

## FO converters - PSI-MOS-RS232/FO 660 E - 2708368

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FO converter with integrated optical diagnosis, alarm contact, for RS-232 interfaces up to 115.2 kbps, terminal equipment with an FO interface (FSMA), 660 nm, for polymer/HCS fiber cable

### Product Features

- ✓ Supply voltage and data signals routed through via DIN rail connectors
- ✓ Connections can be plugged in using 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
- ✓ Floating switch contact for leading alarm generation in relation to critical fiber optic paths
- ✓ Integrated optical diagnostics for continuous monitoring of fiber optic paths
- ✓ Automatic data rate detection for all data rates up to 115.2 kbps



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	217.4 g
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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#### Dimensions

Width	35 mm
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## Technical data

### Dimensions

Height	99 mm
Depth	105 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

Transmission channels	2 (1/1), RxD, TxD, full duplex
Bit distortion, input	± 35 % (permitted)
Bit distortion, output	< 6.25 %
Electrical isolation	VCC // V.24 (RS-232)
Test voltage data interface/power supply	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)
Noise emission	EN 55011
Net weight	233.3 g
Housing material	PA 6.6-FR
Color	green
MTBF	485 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	91 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 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

### Power supply

Nominal supply voltage	24 V DC (With UL approval)
Supply voltage range	18 V DC ... 30 V DC
Max. current consumption	120 mA
Typical current consumption	100 mA (24 V DC)

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### Technical data

#### Power supply

Connection method	COMBICON plug-in screw terminal block
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#### Serial interface

Interface 1	V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1
Connection method	D-SUB-9 plug
Transmission medium	Copper
Transmission length	≤ 15 m
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Serial transmission speed	115.2 kbps (NRZ)

#### Optical interface FO

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

#### Digital outputs

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

#### Standards and Regulations

Order No.	2708368
Product key	CNC215
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)

## FO converters - PSI-MOS-RS232/FO 660 E - 2708368

### Technical data

#### Standards and Regulations

Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	5g, 150 Hz, 2.5 h, in XYZ direction
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	15g, 11 ms period, half-sine shock pulse
Shock	15g in all directions in acc. with IEC 60068-2-27
Noise emission	EN 55011
Noise immunity	EN 61000-6-2:2005
Free from substances that could impair the application of coating	according to P-VW 3.10.7 57 65 0 VW-AUDI-Seat central standard
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-6
Vibration (operation)	In acc. with IEC 60068-2-6: 5g, 150 Hz
Conformance	CE-compliant
ATEX	# II 3 G Ex nAC IIC T4 X
	# II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U)
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

### 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	19179290

#### ETIM

ETIM 2.0	EC001423
ETIM 3.0	EC001423
ETIM 4.0	EC001423
ETIM 5.0	EC000310

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## Classifications

### 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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#### Approvals

UL Recognized / cUL Recognized / DNV / EAC / EAC / KC / cULus Recognized

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#### Ex Approvals

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


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#### Approvals submitted

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## Approval details

UL Recognized 

cUL Recognized 

DNV


EAC

EAC

KC

## FO converters - PSI-MOS-RS232/FO 660 E - 2708368

### Approvals

cULus Recognized 

### Accessories

#### Accessories

#### Adapter

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



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

#### Adapter cable

Data cable - PSM-KA9SUB9/BB/0,5METER - 2708520



RS-232 cable, 9-pos. D-SUB socket on 9-pos. D-SUB socket, 9-wire, 1:1

Data cable - PSM-KA9SUB9/BB/2METER - 2799474



RS-232 cable, 9-pos. D-SUB socket on 9-pos. D-SUB socket, 9-wire, 1:1

Data cable - PSM-KA 9 SUB 25/BB/2METER - 2761059



RS-232 cable, 9-pos. D-SUB socket 25-pos on D-SUB socket

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### Accessories

Adapter cable - PSM-KAD-IL RS232/9SUB/B/0,8M - 2319200



Adapter cable to connect the IB IL RS232 and IB IL RS232-PRO Inline communication terminals to the interface converter, e.g. modem, Com server, Bluetooth or fiber optics.

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### Assembly tool

Assembly tool - PSM-POF-KONFTOOL - 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

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



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

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### 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

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### Accessories

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



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

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### Data cable by the meter

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



Polymer fiber cable, duplex 980/1000  $\mu\text{m}$ , medium-weight version for permanent indoor installation, by the meter, without connector

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



Polymer fiber cable, duplex, 980  $\mu\text{m}$ /1000  $\mu\text{m}$ , heavy version for permanent indoor installation, sold by the meter without connectors

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



Polymer fiber cable, duplex 980/1000  $\mu\text{m}$ , heavy-weight, highly flexible version for flexible conduit applications, by the meter, without connector

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



PCF cable, duplex 200/230  $\mu\text{m}$ , by the meter, without connector, for indoor installation

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### Accessories

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



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

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### Data plug

D-SUB bus connector - SUBCON-PLUS 9/F - 2744241



D-SUB connector, 9-pos. female connector, two cable entries < 35°, 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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D-SUB bus connector - SUBCON-PLUS 9/M - 2744018



D-SUB connector, 9-pos., male connector, two cable entries < 35°, 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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### 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.

