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

2708355

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

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CRA-READY



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

ELEKTROGERÄTE RÜCKNAHME

## 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 | 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 | 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)) |
| Special properties | The product is being prepared for compliance with the Cyber Resilience Act (CRA) |

## 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

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|---|---|
| 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 | Ⓔx II 3 G Ex nA nC IIC T4 Gc X |
| Note | Please follow the special installation instructions in the documentation! |

ATEX, FO interface

| | |
|---|---|
| Identification | Ⓔx II (2) G [Ex op is Gb] IIC |
| | Ⓔx 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 |

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 61000-6-2:2005 |

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

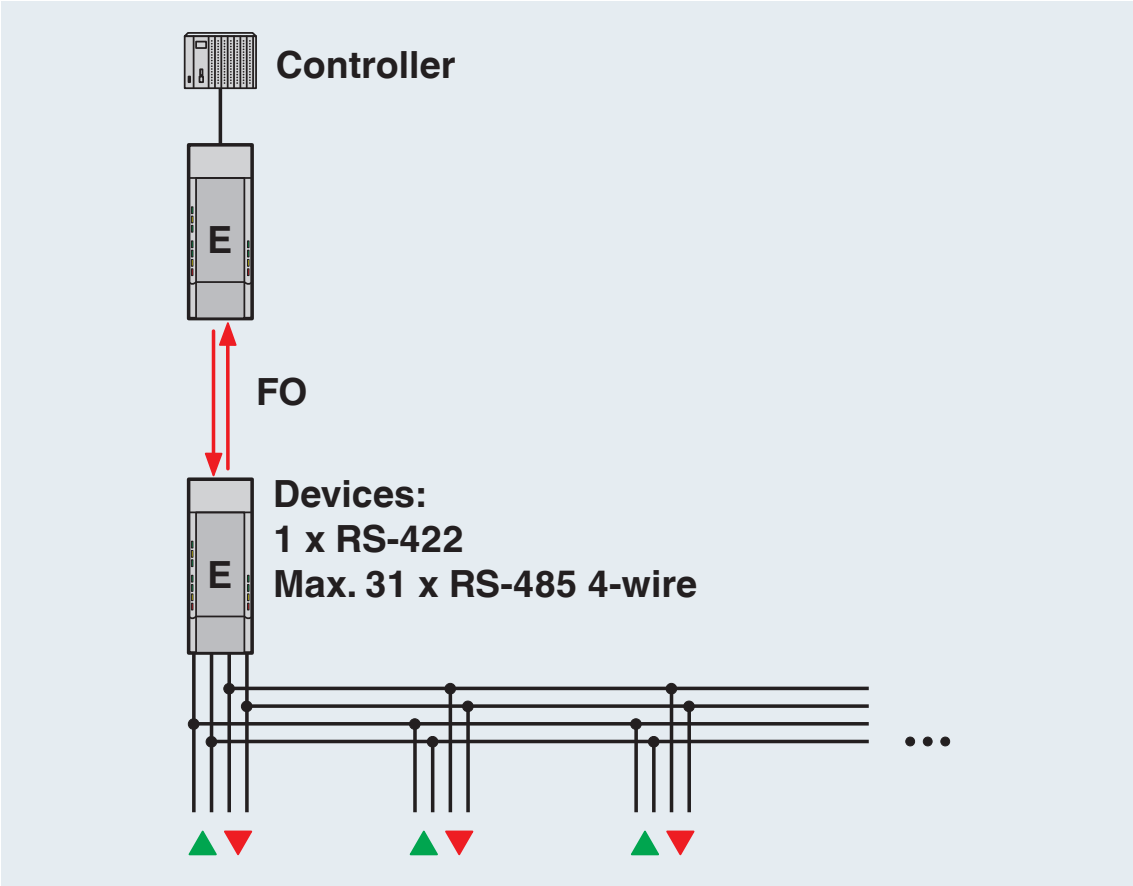
| | |
|---|---|
| Criterion A | Normal operating behavior within the specified limits. |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |

