

FO converters - PSI-MOS-PROFIB/FO 660 T - 2708287

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FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two FO interfaces (FSMA), 660 nm, for polymer/HCS fiber cable

Product Features

- ✓ Can be combined with the PSI copper repeater in a modular way using DIN rail connectors
- ✓ Supply voltage and data signals routed through via DIN rail connectors
- ✓ Connections can be plugged in using a COMBICON screw terminal block
- ✓ Automatic data rate detection or fixed data rate setting via DIP switches
- ✓ Redundant power supply possible by means of optional system power supply unit
- ✓ High-quality electrical isolation between all interfaces (PROFIBUS // fiber optic ports // power supply // DIN rail connector)
- ✓ Approved for use in zone 2
- ✓ Integrated optical diagnostics for continuous monitoring of fiber optic paths
- ✓ Floating switch contact for leading alarm generation in relation to critical fiber optic paths
- ✓ Intrinsically safe fiber optic interface (Ex op is) for direct connection to devices in zone 1
- ✓ Suitable for all data rates up to 12 Mbps
- ✓ Bit retiming for any cascading depth



Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	234.2 GRM
Custom tariff number	85176200
Country of origin	Germany

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Technical data

Dimensions

Width	35 mm
Height	99 mm
Depth	106 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (non-condensing)
Altitude	5000 m (For restrictions see manufacturer's declaration)
Degree of protection	IP20
Noise immunity	EN 61000-6-2:2005

General

Bit delay	≤ 1 Bit
Bit distortion, input	± 35 % (permitted)
Bit distortion, output	< 6.25 %
Electrical isolation	VCC // RS-485
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise emission	EN 55011
Net weight	191 g
Housing material	PA 6.6-FR
Color	green
MTBF	201 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	42 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
MTTF	213 Years (SN 29500 standard, temperature 25°C, operating cycle 21 % (5 days a week, 8 hours a day))
	150 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))
	86 Years (SN 29500 standard, temperature 40°C, operating cycle 100 % (7 days a week, 24 hours a day))
Conformance	CE-compliant
ATEX	# II 3 G Ex nAC IIC T4 X (Please follow the special installation instructions in the documentation!)
	# II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U) (Please follow the special installation instructions in the documentation!)
UL, USA / Canada	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

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Technical data

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	18 V DC ... 30 V DC
Max. current consumption	130 mA
Typical current consumption	100 mA (24 V DC)
Connection method	COMBICON plug-in screw terminal block

Serial interface

Interface 1	PROFIBUS acc. to IEC 61158, RS-485 2-wire, half duplex, automatic control
Interface	PROFIBUS
Operating mode	Semi-duplex
Connection method	D-SUB-9 female connector
File format/coding	UART (11 Bit, NRZ)
Data direction switching	Automatic control
Transmission medium	Copper
Transmission length	≤ 1200 m (depending on the data rate, with shielded, twisted pair data cable)
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Serial transmission speed	≤ 12 Mbps

Optical interface FO

Transmit capacity, minimum	-3 dBm (980/1000 µm)
	-15.4 dBm (200/230 µm)
Minimum receiver sensitivity	-30 dBm
Overrange receiver	-3 dBm (980/1000 µm)
Wavelength	660 nm
Transmission length incl. 3 dB system reserve	70 m (With F-P 980/1000 230 dB/km with quick mounting connector)
	400 m (With F-K 200/230 10 dB/km with quick mounting connector)
Transmission medium	Polymer fiber
	HCS fiber
Transmission protocol	Protocol-transparent to the RS-485 interface
Connection method	F-SMA

Digital outputs

Output name	Relay output
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Digital outputs

Output description	Alarm output
Number of outputs	1
Maximum switching voltage	60 V DC
	42 V AC
Limiting continuous current	0.46 A

Classifications

eCl@ss

eCl@ss 4.0	27230207
eCl@ss 4.1	27230207
eCl@ss 5.0	27230207
eCl@ss 5.1	27230207
eCl@ss 6.0	27230207
eCl@ss 7.0	27230207
eCl@ss 8.0	27143136

