

PSI-MOS-RS422/FO 660 E - FO converters



2708342

<https://www.phoenixcontact.com/in/products/2708342>

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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 (FSMA), 660 nm, for polymer/PCF fiber cable

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	2708342
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DNC
Product key	DNC216
Catalog page	Page 437 (C-6-2019)
GTIN	4017918974046
Weight per piece (including packing)	245.1 g
Weight per piece (excluding packing)	182.48 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

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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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
MTTF	1025 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	442 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	184 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	493 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	92 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	2.4 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	100 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

PSI-MOS-RS422/FO 660 E - FO converters



2708342

<https://www.phoenixcontact.com/in/products/2708342>

Limiting continuous current	0.46 A
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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 (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-422 interface
Connection method	F-SMA
Wavelength	660 nm
Minimum receiver sensitivity	-31.2 dBm
Transmission medium	Polymer fiber
	PCF fiber

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

Width	35 mm
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PSI-MOS-RS422/FO 660 E - FO converters



2708342

<https://www.phoenixcontact.com/in/products/2708342>

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	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

Class I, Zone 2, AEx nc IIC T5

PSI-MOS-RS422/FO 660 E - FO converters



2708342

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Identification	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	EN 55011

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)

PSI-MOS-RS422/FO 660 E - FO converters



2708342

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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

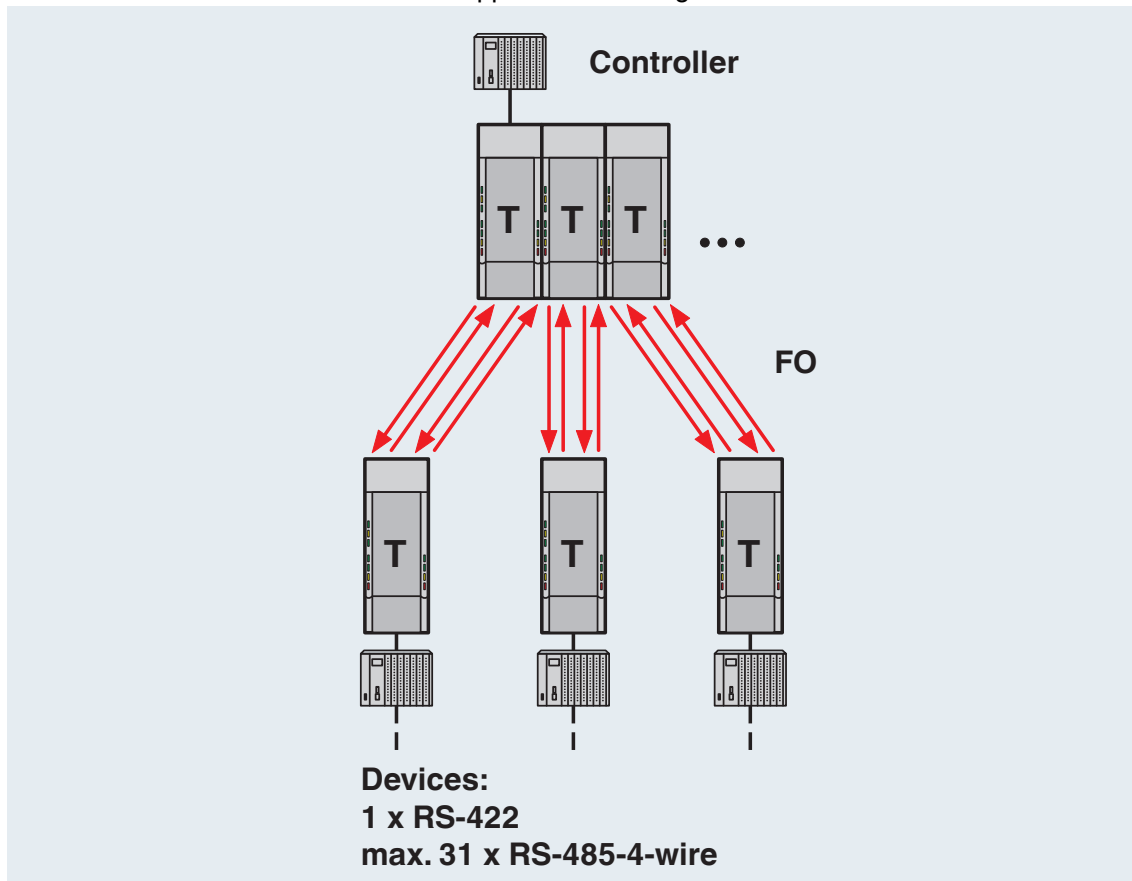
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Mounting