## Mounting

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

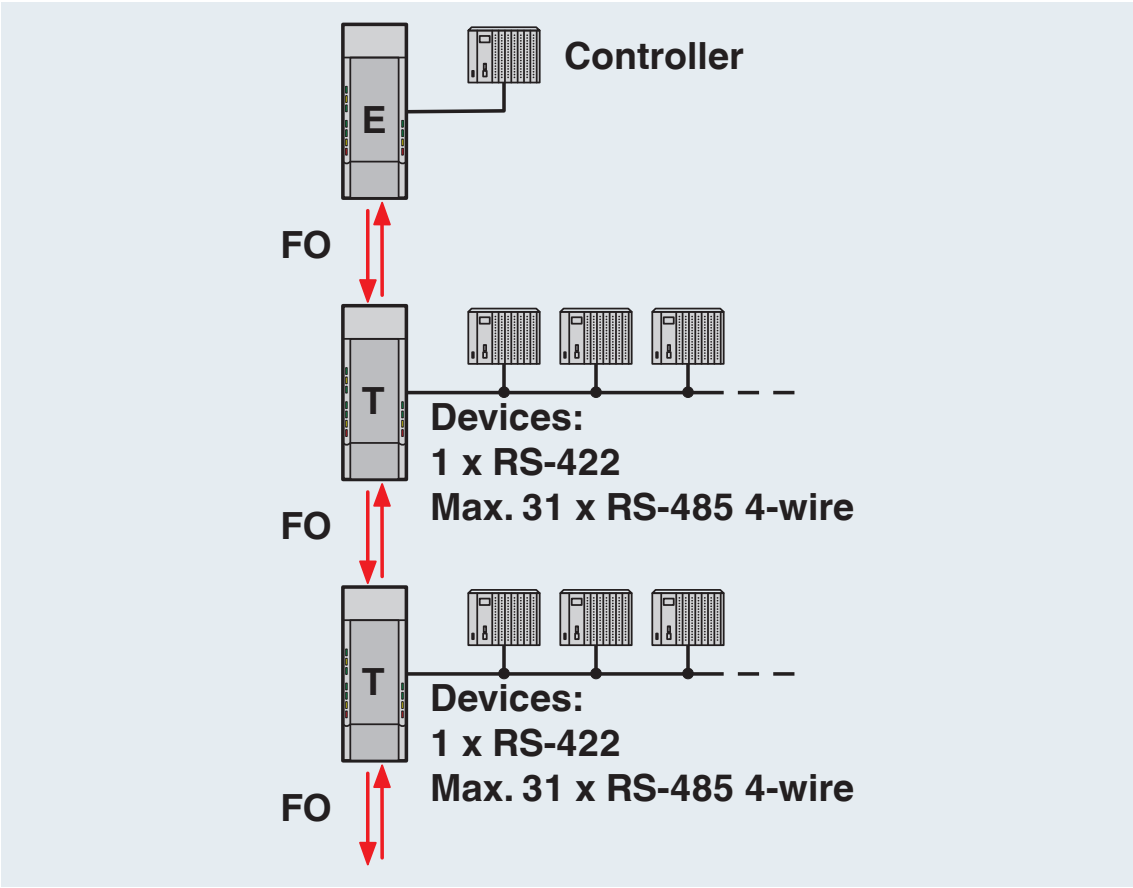
## Drawings

Application drawing



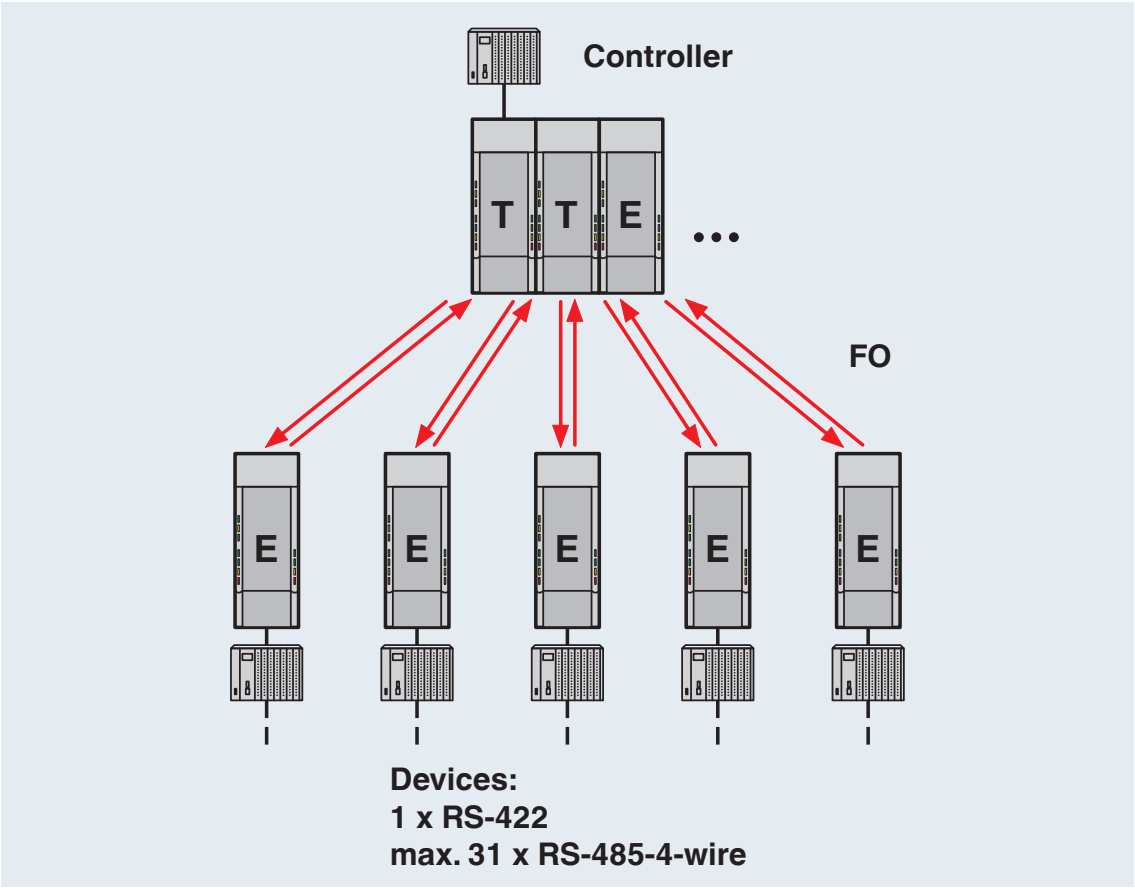

Point-to-point connection

Application drawing



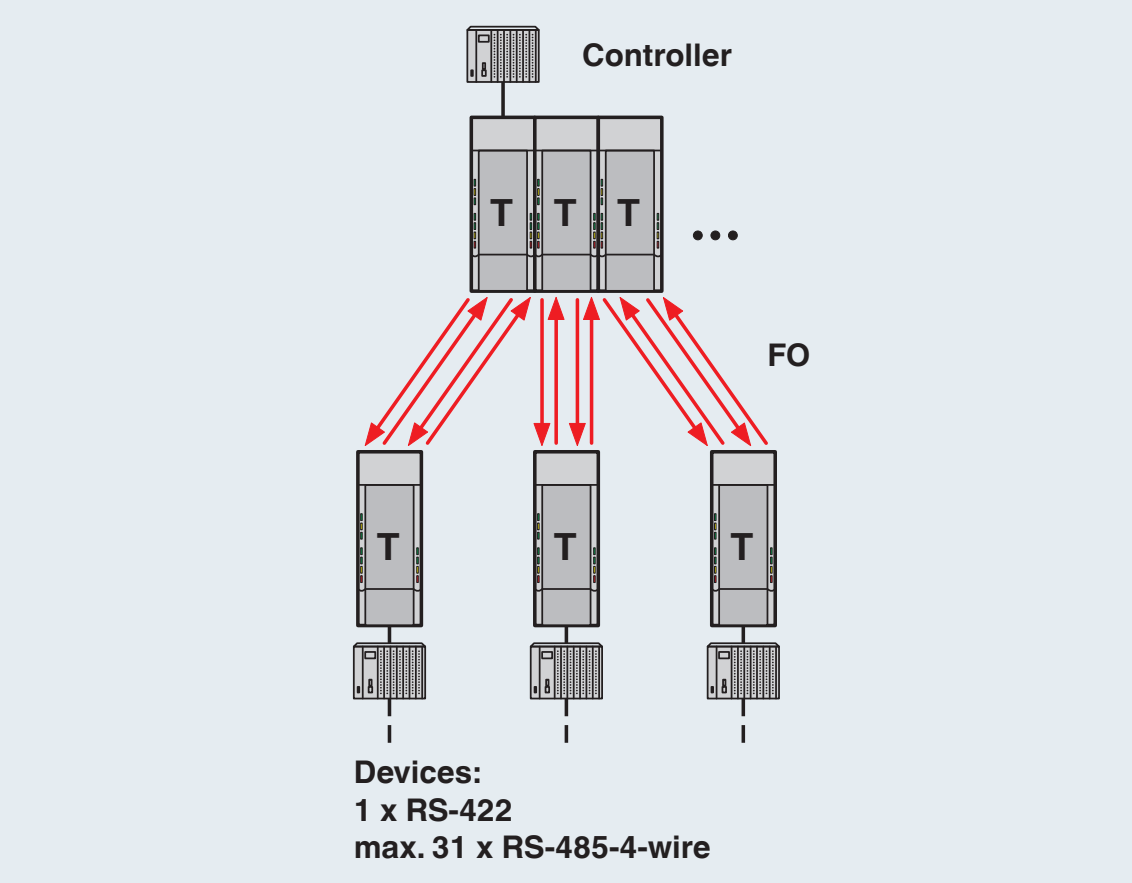

