

PSI-MOS-RS422/FO 850 E - FO converters



2708355

<https://www.phoenixcontact.com/us/products/2708355>

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FO converter with integrated optical diagnostics, alarm contact, for RS-422/RS-485 4-wire/INTERBUS up to 2 Mbps, terminal device with one FO interface (BFOC), 850 nm, for PCF/fiberglass cable (multimode)

Your advantages

- Supply voltage routed through via 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 (INTERBUS // FO ports // 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
- Intrinsically safe fiber optic interface (Ex op is) for direct connection to devices in zone 1
- Automatic data rate detection for all data rates up to 2 Mbps
- Shipbuilding approval in accordance with DNV GL

Commercial data

Item number	2708355
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC216
GTIN	4017918974053
Weight per piece (including packing)	253.7 g
Weight per piece (excluding packing)	190.238 g
Customs tariff number	85176200
Country of origin	DE

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	1024 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	442 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	183 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	320 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	48 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

Electrical properties

Electrical isolation	VCC // RS-422
Maximum power dissipation for nominal condition	2.88 W
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)

Supply

Supply voltage range	18 V DC ... 30 V DC
Nominal supply voltage	24 V DC (in acc. with UL)
Typical current consumption	120 mA (24 V DC)
Max. current consumption	130 mA
	≤ 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	0.46 A

Connection data

Supply

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	INTERBUS
Transmission channels	2 (1/1) RD, TD, full duplex

Data: optical FO

No. of channels	1
Transmit capacity, minimum	-4.6 dBm (200/230 µm)
	-17.6 dBm (50/125 µm)
	-13.6 dBm (62,5/125 µm)
Transmission length incl. 3 dB system reserve	2800 m (F-K 200/230 8 dB/km with quick mounting connector)
	4200 m (with F-G 50/125 2.5 dB/km)
	4800 m (with F-G 62,5/125 3.0 dB/km)
Transmission protocol	Transparent to protocol for RS-422 interface
Connection method	B-FOC (ST®)
Wavelength	850 nm
Minimum receiver sensitivity	-33.2 dBm
Transmission medium	PCF fiber
	Multi-mode fiberglass

Data: RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1

Serial transmission speed	≤ 2 Mbps
Connection method	Pluggable screw connection
Transmission length	≤ 1000 m (depending on the data rate, with shielded, twisted data cable)
Termination resistor	220 Ω
	100 Ω
	220 Ω
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
Transmission medium	Copper
File format/coding	UART (11 Bit, NRZ)

Dimensions

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Width	35 mm
Height	99 mm
Depth	103 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
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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!

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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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Shipbuilding

Identification	DNV GL
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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 61000-6-2:2005

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

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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