Mounting type	DIN rail mounting
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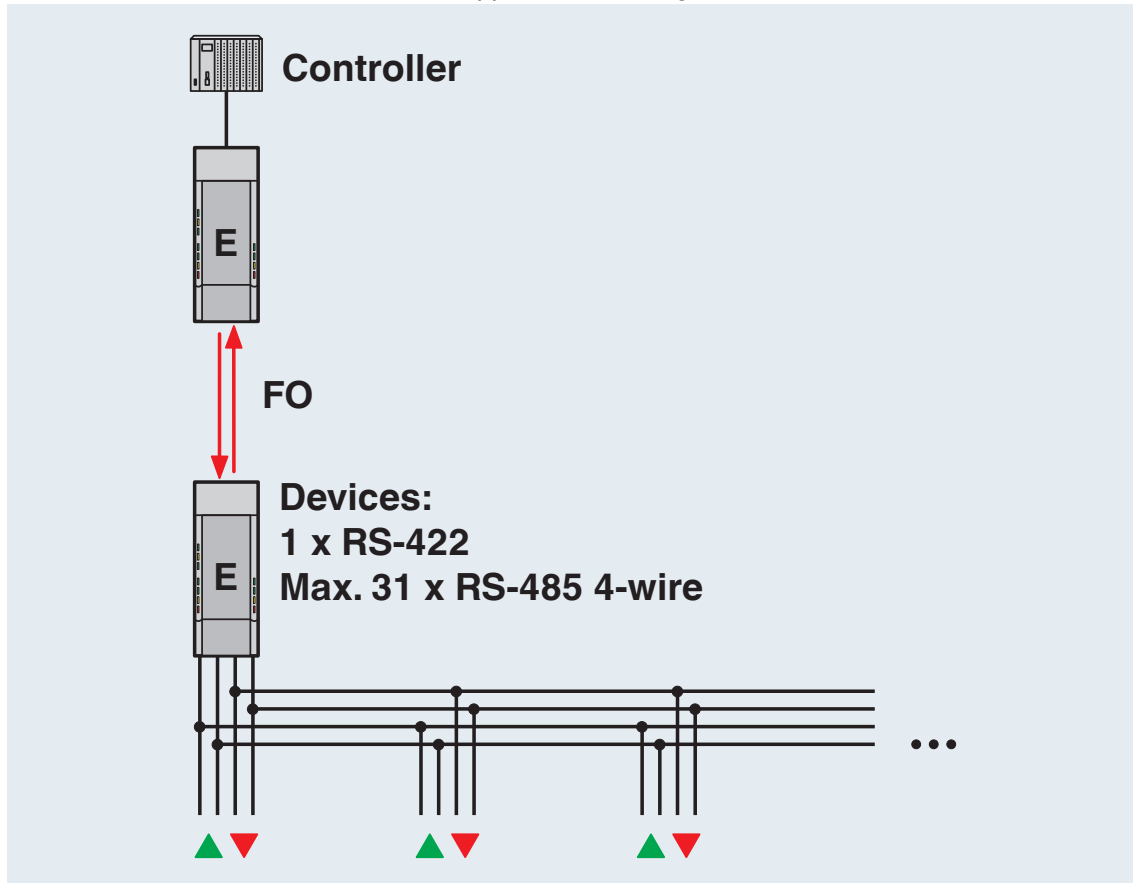
Drawings

