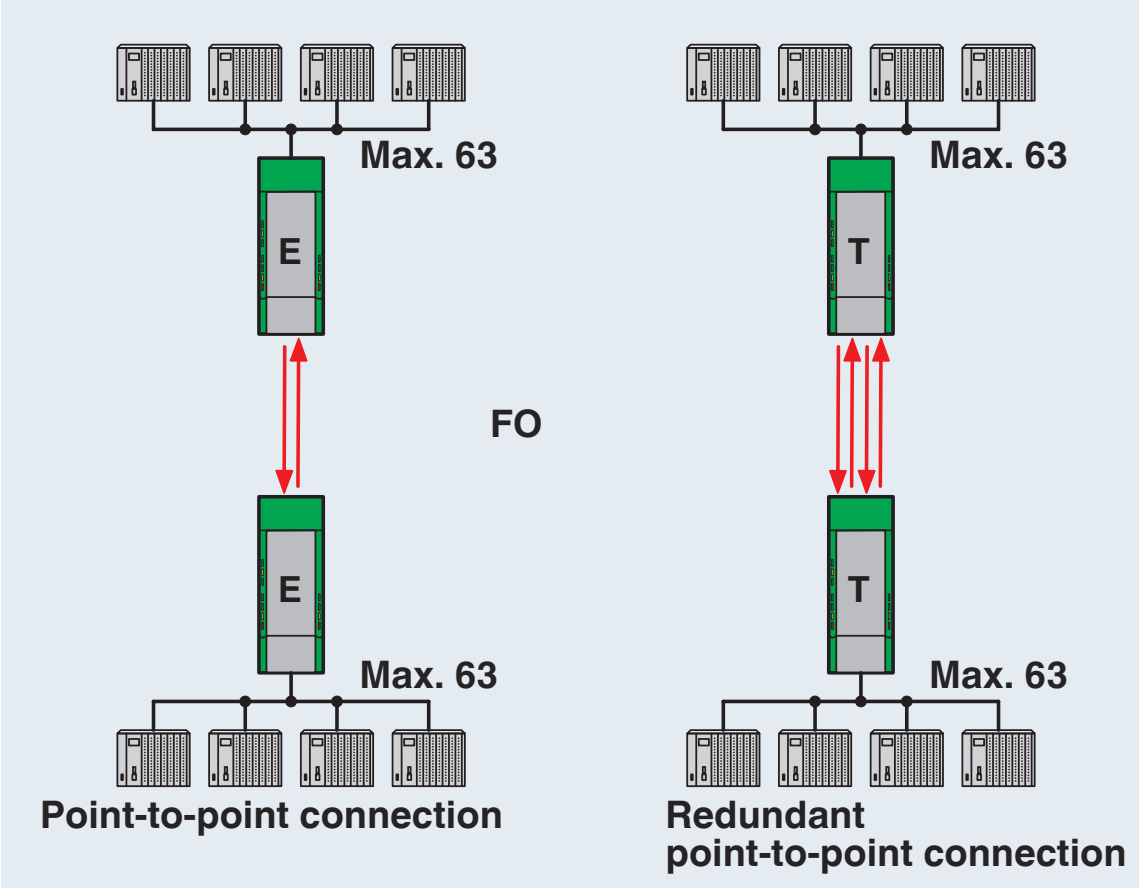
Drawings

Dimensional drawing



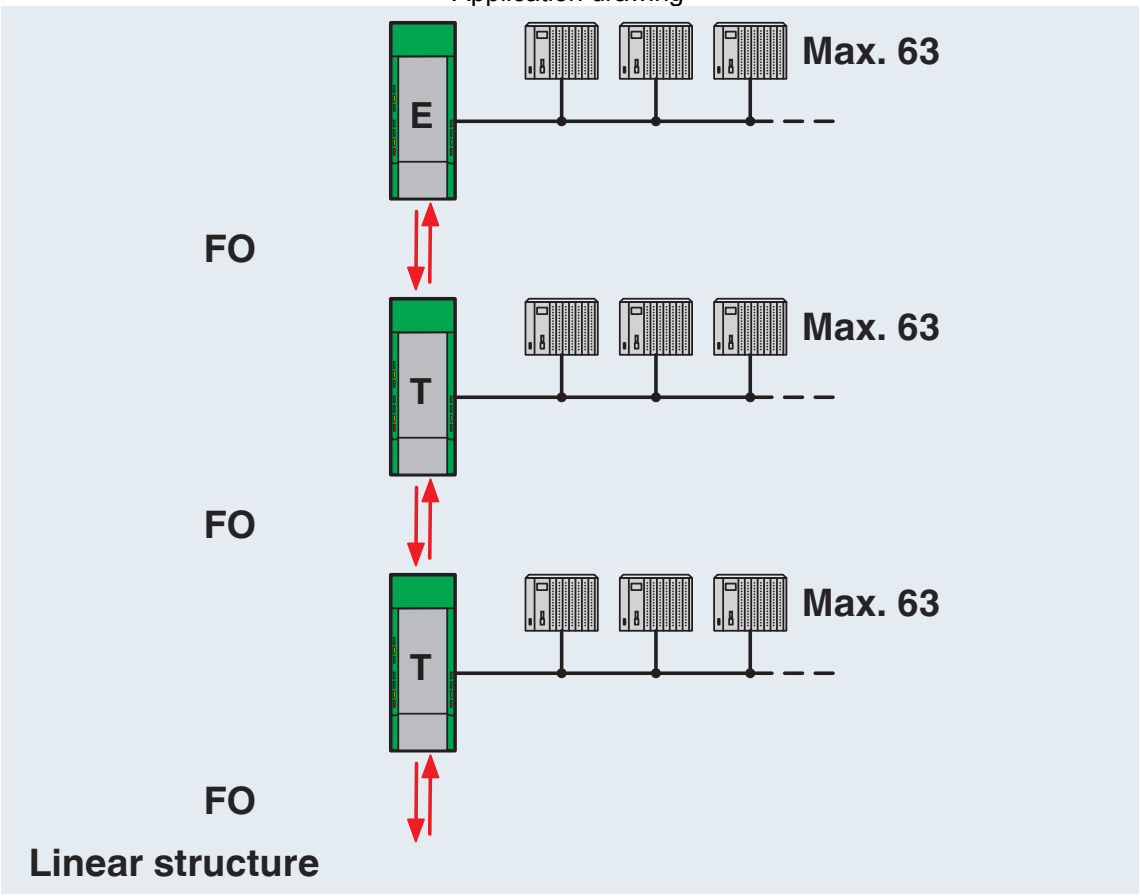
Housing dimensions

Application drawing



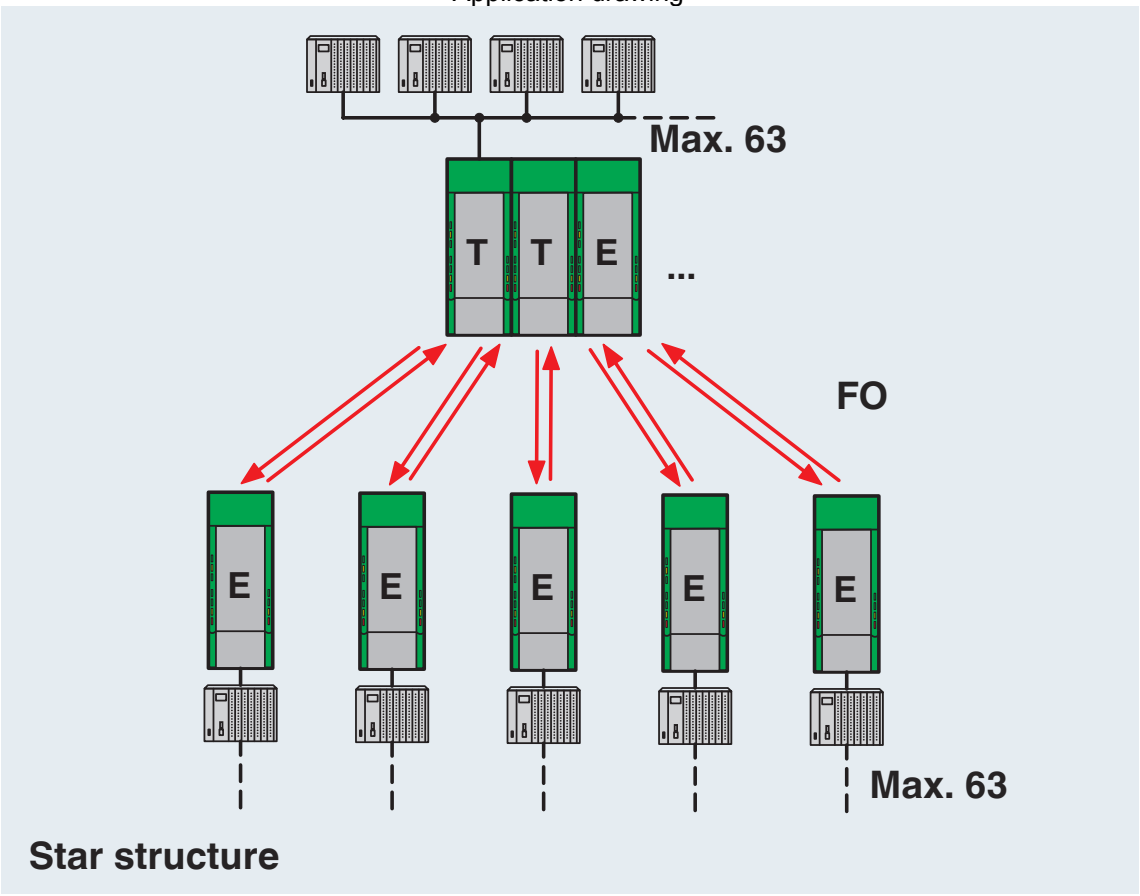