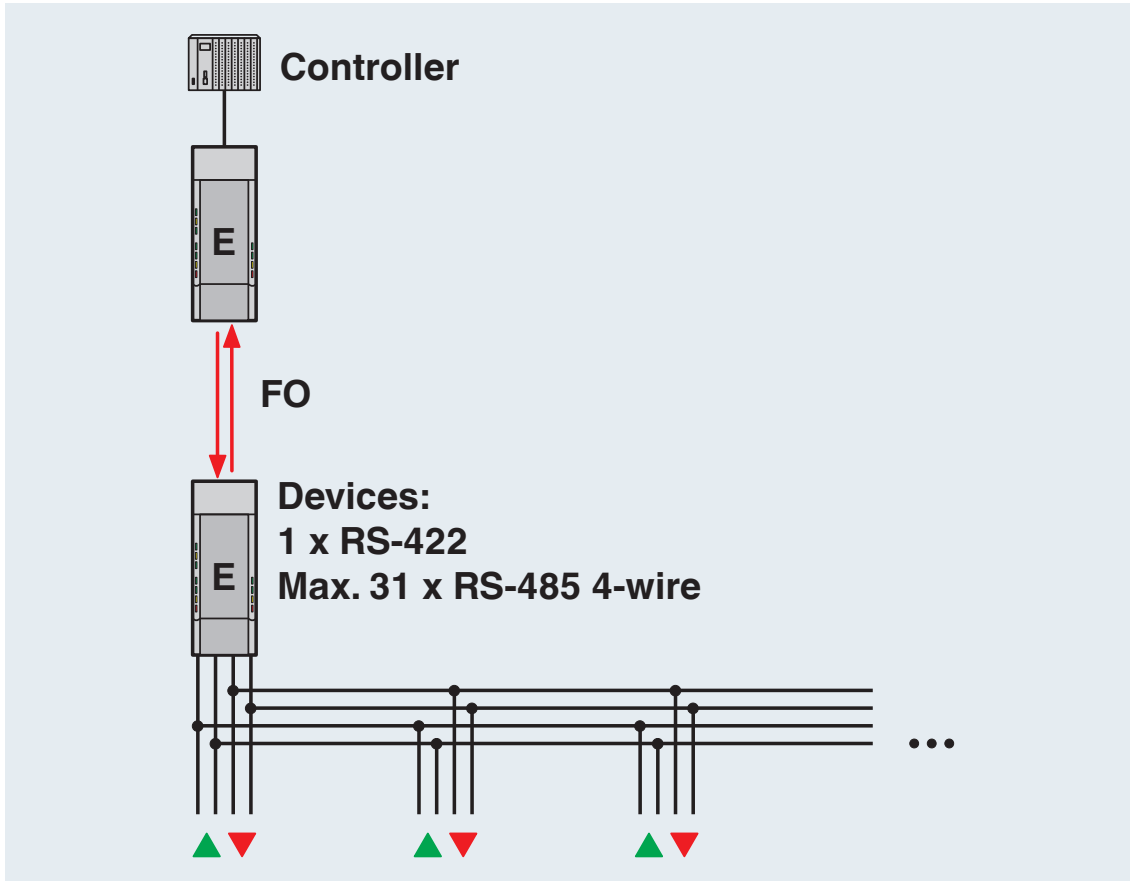
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Mounting

Mounting type	DIN rail mounting
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Drawings