Application drawing



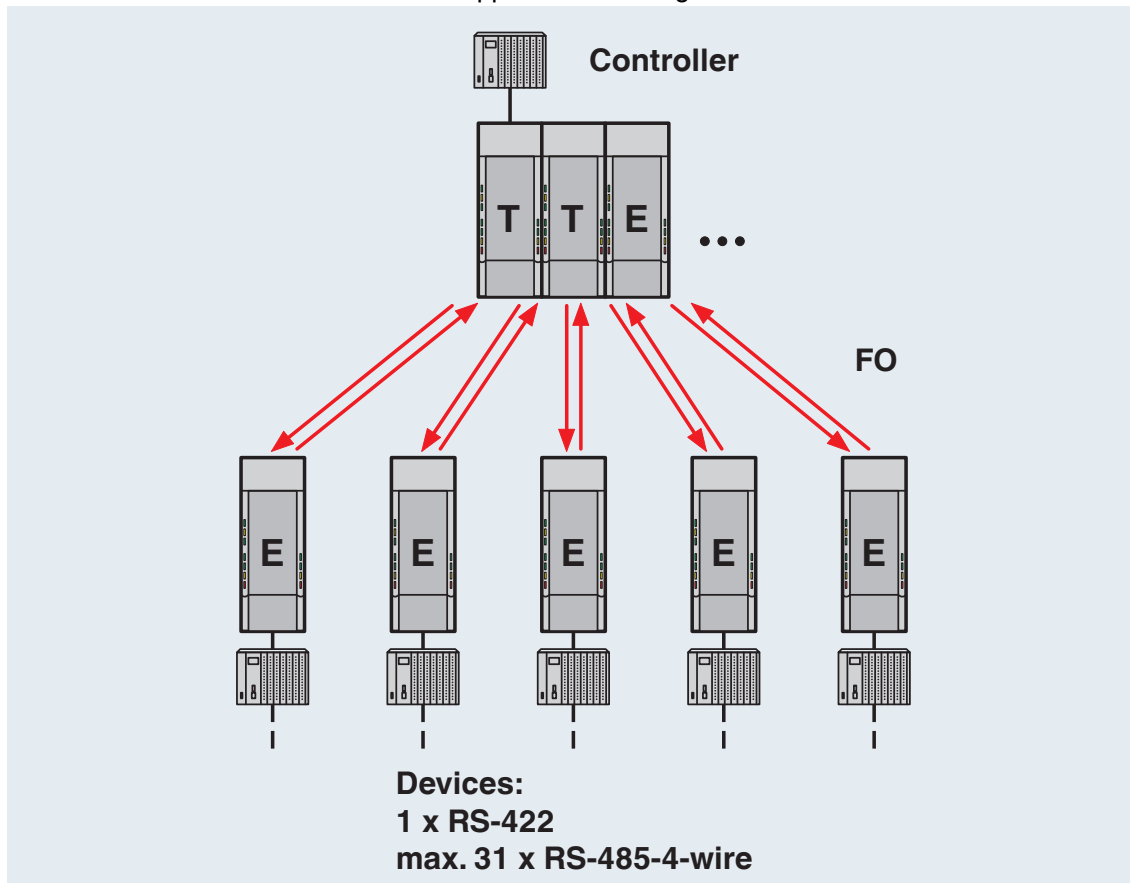
Redundant structure

Application drawing



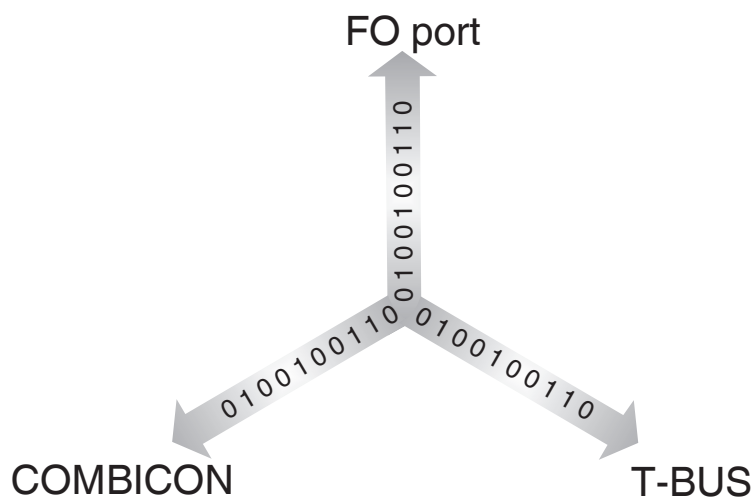
Point-to-point connection

Application drawing



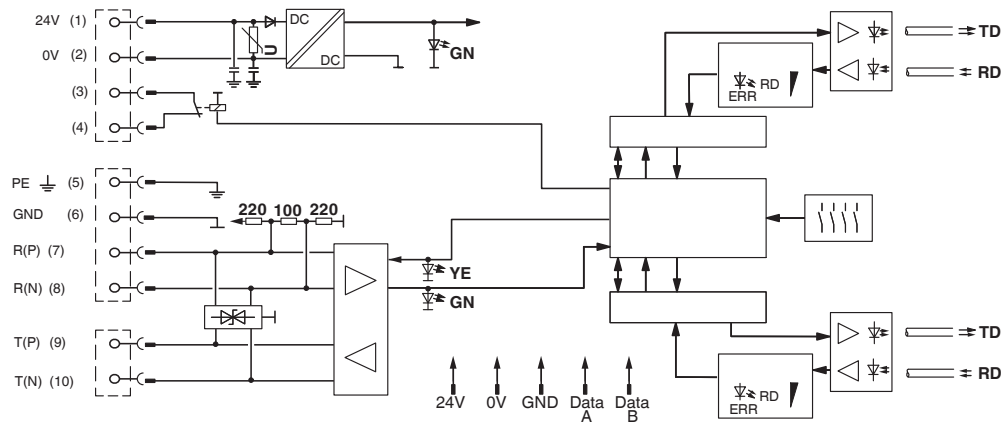
Star structure

Schematic diagram



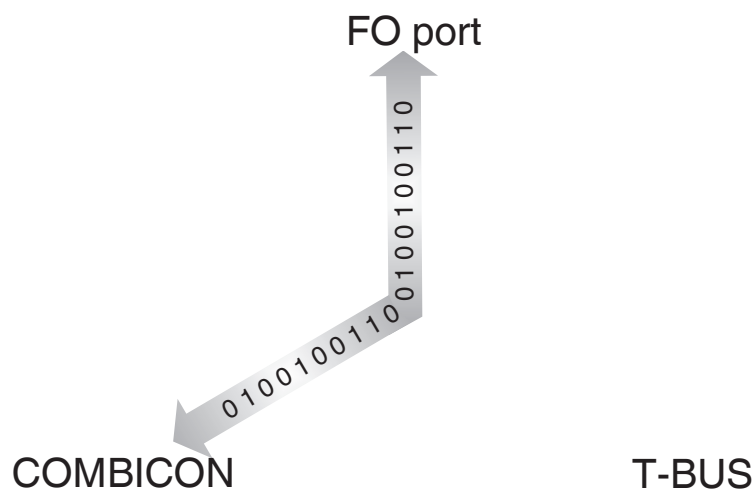
Port assignment in star structures

Block diagram



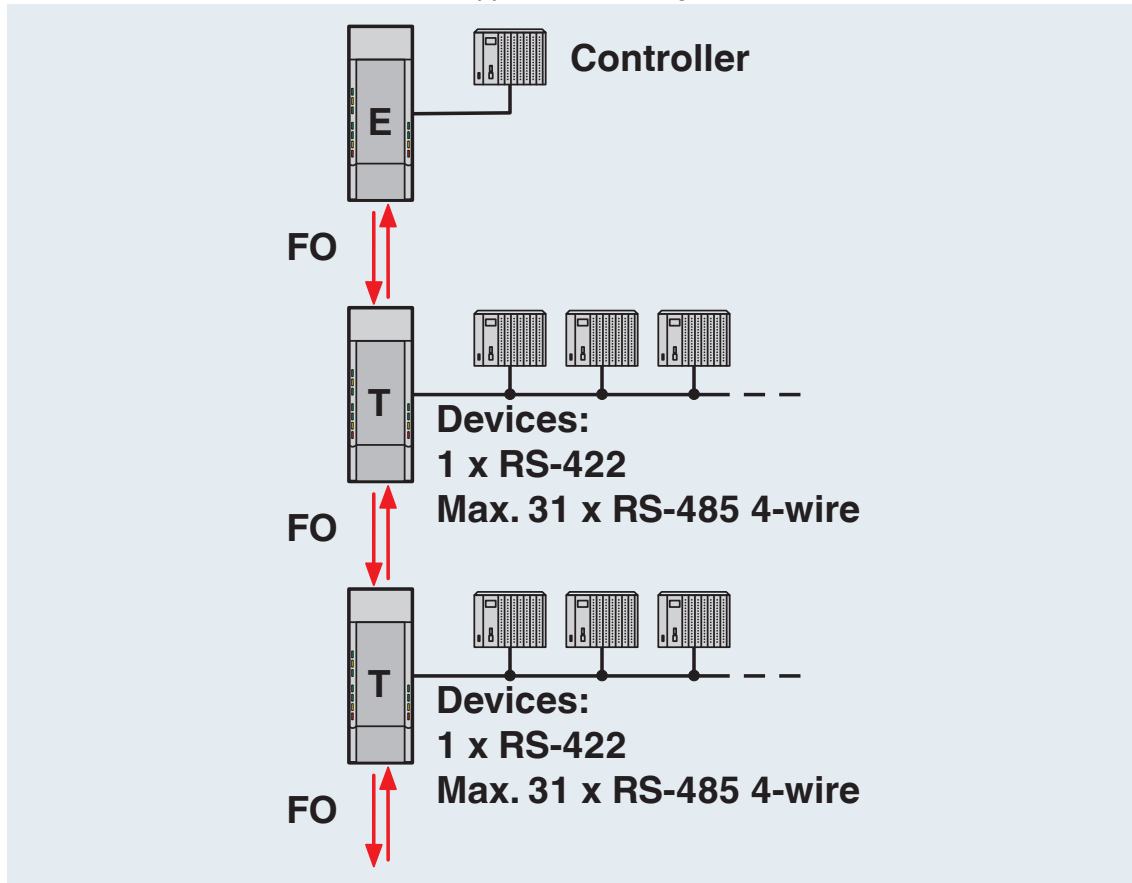
*) only with PSI-MOS.../FO...T

Schematic diagram



Port assignment for point-to-point connections

Application drawing

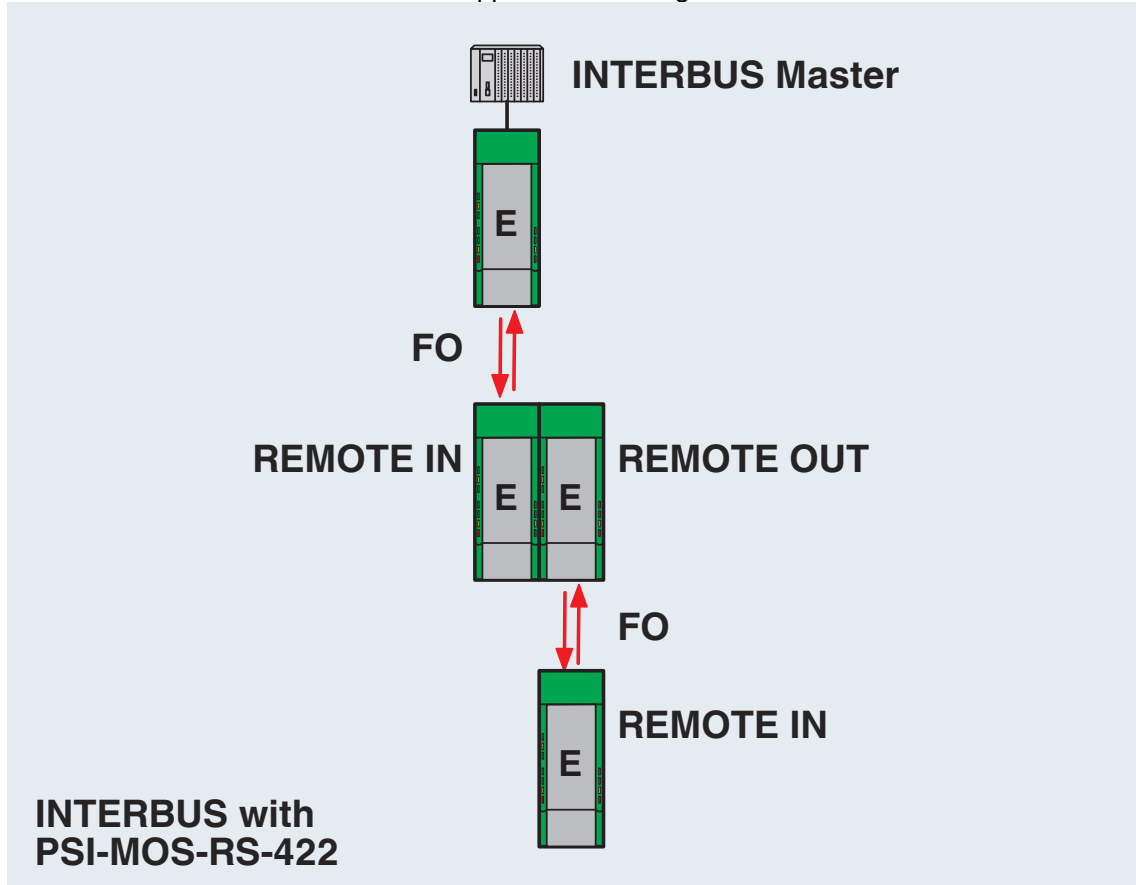


Controller-device line structure