Point-to-point connection

Application drawing



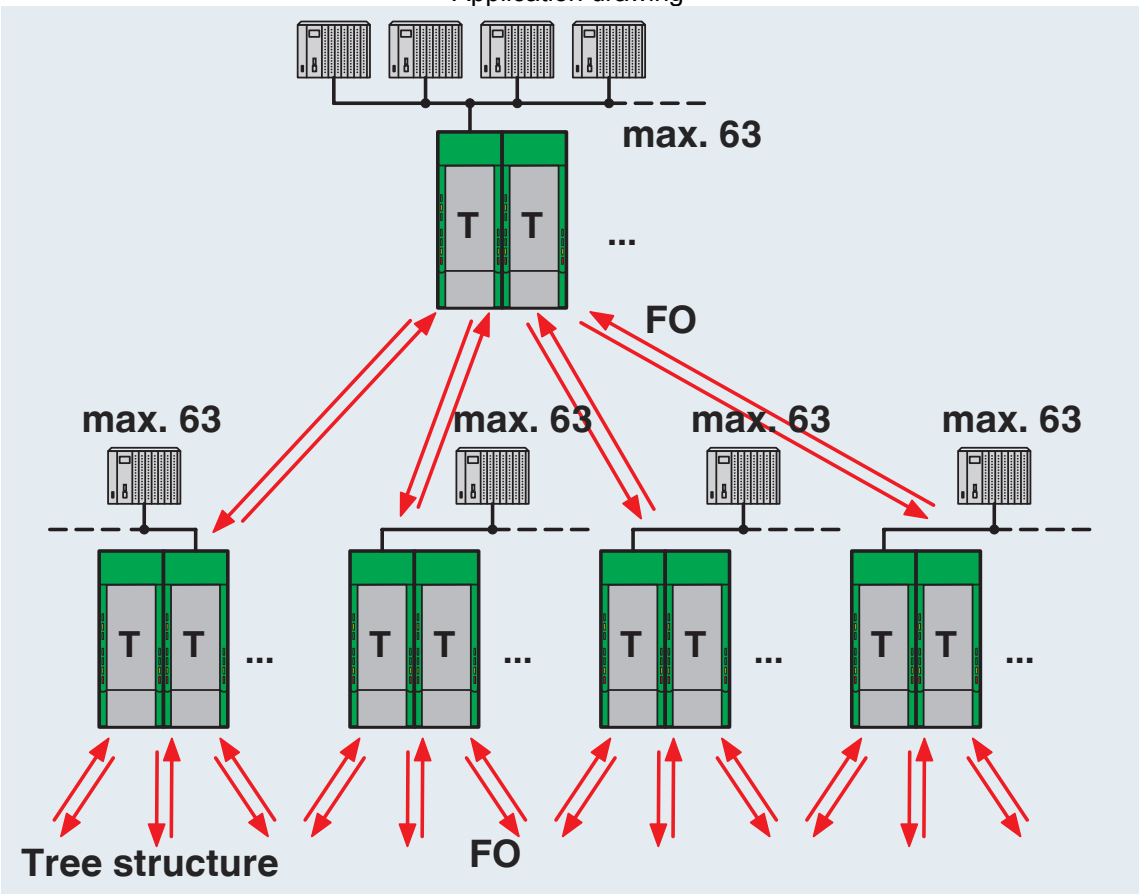
Line structure

Application drawing



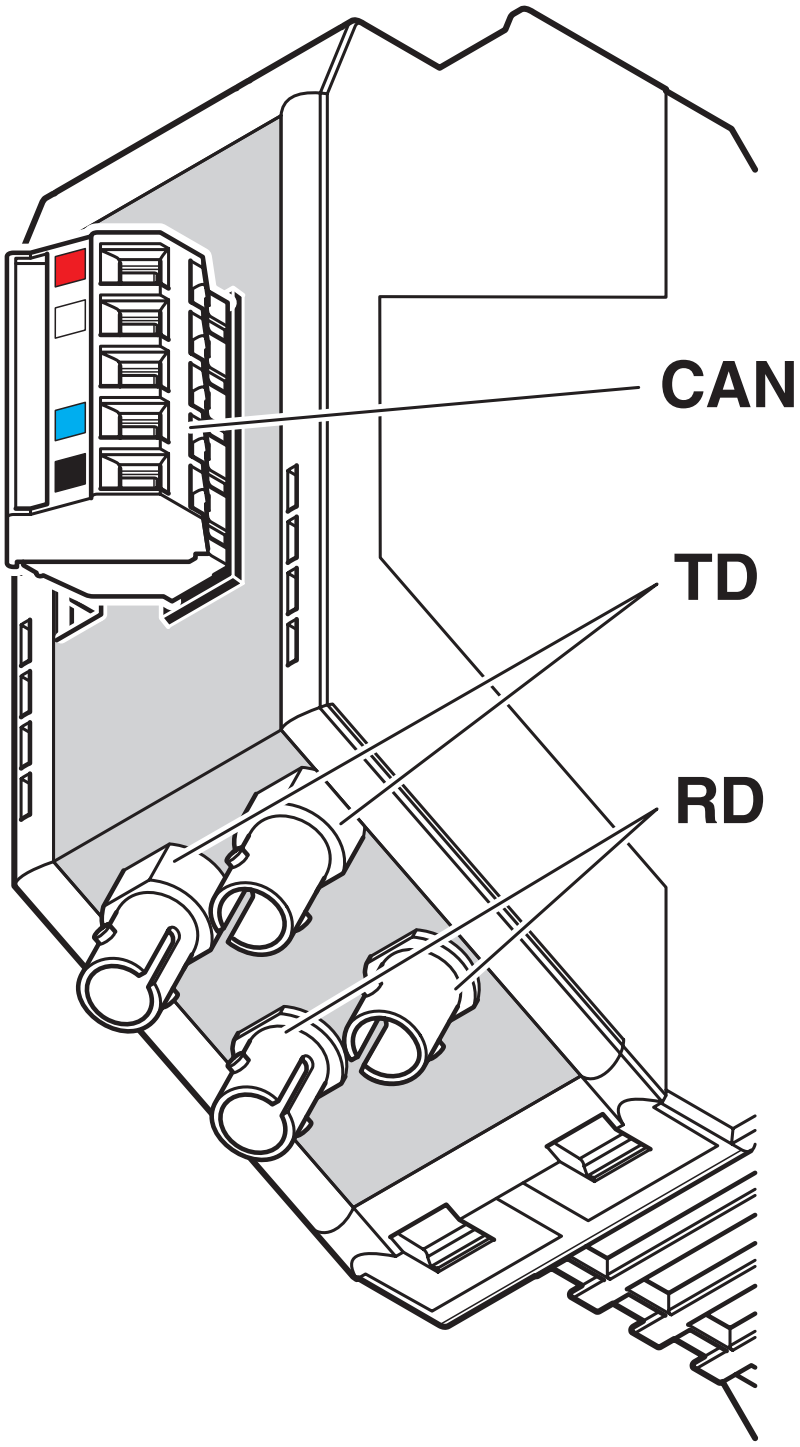
Star structure

