

# PSI-MOS-RS232/FO 660 T - FO converters



2708410

<https://www.phoenixcontact.com/us/products/2708410>

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FO converter with integrated optical diagnostics, alarm contact, for RS-232 interfaces up to 115.2 kbps, T-coupler with two FO interfaces (FSMA), 660 nm, for polymer/PCF fiber cable

## Your advantages

- Supply voltage and data signals routed through the DIN rail connectors
- Connections can be plugged in via a COMBICON screw terminal block
- 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
- Intrinsically safe fiber optic interface (Ex op is) for direct connection to devices in zone 1
- Integrated optical diagnostics for continuous monitoring of FO paths
- Floating switch contact for advance warning of critical FO paths
- Automatic data rate detection for all data rates up to 115.2 kbps



## RS-232

## Commercial data

Item number	2708410
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC215
GTIN	4017918974107
Weight per piece (including packing)	255.9 g
Weight per piece (excluding packing)	195.08 g
Customs tariff number	85176200

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Country of origin	DE
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## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Product properties

Product type	Media converter
Product family	PSI-MOS
MTTF	781 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	322 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	133 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	284 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	53 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	2.4 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
Nominal supply voltage	24 V DC
Typical current consumption	100 mA (24 V DC)
Max. current consumption	120 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

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Connection method	COMBICON plug-in screw terminal block
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	2
Transmit capacity, minimum	-4.6 dBm (980/1000 µm) -16.6 dBm (200/230 µm)
Transmission length incl. 3 dB system reserve	100 m (F-P 980/1000 230 dB/km with quick mounting connector) 800 m (F-K 200/230 10 dB/km with quick mounting connector)
Transmission protocol	Transparent to protocol for RS-232 interface
Connection method	F-SMA
Wavelength	660 nm
Minimum receiver sensitivity	-31.2 dBm
Transmission medium	Polymer fiber PCF fiber

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

Serial transmission speed	4.8 Kbps ... 115.2 Kbps
Connection method	D-SUB 9 plug
Transmission length	≤ 15 m
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>
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
Transmission medium	Copper
File format/coding	UART (11 Bit, NRZ)
Data direction switching	Automatic control

## Dimensions

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	980/1000 µm
	200/230 µm
	Polymer fiber
	PCF fiber

## 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
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### 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
	⊕ 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
	Class I, Zone 2, Ex nC nL IIC T5 X
	Class I, Div. 2, Groups A, B, C, D

### Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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## EMC data

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

### 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

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## 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

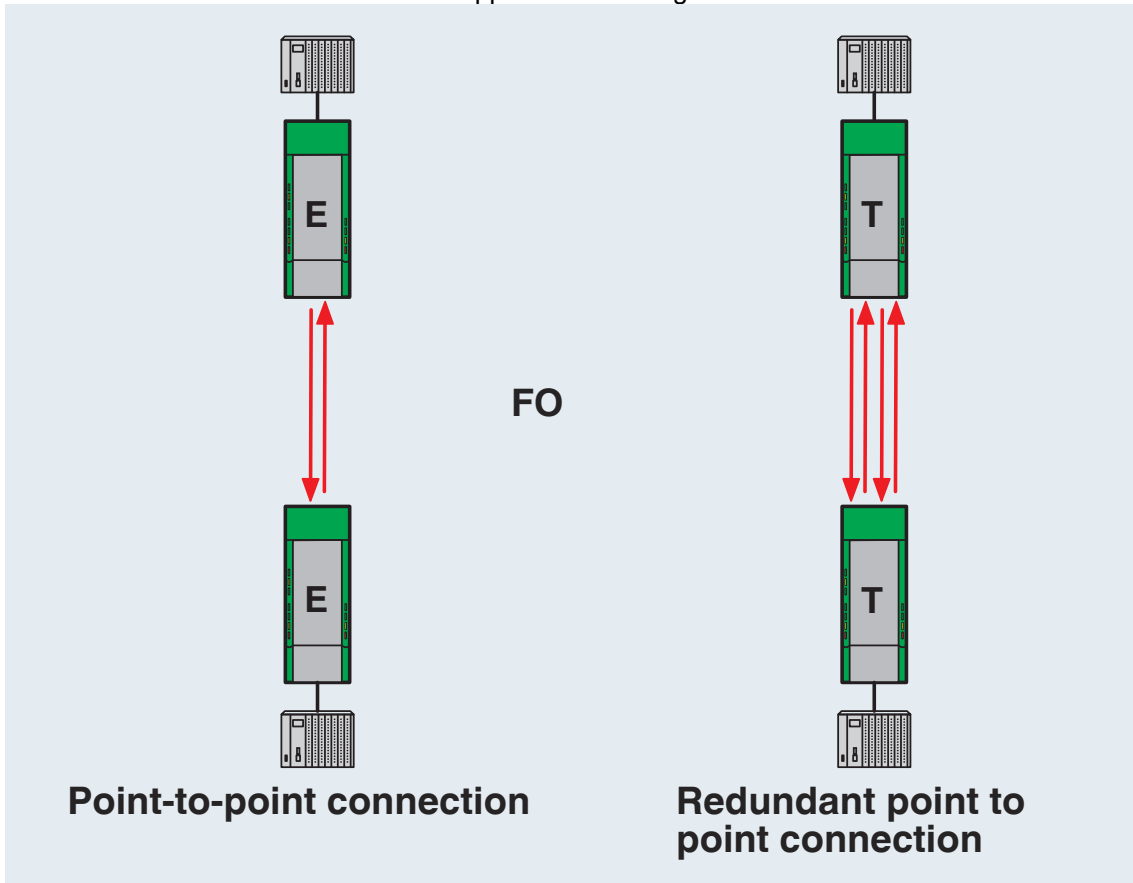
Free from substances that could impair the application of coating	VDMA 24364:2018-05
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## Mounting