Application drawing



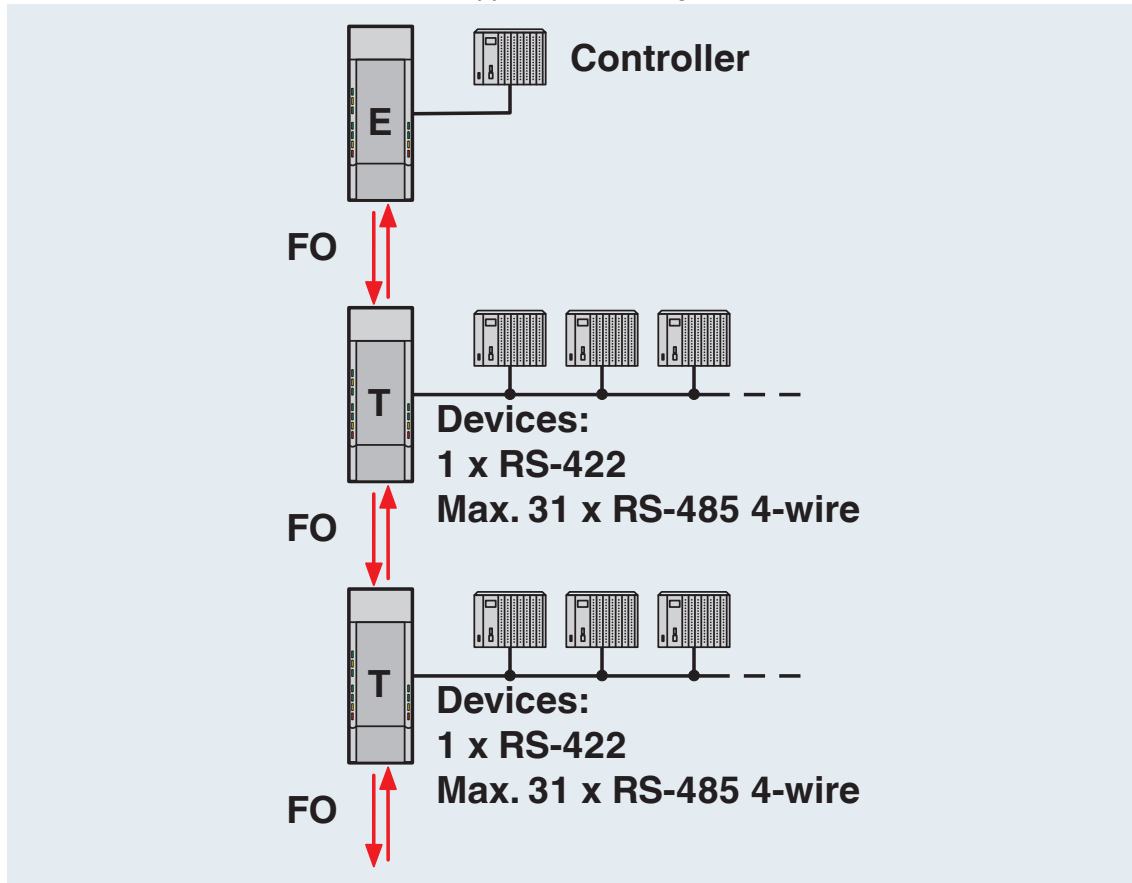
Point-to-point connection

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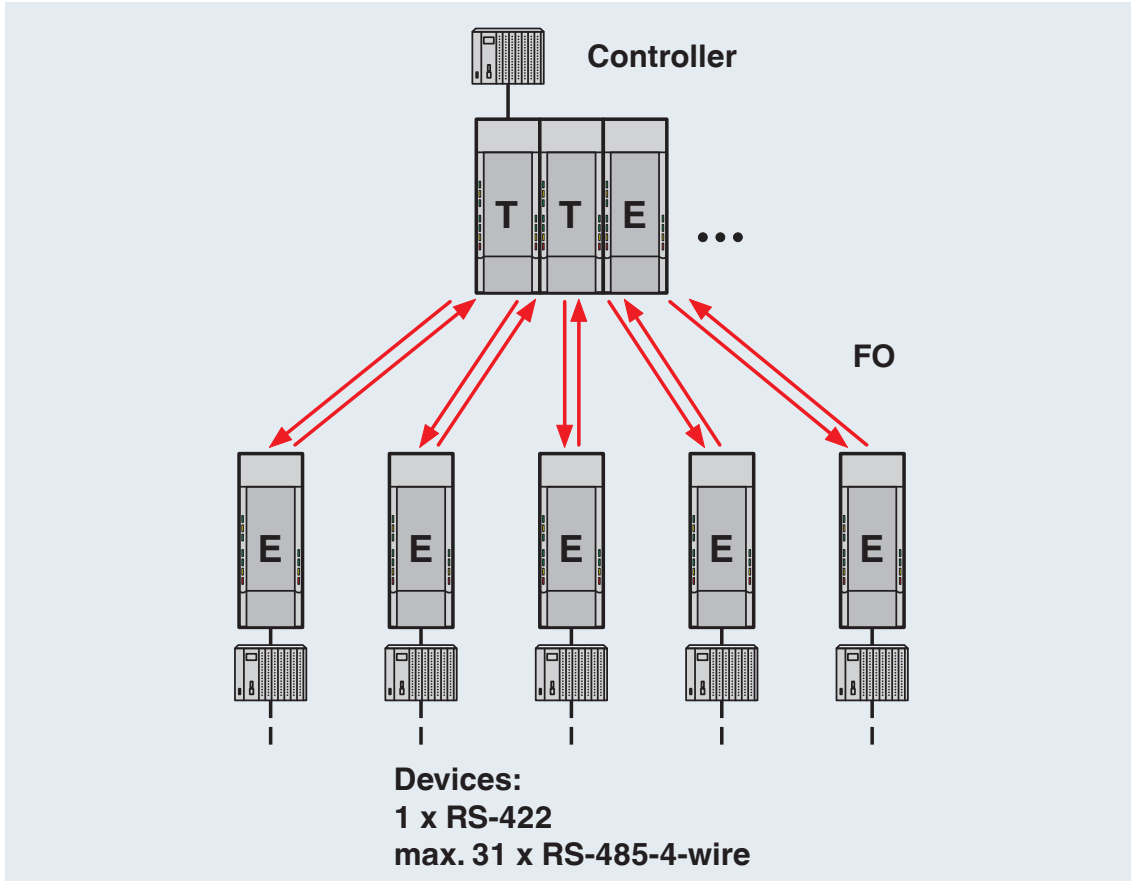
<https://www.phoenixcontact.com/us/products/2708355>