Application drawing



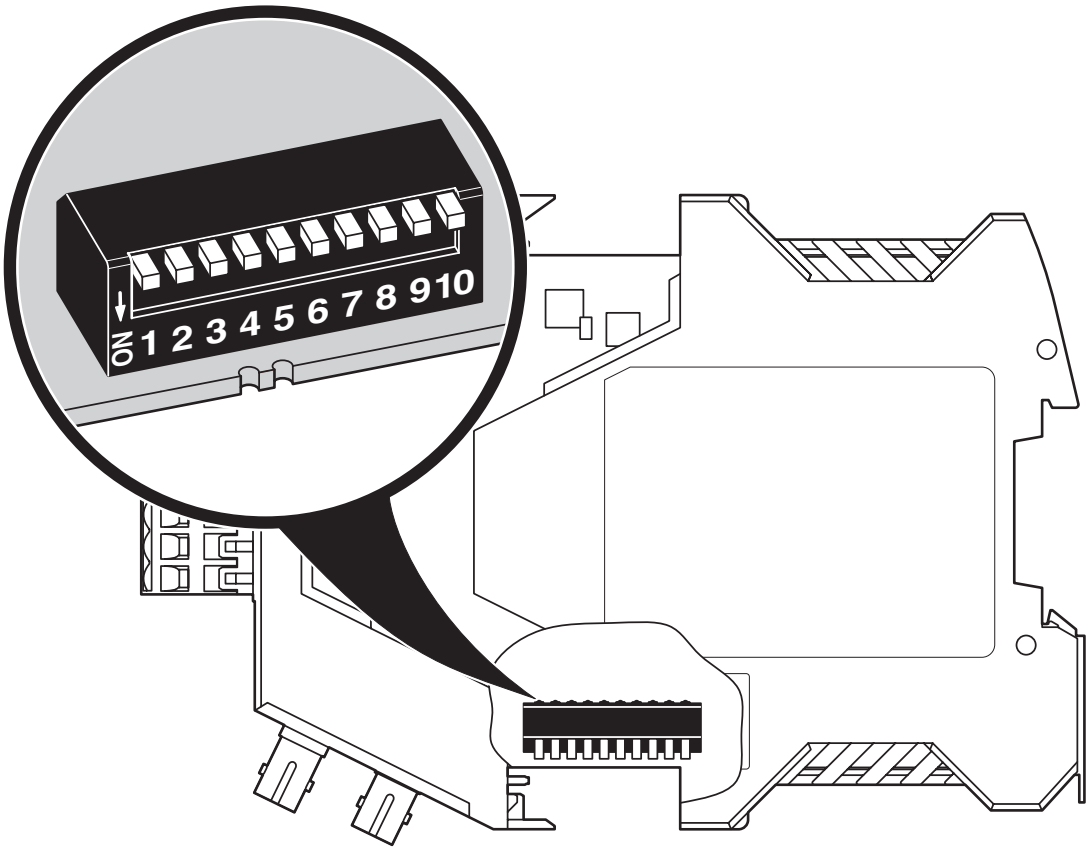
Tree structure

Schematic diagram



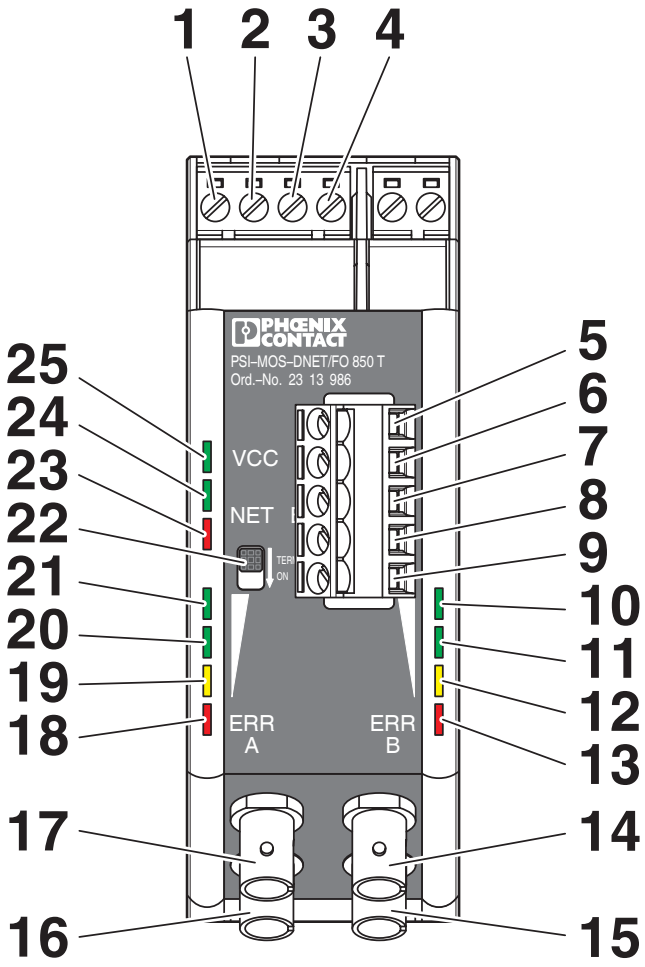
Device connections

Schematic diagram