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

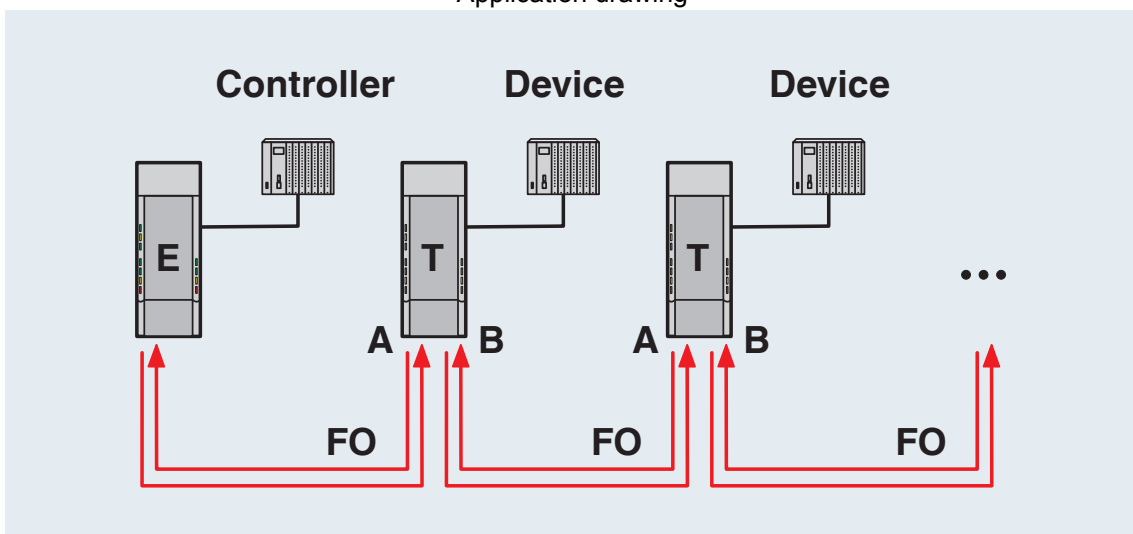
## Drawings

Application drawing



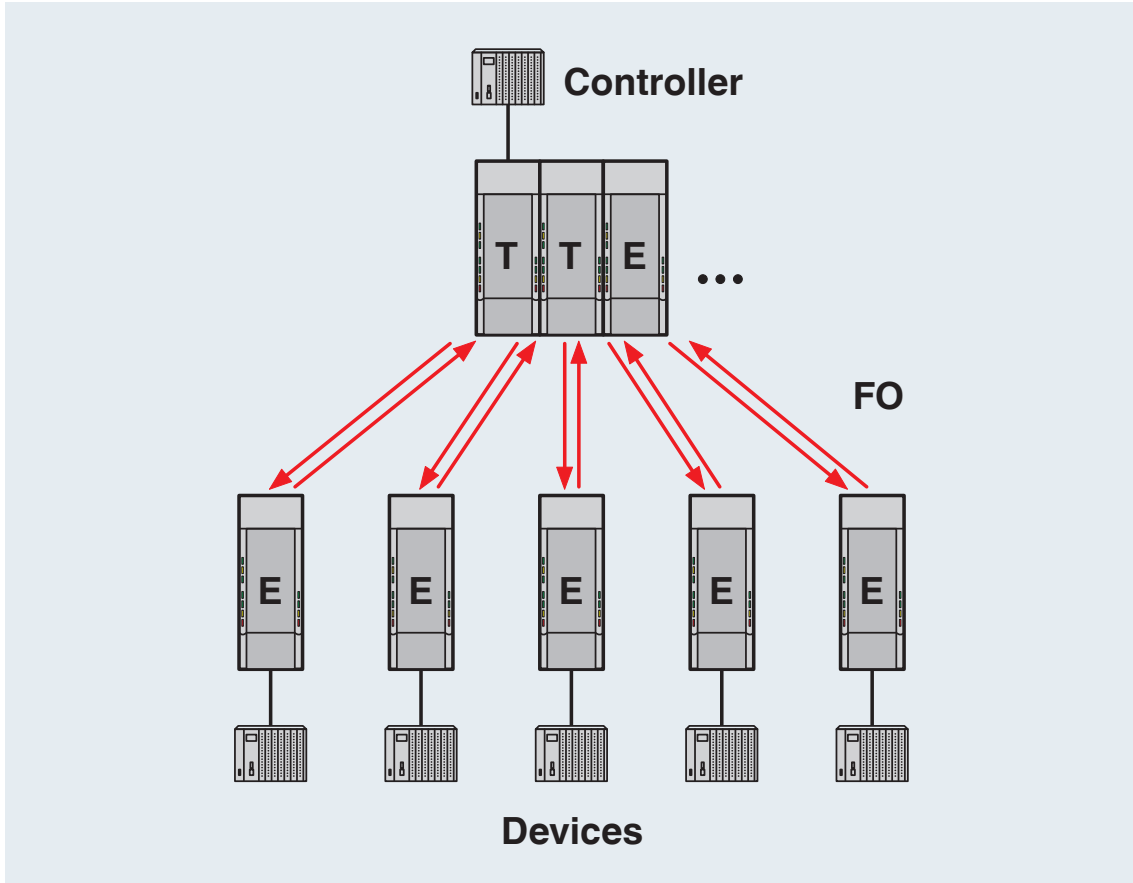
Redundant point-to-point connection

Application drawing



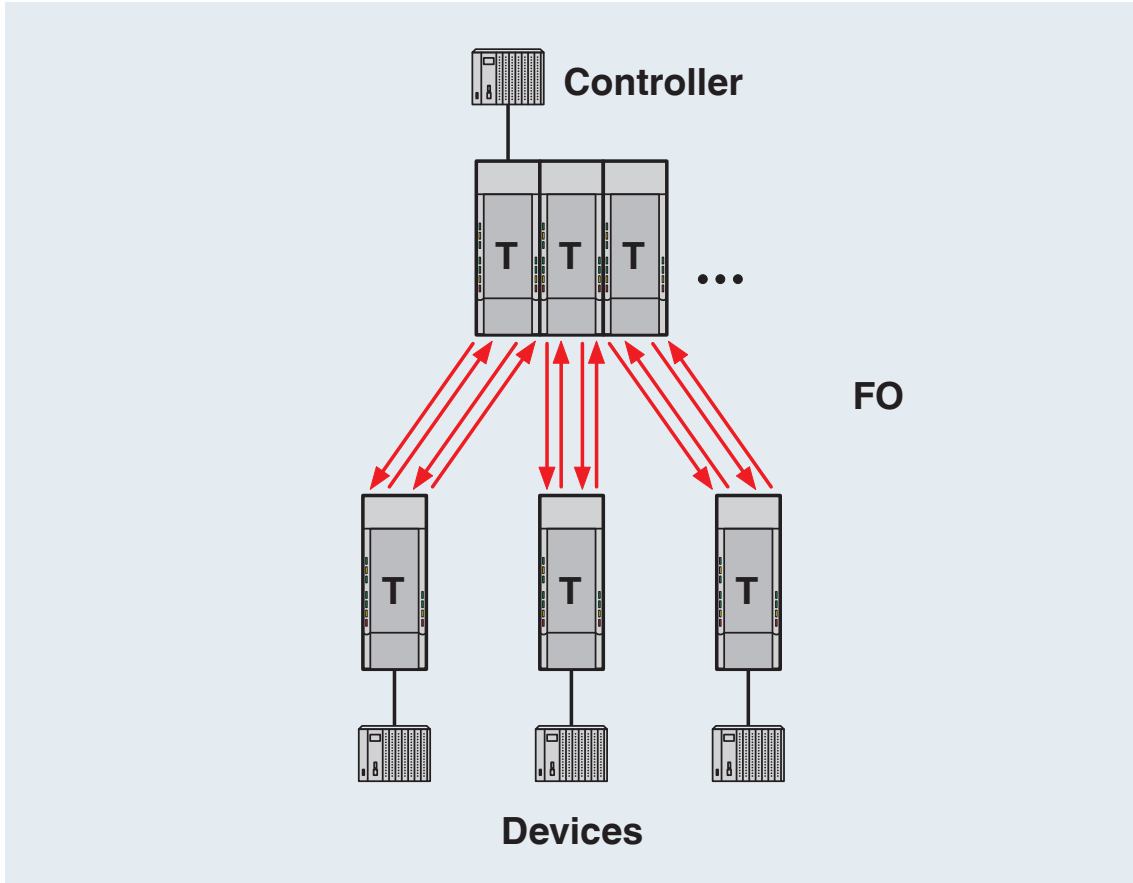
Controller-device line structure

Application drawing