Application drawing



Controller-device line structure

Application drawing



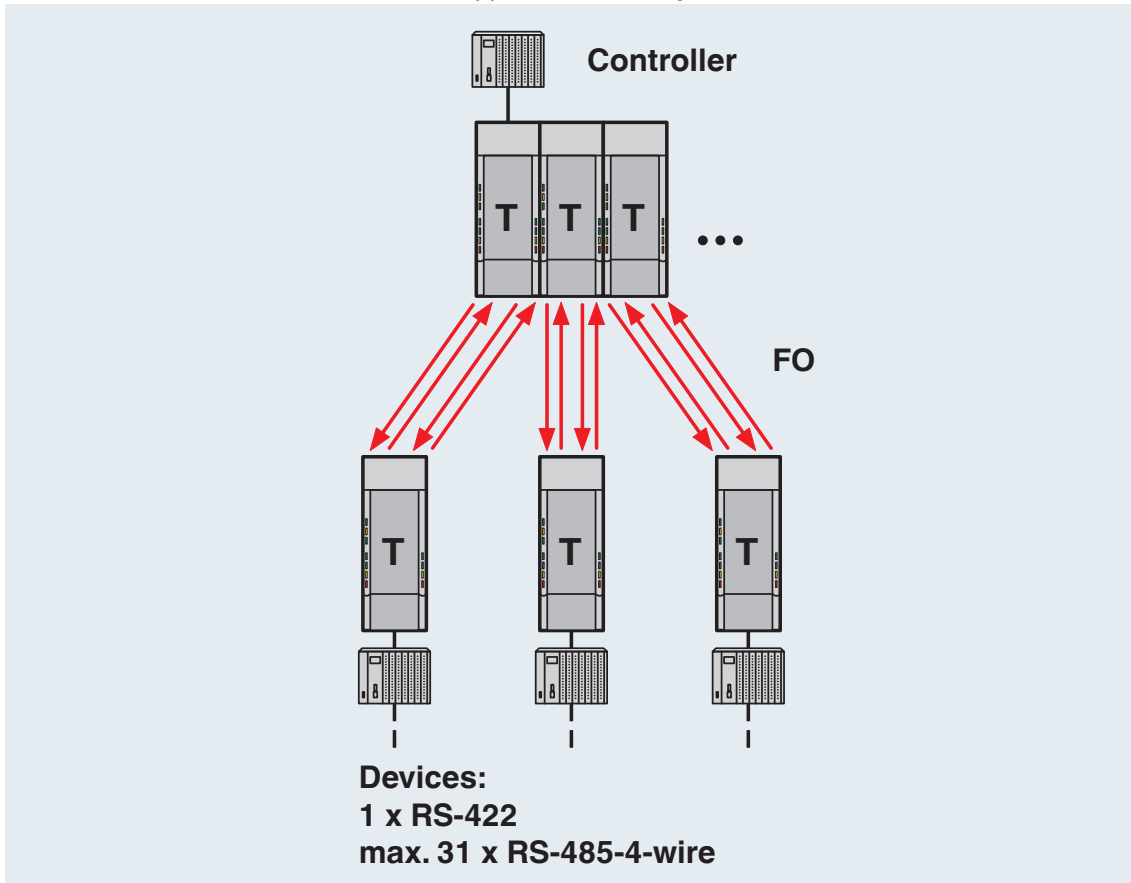
Star structure

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Application drawing