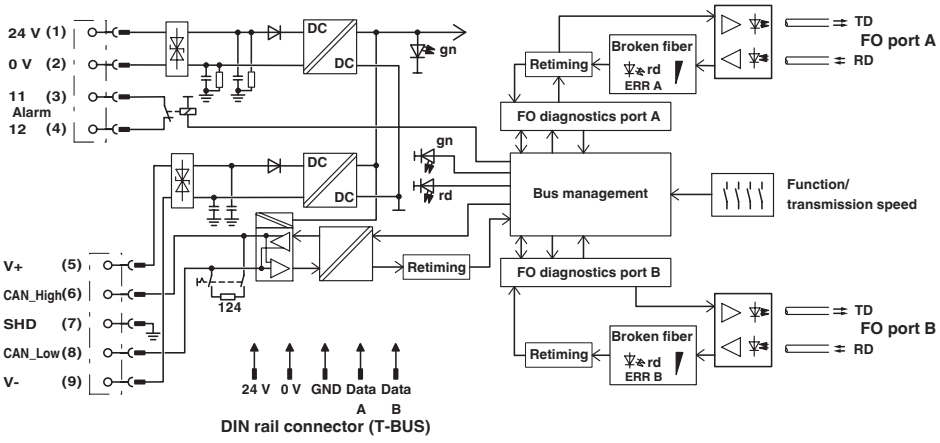
DIP switches

Schematic diagram



Front view

Block diagram



Basic circuit diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2313986

UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

DNV GL
Approval ID: TAA00001KR_7

Classifications

ECLASS

ECLASS-13.0	19170411
ECLASS-15.0	19170411

ETIM

ETIM 10.0	EC001467

UNSPSC

UNSPSC 21.0	43223323

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	ca07123c-8135-4f24-ae08-9a143799ec37

EF3.1 Climate Change

CO2e kg	20.297 kg CO2e

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