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### Interface converter

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### Accessories

Interface converter - PSM-ME-RS232/RS485-P - 2744416



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

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### 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

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### 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

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### 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

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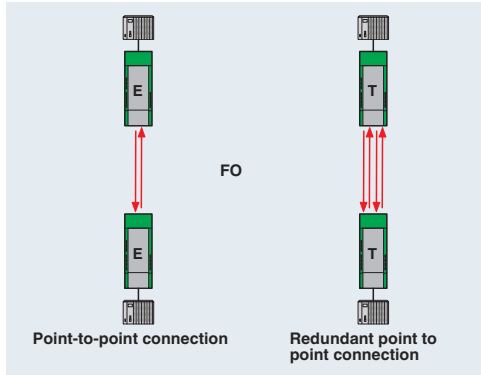
DIN rail connector - ME 17,5 TBUS 1,5/PP000-3,81 BK - 2890014

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

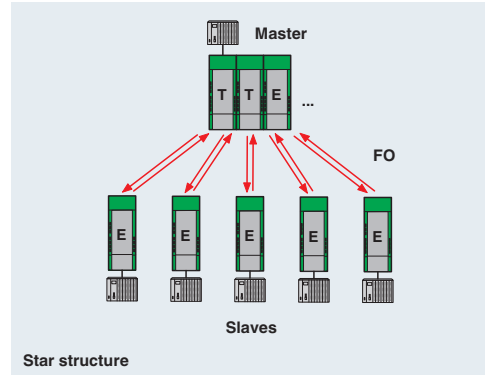
# FO converters - PSI-MOS-RS232/FO 660 E - 2708368

## Drawings

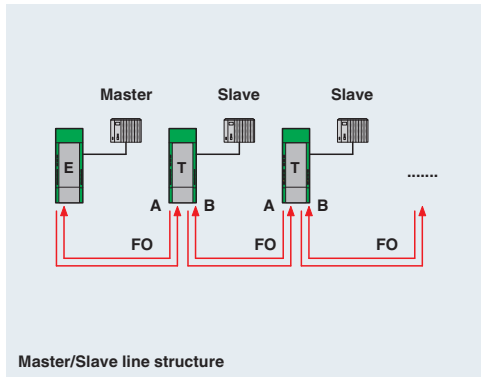
Application drawing



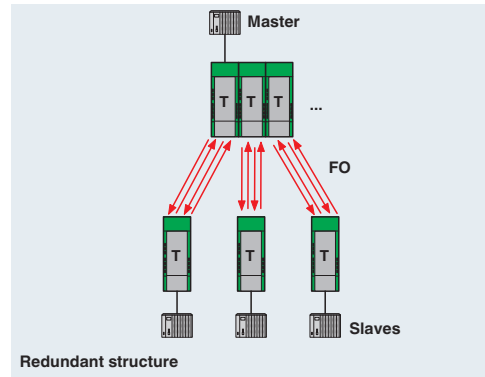
Application drawing



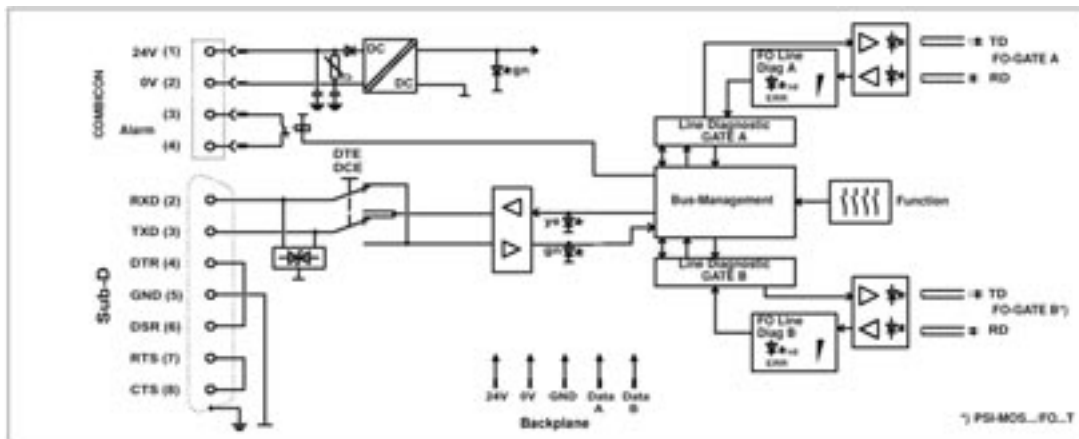
Application drawing



Application drawing



Block diagram



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