ETIM

ETIM 2.0	EC001423
ETIM 3.0	EC001423
ETIM 4.0	EC001423
ETIM 5.0	EC001423

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	43201553

Approvals

Approvals

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UL Recognized / cUL Recognized / UL Recognized / cUL Recognized / DNV / cULus Recognized



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Approvals

Ex Approvals

ATEX / UL Listed / cUL Listed / ATEX / UL Listed / cUL Listed / cUL Listed / cULus Listed / cULus Listed

Approvals submitted

Approval details

UL Recognized 
cUL Recognized 
UL Recognized 
cUL Recognized 
DNV
cULus Recognized  US

Accessories

Accessories

Adapter

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Accessories

Fiber optic coupling - PSM-SET-FSMA-LINK/2 - 2799416



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

Connection distributor - PSM PTK - 2760623



Passive RS-485 T-distributor, fitted with one 9-pin D-SUB pin strip and two 9-pin D-SUB socket strips

Connection distributor - PSM PTK-4 - 2799364



Passive RS-485 T-distributor, fitted with one 9-pin D-SUB pin strip and five 9-pin D-SUB socket strips

Assembly tool

Assembly tool - PSM-POF-KONFTOOL - 2744131



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

Assembly tool - PSM-HCS-KONFTOOL - 2799526



HCS 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, and documentation

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Accessories

Assembly tool - PSM-SET-FSMA-POLISH - 2799348



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

Connector set

FO connectors - PSM-SET-FSMA/4-KT - 2799720



F-SMA plug set for polymer fiber, for self assembly consisting of 4 quick mounting connectors with bend protection sleeve

FO connectors - PSM-SET-FSMA/4-HCS - 2799487



F-SMA plug set for HCS fiber, for self assembly consisting of 4 quick mounting connectors with bend protection sleeve

Data cable by the meter

FO cable - PSM-LWL-KDHEAVY-980/1000 - 2744319



Polymer fiber cable, duplex 980/1000 µm, medium-weight version for permanent indoor installation, by the meter, without connector

FO cable - PSM-LWL-RUGGED-980/1000 - 2744322



Polymer fiber cable, duplex, 980 µm/1000 µm, heavy version for permanent indoor installation, sold by the meter without connectors

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Accessories

FO cable - PSM-LWL-RUGGED-FLEX-980/1000 - 2744335



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

FO cable - PSM-LWL-HCS-RUGGED-200/230 - 2799885



HCS cable, duplex 200/230 μm , by the meter, without connector, for indoor installation

FO cable - PSM-LWL-HCSO-200/230 - 2799445



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

Cable - PSM-CABLE-PROFIB/FC - 2744652



PROFIBUS cable, Fast Connect type, up to 12 Mbps (02YSY (ST)CY 1x2x22 AWG)

Data plug

D-SUB bus connector - SUBCON-PLUS-PROFIB/SC2 - 2708232



D-SUB connector, 9-pos., male connector, cable entry $< 35^\circ$, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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Accessories

D-SUB bus connector - SUBCON-PLUS-PROFIB/PG/SC2 - 2708245



D-SUB connector, 9-pos., male connector, cable entry < 35°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/SC - 2744380



D-SUB connector, 9-pos., male connector, axial version with two cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/SC - 2313708



D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685



D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/M12 - 2902321



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 180° (axial). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

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Accessories

D-SUB bus connector - SUBCON-PLUS-PROFIB/90X/M12 - 2902729



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 90°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator. Long version; S7-compatible.