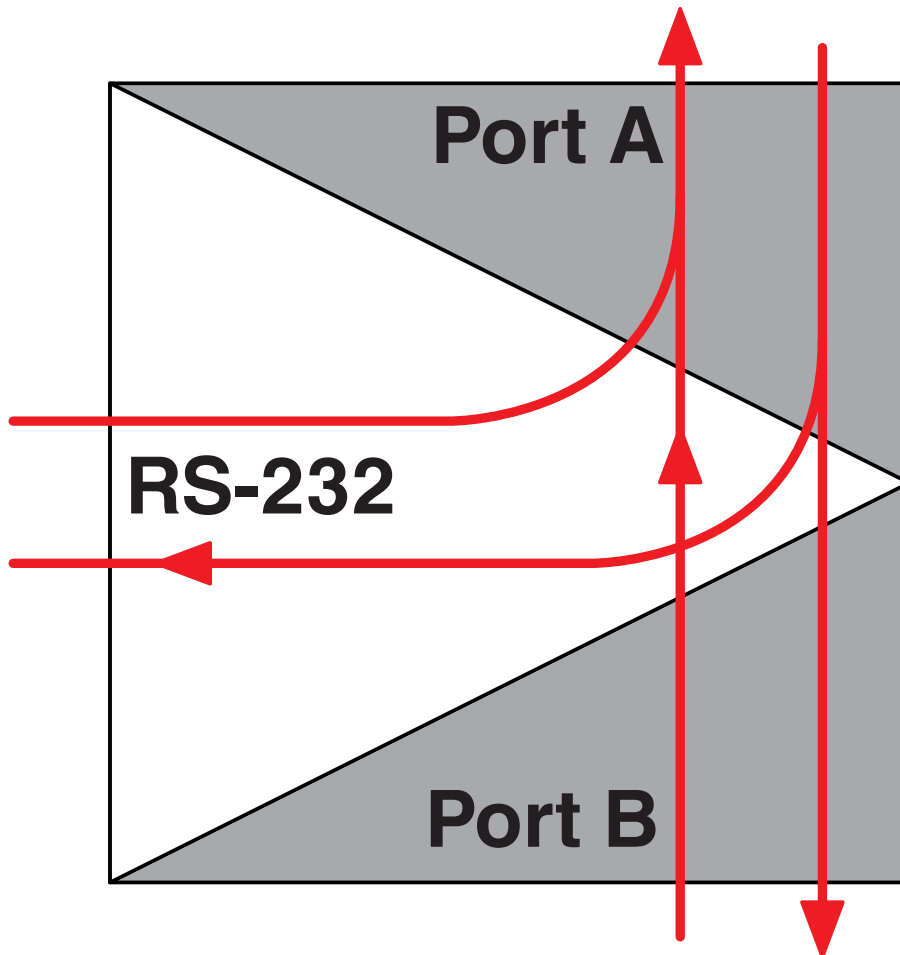
Star structure

Application drawing



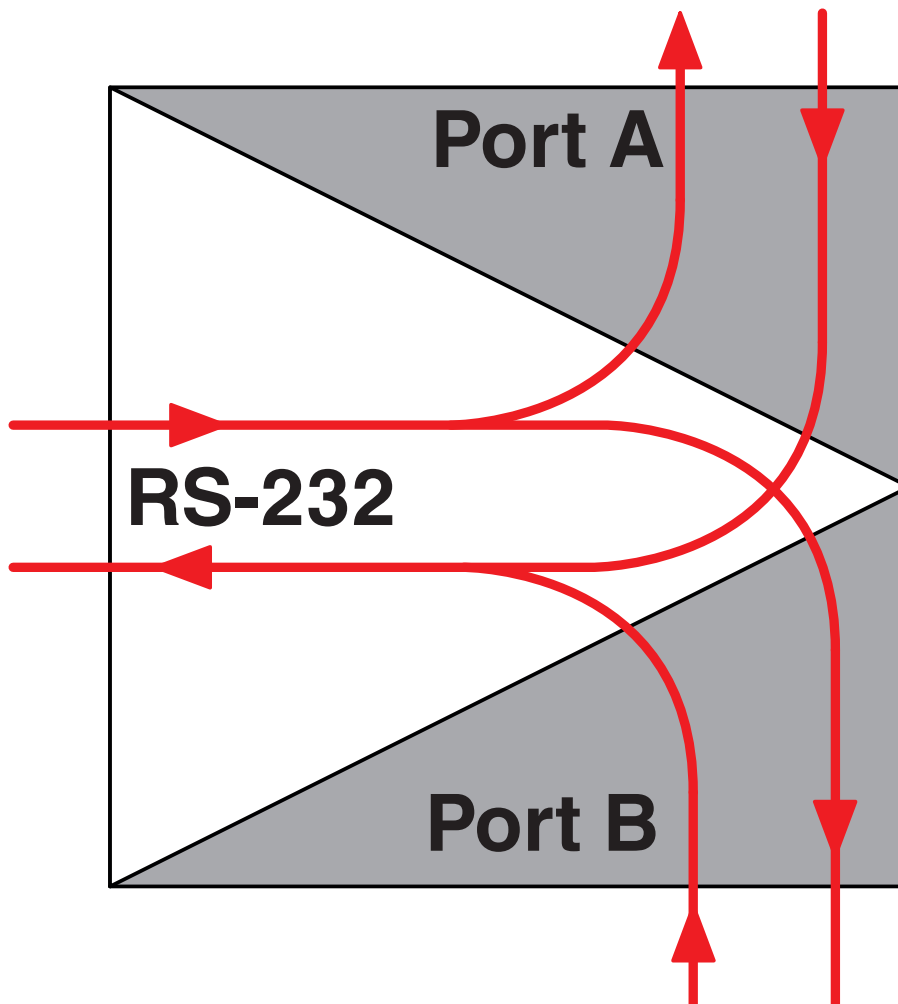
Redundant structure

Schematic diagram



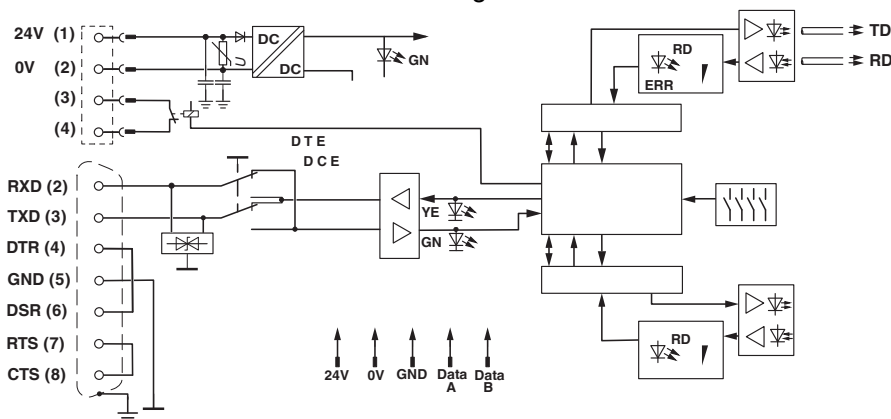
Port assignment in a line structure

Schematic diagram



Port assignment in star structures

Block diagram



\*) only with PSI-MOS.../FO...T

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2708410>



**cULus Recognized**

Approval ID: E238705



**cUL Listed**

Approval ID: E199827



**UL Listed**

Approval ID: E199827

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## Classifications

### ECLASS

ECLASS-13.0	19170411
ECLASS-15.0	19170411

### ETIM

ETIM 10.0	EC001467
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### 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.)	Lead(CAS: 7439-92-1)
SCIP	085eb071-976c-444f-bc6a-b8a699b81205

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Phoenix Contact USA  
 586 Fulling Mill Road  
 Middletown, PA 17057, United States  
 (+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)