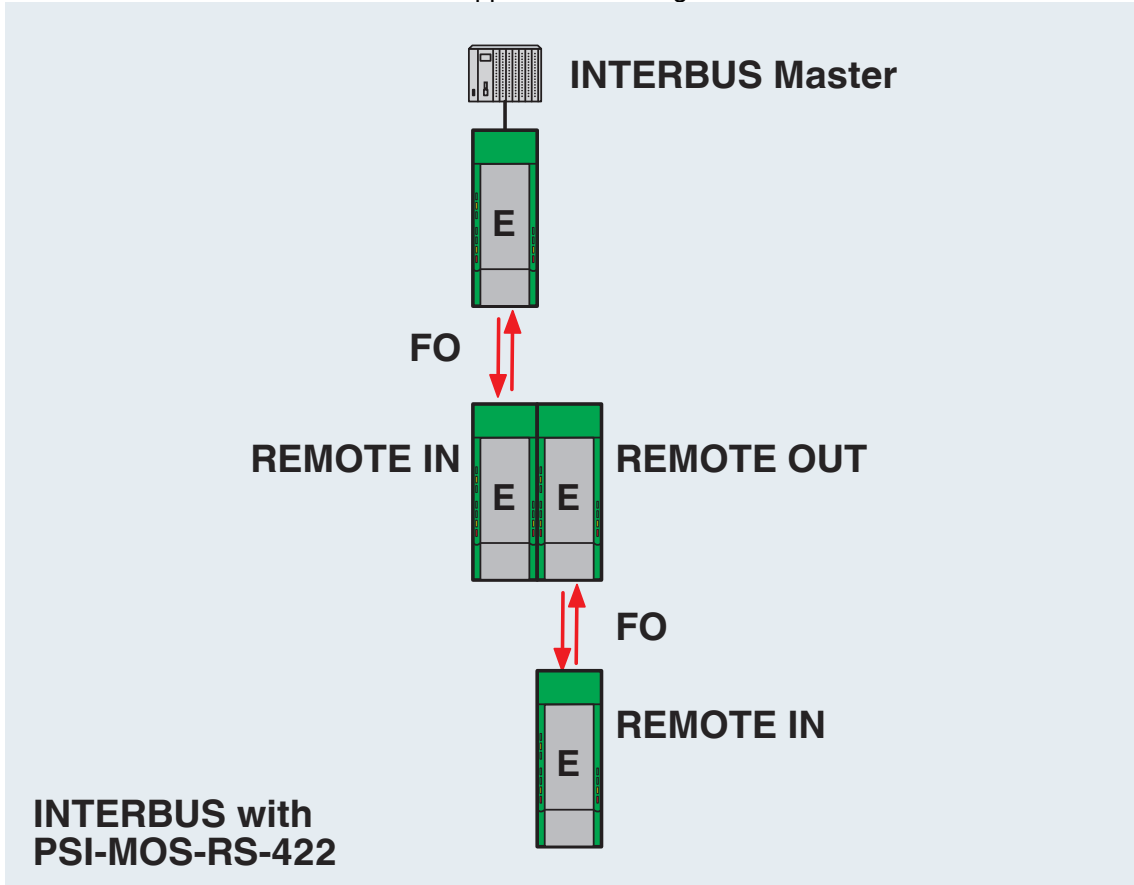


Redundant structure

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Application drawing

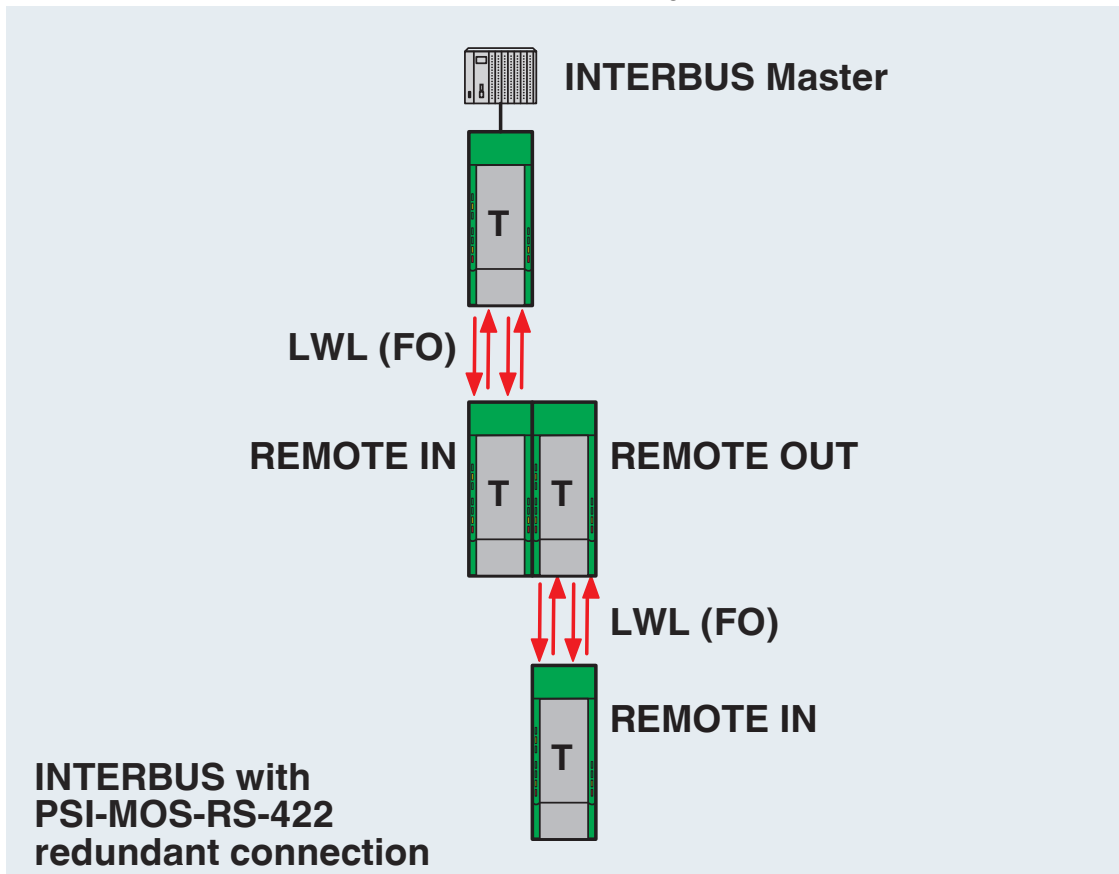