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Application drawing



INTERBUS with PSI-MOS-RS422...

PSI-MOS-RS422/FO 660 E - FO converters



2708342

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/2708342>



EAC

Approval ID: TR TS_D_01871-19



DNV GL

Approval ID: TAA00001KR



cULus Recognized

Approval ID: E238705



ATEX

Approval ID: PTB 06 ATEX 2042U



ATEX

Approval ID: PxCIF06ATEX2708261X



cUL Listed

Approval ID: E199827



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Classifications

ECLASS

ECLASS-11.0	19170411
ECLASS-12.0	19170411
ECLASS-13.0	19170411

ETIM

ETIM 9.0	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	a4cb4a1b-0517-465b-93a7-310745de5550

PSI-MOS-RS422/FO 660 E - FO converters



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Accessories

PSM-SET-FSMA/4-KT - FO connectors

2799720

<https://www.phoenixcontact.com/in/products/2799720>

FO connectors, degree of protection: IP20, number of positions: 2, MM, material: Metal, cable outlet: straight



PSM-SET-FSMA/4-HCS - FO connectors

2799487

<https://www.phoenixcontact.com/in/products/2799487>

FO connectors, degree of protection: IP20, number of positions: 2, MM, material: Metal, connection method: Cable connection, cable outlet: straight



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FL FOC PN-B-980/1000 - FO cable

2313397

<https://www.phoenixcontact.com/in/products/2313397>

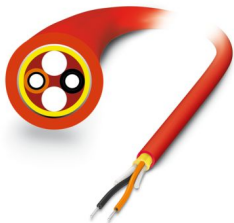


PROFINET polymer fiber cable, duplex 980 μm /1000 μm , heavy-weight design, for installation in stationary systems and machines, by the meter, without male connector

PSM-LWL-RUGGED-980/1000 - FO cable

2744322

<https://www.phoenixcontact.com/in/products/2744322>



Polymer fiber cable, duplex 980 μm /1000 μm , heavy-weight version for installation in stationary systems and machines, by the meter without male connector