Controller-device line structure

Application drawing



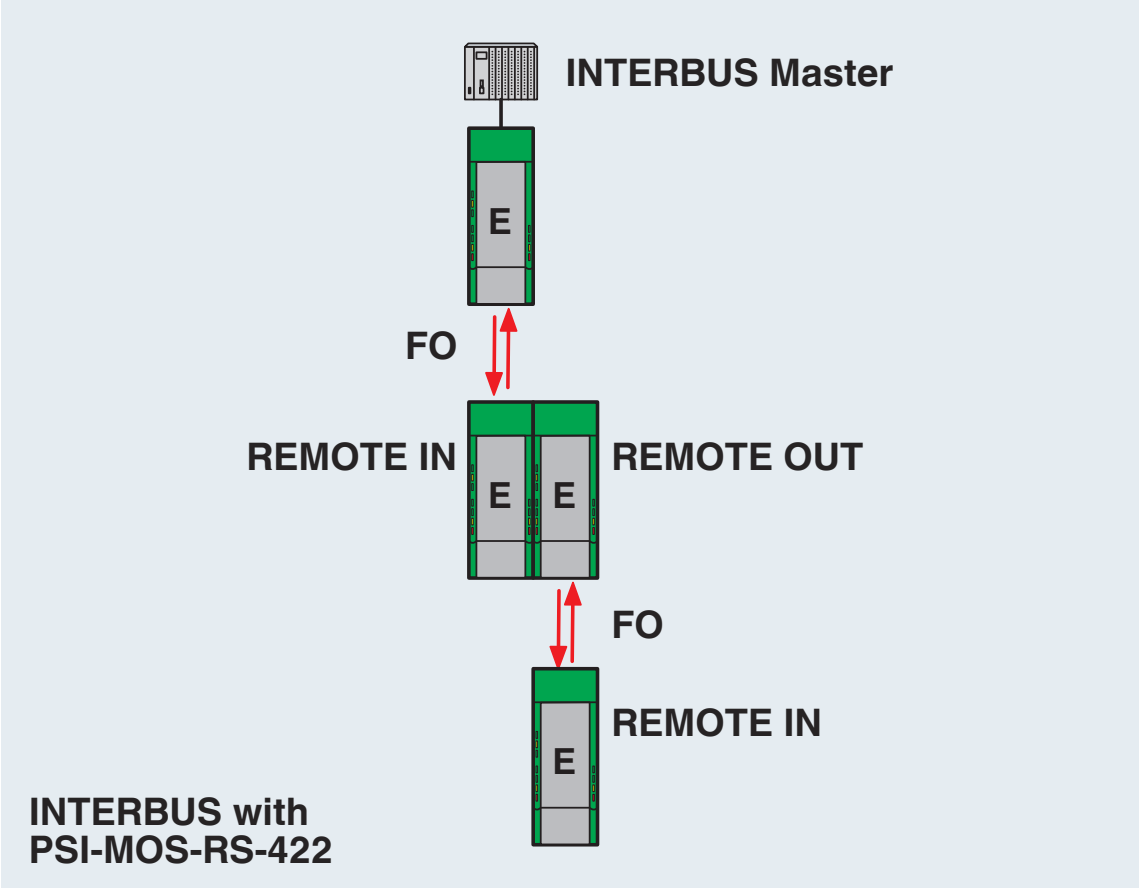

Star structure

Application drawing



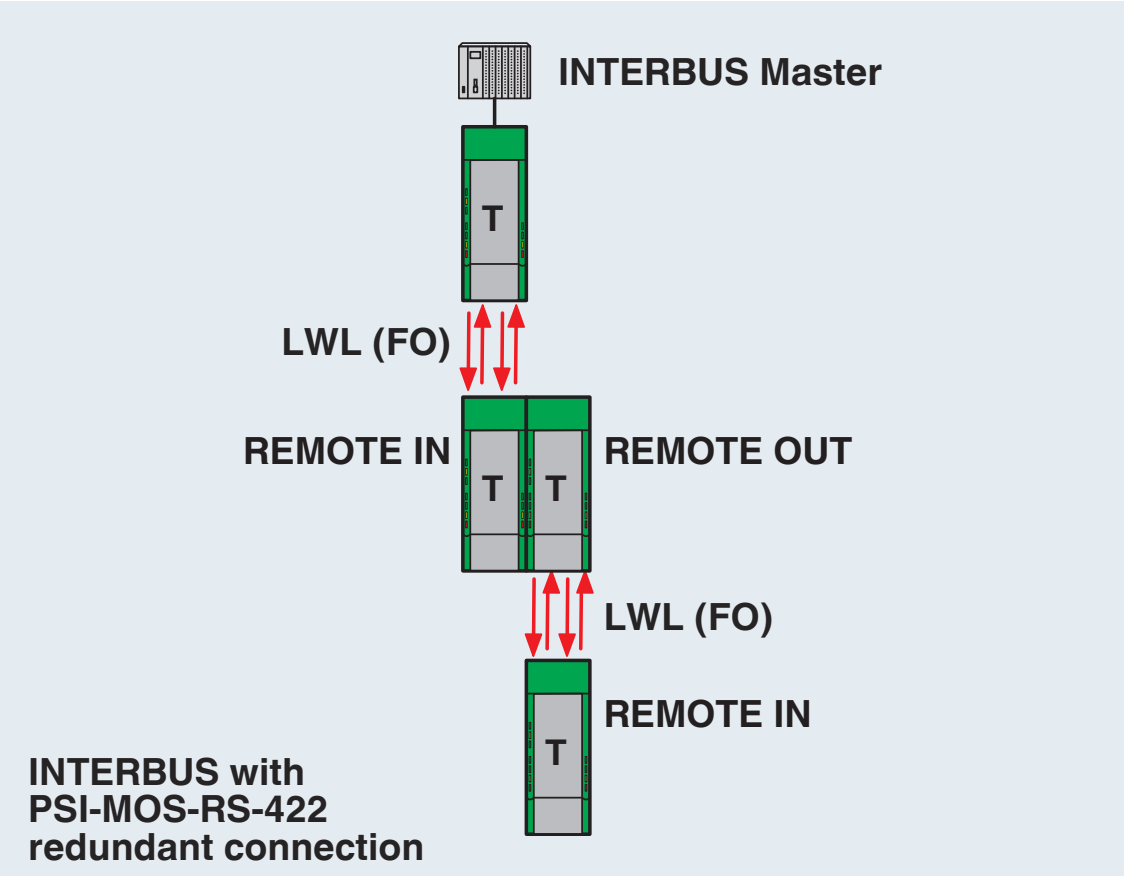

Redundant structure

Application drawing