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/M12 - 2902318



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 90°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

D-SUB bus connector - SUBCON-PLUS-PROFIB/35/M12 - 2902320



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 35°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

DIN rail connector

Electronic housing - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



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

Interface converter

Repeater - PSI-REP-PROFIBUS/12MB - 2708863



Modular repeater for electrical isolation and range increase for PROFIBUS up to 12 Mbps, 4-way isolation, rail-mountable, supply 24 V DC

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Accessories

Interface converter - PSM-ME-RS485/RS485-P - 2744429



Repeater, for potential separation and range increase in RS-485 2-wire bus systems, 3-way isolation, rail-mountable

Measuring tools

Measuring instrument - PSM-FO-POWERMETER - 2799539



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

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Screwdriver tools

Screwdriver - SZS 0,4X2,5 VDE - 1205037



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

Stripping tool

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Accessories

Stripping tool - PSM-STRIP-FC/PROFIB - 2744623

Quick stripping tool for PROFIBUS cable, type Fast Connect



Terminal resistor

Termination resistor - PSI-TERMINATOR-PB - 2313944



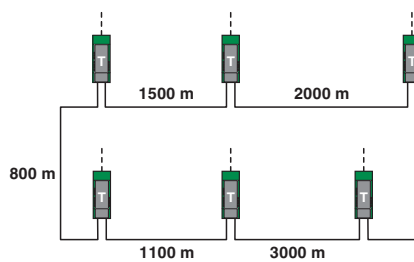
Active termination resistor with redundant voltage supply for PROFIBUS and RS-485 bus systems. Compact design. Electrical isolation between supply and data interface. Bus termination can be switched. Integrated programming interface.

DIN rail connector - ME 17,5 TBUS 1,5/PP000-3,81 BK - 2890014

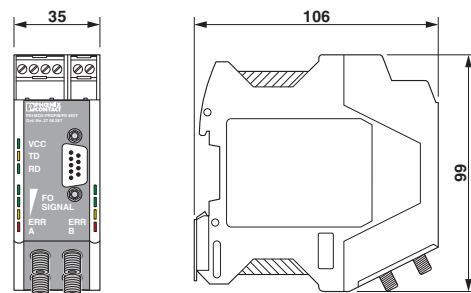
DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 2-pos.

Drawings

Application drawing

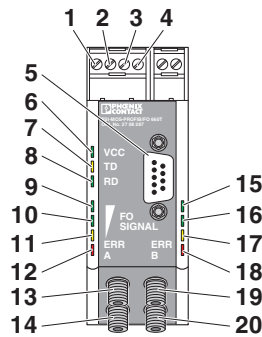


Dimensioned drawing



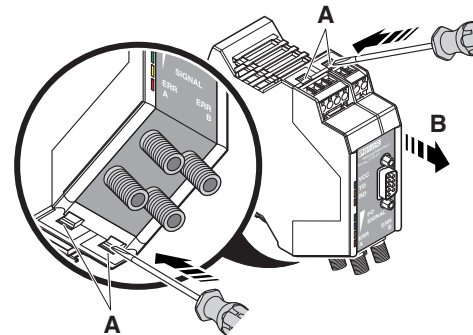
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Schematic diagram