INTERBUS with PSI-MOS-RS422...

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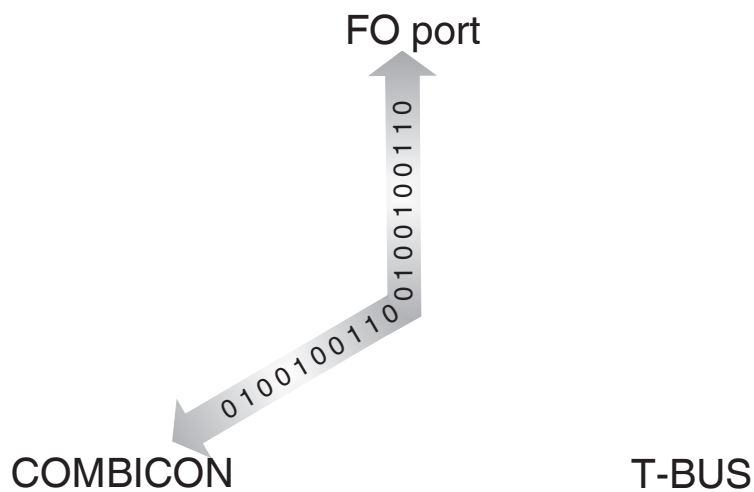
<https://www.phoenixcontact.com/us/products/2708355>