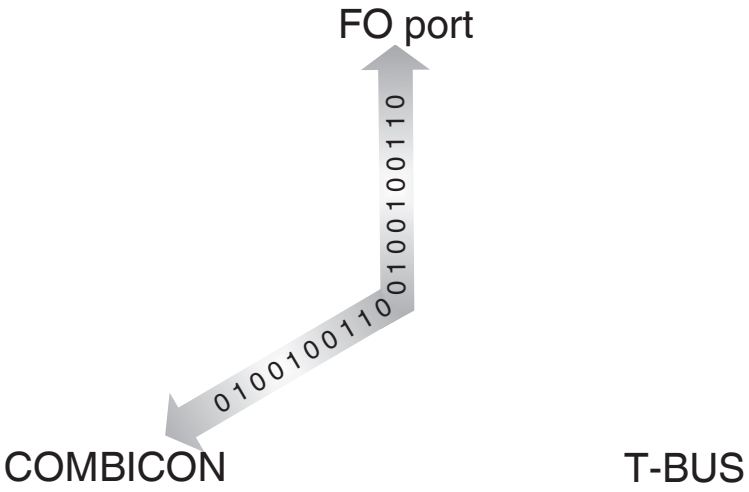

INTERBUS with PSI-MOS-RS422...

Functional drawing



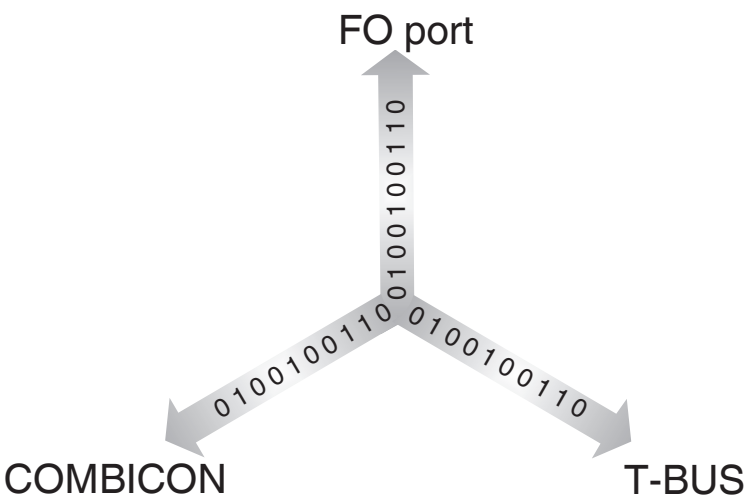

INTERBUS with PSI-MOS-RS-422
Redundant connection

Schematic diagram



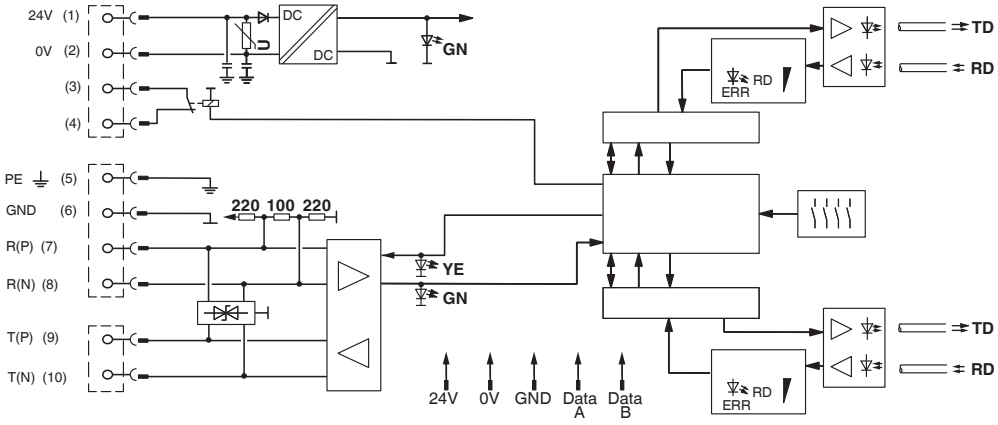

Port assignment for point-to-point connections

Schematic diagram




Port assignment in star structures

Block diagram




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

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2708355

**cULus Recognized**
Approval ID: E238705

**DNV GL**
Approval ID: TAA00001KR_7

**cULus Listed**
Approval ID: E199827

## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 43201500 |

## 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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