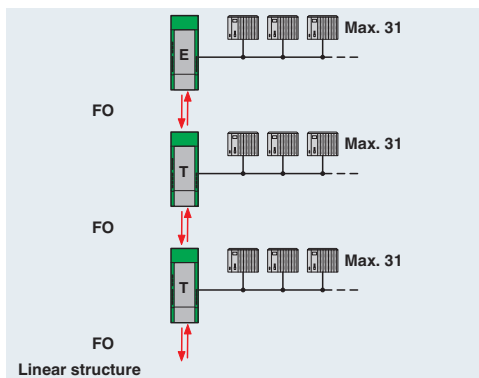
Front view

Schematic diagram



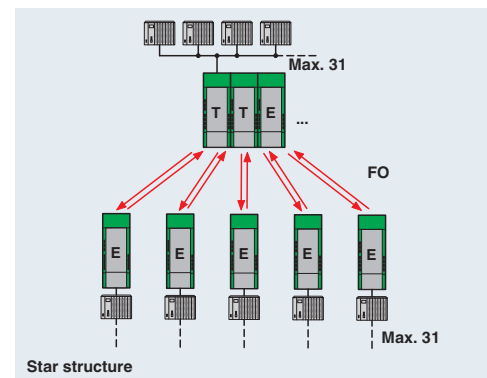
Opening the housing

Application drawing

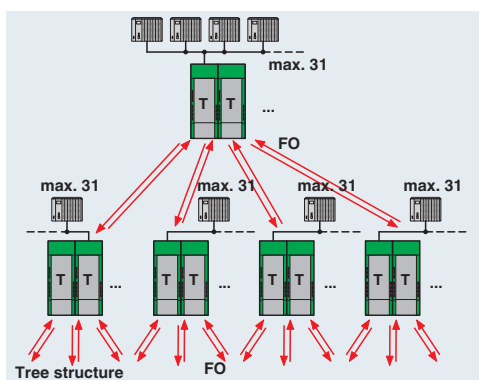


Tree structure

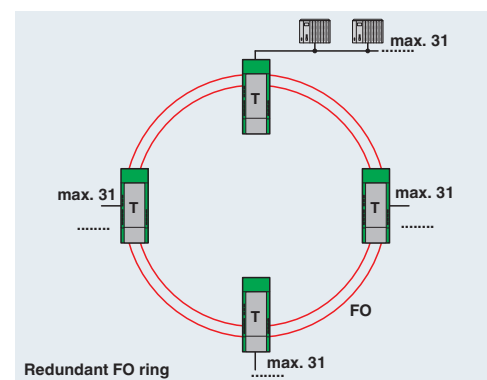
Application drawing



Application drawing



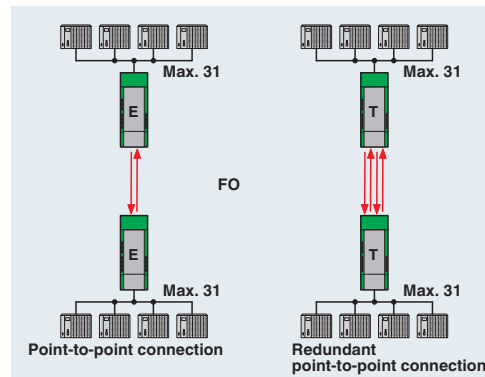
Application drawing



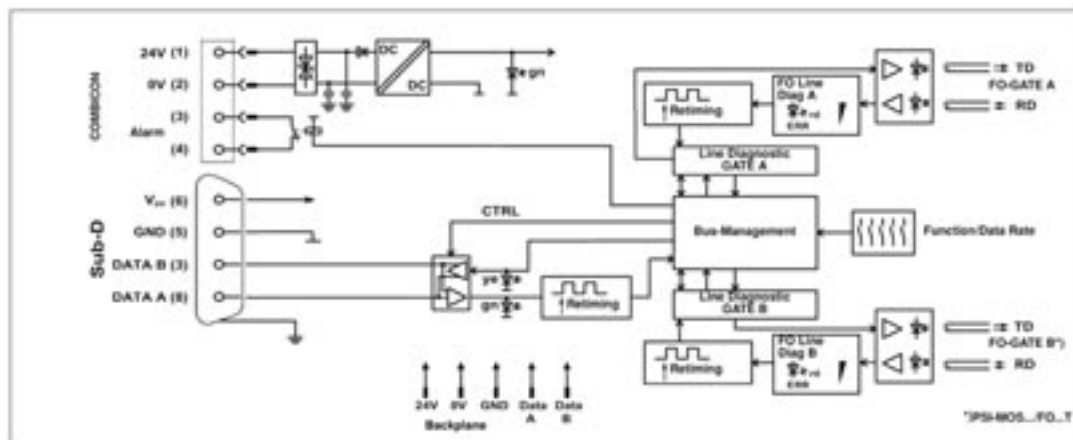
Redundant FO ring

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Application drawing



Block diagram



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