Functional drawing



INTERBUS with PSI-MOS-RS-422
Redundant connection

Schematic diagram

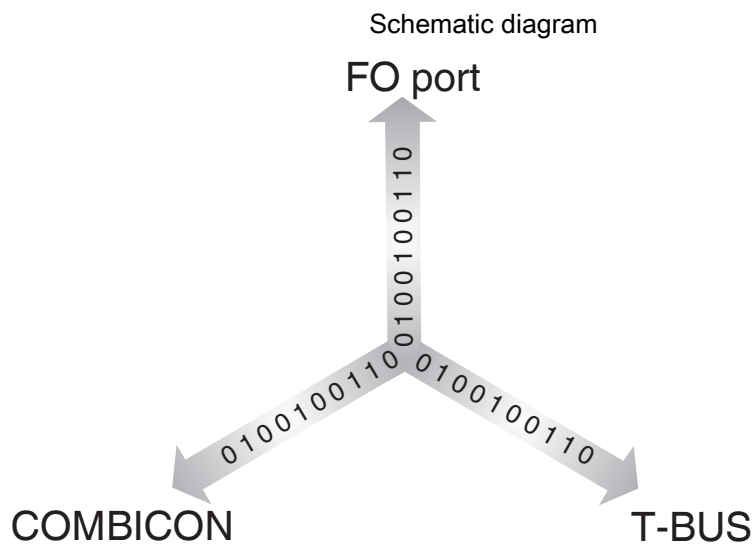


Port assignment for point-to-point connections

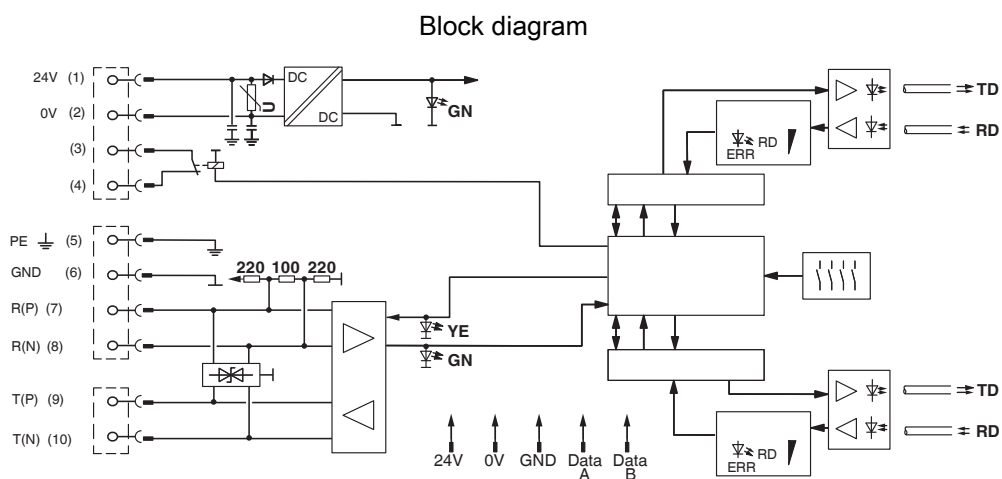
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Port assignment in star structures



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

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Approvals

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cULus Recognized
Approval ID: E238705



DNV GL
Approval ID: TAA00001KR



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	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	184b1afa-0050-4e61-9a2a-a54b91145157

EF3.1 Climate Change

CO2e kg	15.406 kg CO2e
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