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FL FOC PN-C-FLEX-980/1000 - FO cable

2313407

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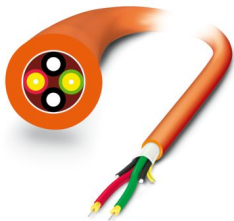


PROFINET polymer fiber cable, duplex, 980/1000 μm , heavy-weight highly flexible design, for flexible cable conduit applications, by the meter, without connector

PSM-LWL-HCS-RUGGED-200/230 - FO cable

2799885

<https://www.phoenixcontact.com/in/products/2799885>



PCF cable, duplex 200 μm /230 μm , by the meter without male connector, for installation in stationary systems and machines

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PSM-LWL-HCSO-200/230 - FO cable

2799445

<https://www.phoenixcontact.com/in/products/2799445>



PCF cable, duplex 200/230 μm , by the meter, without connector, for outdoor installation

QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

<https://www.phoenixcontact.com/in/products/2904614>



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

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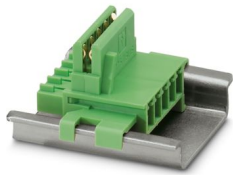
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ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - DIN rail bus connectors

2709561

<https://www.phoenixcontact.com/in/products/2709561>

DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

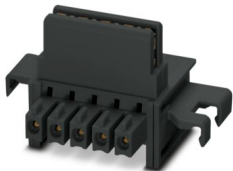


ME 17,5 TBUS 1,5/PP000-3,81 BK - DIN rail bus connectors

2890014

<https://www.phoenixcontact.com/in/products/2890014>

DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 2-pos.



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PSM-POF-KONFTOOL - Assembly tool

2744131

<https://www.phoenixcontact.com/in/products/2744131>



Polymer fiber DIY case, consisting of: Stripping knife, stripping pliers, polishing wheels for F-SMA and SC-RJ quick mounting connectors, polishing pad and emery paper

PSM-HCS-KONFTOOL - Assembly tool

2799526

<https://www.phoenixcontact.com/in/products/2799526>



PCF assembly kit for F-SMA quick mounting connectors, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, microscope, fiber cleaving tool for standard HCS fibers, four F-SMA connectors for standard PCF fibers, and documentation

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PSM-SET-FSMA-POLISH - Assembly tool

2799348

<https://www.phoenixcontact.com/in/products/2799348>

Polymer fiber polishing set, for F-SMA quick mounting connectors



PSM-FO-POWERMETER - Measuring device

2799539

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Fiber optic measuring case, consisting of an optical power meter, F-SMA, B-FOC adapters, reference fibers and operating instructions



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PSM-SET-FSMA-LINK/2 - Fiber optic coupling

2799416

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Coupling; set consisting of 2 couplings for connecting F-SMA plugs



SUBCON-PLUS 9/F - D-SUB bus connector

2744241

<https://www.phoenixcontact.com/in/products/2744241>

D-SUB connector, 9-pos. female connector, two 35° cable entries, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to one screw connection terminal block



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SUBCON-PLUS 9/M - D-SUB bus connector

2744018

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D-SUB connector, 9-pos., male connector, two 35° cable entries, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to one screw connection terminal block

SZS 0,4X2,5 VDE - Screwdriver

1205037

<https://www.phoenixcontact.com/in/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

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PSM-ME-RS232/RS485-P - Interface converter

2744416

<https://www.phoenixcontact.com/in/products/2744416>



Interface converter, for converting RS-232 (V.24) to RS-422 (V.11) and RS-485, with electrical isolation, 2 channels, rail-mountable

FOC-HCS-RUGGED-1014/... - FO patch cable

1402191

<https://www.phoenixcontact.com/in/products/1402191>



rugged PCF installation cable for inner areas with highly tear-proof aramid strain-relief elements. Individual elements made from highly flexible FRNC material. The cable is halogen-free, ozone and UV resistant and has a rugged polyurethane (PUR) outer sheath.

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PHOENIX CONTACT (I) Pvt. Ltd.

A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420

info@phoenixcontact.co.in