

# FO converters - PSI-MOS-RS232/FO 850 T - 2708423

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FO converter with integrated optical diagnosis, alarm contact, for RS-232 interfaces up to 115.2 kbps, T-coupler with two FO interfaces (BFOC), 850 nm, for HCS/fiber glass cable

## Why buy this product

- Connections can be plugged in using a COMBICON screw terminal block
- Supply voltage and data signals routed through via DIN rail connectors
- High-quality electrical isolation between all interfaces (RS-232 // fiber optic ports // power supply // DIN rail connector)
- Redundant power supply possible by means of optional system power supply unit
- Approved for use in zone 2
- 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
- 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
Minimum order quantity	1
Catalog page	Page 513 (IF-2011)
GTIN	 4 017918 974114
Custom tariff number	85176200
Country of origin	GERMANY

## Technical data

### Note:

Utilization restriction	The operation of this device does not meet the general EMC protection requirements for residential areas. Please take the appropriate precautions.
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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
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## Technical data

### Serial interface

Transmission medium	Copper
Transmission length	≤ 15 m
Connection method	D-SUB-9 male connector
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 stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Serial transmission speed	115.2 kbps (NRZ)

### Optical interface FO

Transmit capacity, minimum	-4.6 dBm (200/230 μm)
Transmit capacity, minimum	-17.6 dBm (50/125 μm)
Transmit capacity, minimum	-13.6 dBm (62,5/125 μm)
Minimum receiver sensitivity	-33.20 dBm
Wavelength	850 nm
Transmission length incl. 3 dB system reserve	2800 m (with F-K 200/230 8 dB/km with quick mounting connector)
Transmission length incl. 3 dB system reserve	4200 m (with F-G 50/125 2.5 dB/km)
Transmission length incl. 3 dB system reserve	4800 m (with F-G 62,5/125 3.0 dB/km)
Transmission medium	HCS fiber
Transmission medium	Multi-mode fiberglass
Connection method	B-FOC (ST®)

### Fault warning output

Maximum switching voltage	60 V DC
Maximum switching voltage	42 V AC
Limiting continuous current	0.46 A

### Power supply

Supply voltage range	18 V DC ... 30 V DC
Max. current consumption	120 mA
Typical current consumption	120 mA (24 V DC)
Connection method	COMBICON plug-in screw terminal block

### General data

Transmission channels	2 (1/1), RxD, TxD, full duplex
Bit distortion, input	± 35 % (permitted)
Bit distortion, output	< 6.25 %
Width	35 mm
Height	99 mm
Depth	105 mm
Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (no condensation)

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## Technical data

### General data

Altitude	5000 m (For restrictions see manufacturer's declaration)
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
Noise emission	EN 55011
Noise immunity	EN 61000-6-2:2005
Degree of protection	IP20
Net weight	200 g
Housing material	PA 6.6-FR
Color	green
MTBF	177 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
MTBF	26 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
ATEX	# II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U)
UL, USA / Canada	Class I, Zone 2, AEx nc IIC T5
UL, USA / Canada	Class I, zone 2, Ex nC nL IIC T5 X
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D

## Classifications

### ETIM

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

### UNSPSC

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

### 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

## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Approvals

#### Approvals

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##### Approvals

UL Recognized / cUL Recognized / cULus Recognized

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##### Ex Approvals


ATEX / UL Listed / cUL Listed / cULus Listed


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##### Approvals submitted

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### Approval details

UL Recognized 

cUL Recognized 

cULus Recognized 

### Accessories

#### Accessories

##### Cable/conductor

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



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

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FO cable - PSM-LWL/HCS-RUGGED - 2744937



HCS cable, duplex 200/230  $\mu\text{m}$ , by the meter, with connector, for indoor installation

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### Accessories

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



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

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FO cable - PSM-LWL/HCSO - 2744940



HCS cable, duplex 200/230  $\mu\text{m}$ , by the meter, with connector, for outdoor installation

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FO cable - PSM-LWL-GDM-RUGGED- 50/125 - 2799322



Fiberglass cable, duplex 50/125  $\mu\text{m}$ , by the meter, without connector, for indoor installation

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FO cable - PSM-LWL/GDM-RUGGED - 2744911



Fiberglass cable, duplex 50/125  $\mu\text{m}$ , by the meter, with connector, for indoor installation

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FO cable - PSM-LWL-GDO- 50/125 - 2799432



Fiberglass cable, duplex 50/125  $\mu\text{m}$ , by the meter, without connector, for outdoor installation

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## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

FO cable - PSM-LWL/GDO - 2744924



Fiberglass cable, duplex 50/125  $\mu\text{m}$ , by the meter, with connector, for outdoor installation

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



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

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



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

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



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

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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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FO patch cable - FL MM PATCH 1,0 LC-ST - 2989174



Assembled fiber optic cable, break-out cable, fiberglass multi-mode 50/125  $\mu\text{m}$ , connector: LC/B-FOC (ST), degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

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#### FO patch cable - FL MM PATCH 2,0 LC-ST - 2989271



Assembled fiber optic cable, break-out cable, fiberglass multi-mode 50/125  $\mu\text{m}$ , connector: LC/B-FOC (ST), degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL MM PATCH 5,0 LC-ST - 2901801



Assembled FO cable, break out cable, multi-mode fiberglass 50/125  $\mu\text{m}$ , plug: LC / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL MM PATCH 1,0 SC-ST - 2901809



Assembled FO cable, break out cable, multi-mode fiberglass 50/125  $\mu\text{m}$ , connector: SC Duplex / B-FOC, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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#### FO patch cable - FL MM PATCH 5,0 SC-ST - 2901811



Assembled FO cable, break out cable, multi-mode fiberglass 50/125  $\mu\text{m}$ , connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL MM PATCH 1,0 ST-ST - 2901815



Assembled FO cable, break out cable, multi-mode fiberglass 50/125  $\mu\text{m}$ , connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

#### FO patch cable - FL MM PATCH 2,0 ST-ST - 2901816



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL MM PATCH 5,0 ST-ST - 2901817



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL MM PATCH 1,0 ST-SCRJ - 2901820



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / SCRJ, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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#### FO patch cable - FL MM PATCH 2,0 ST-SCRJ - 2901821



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: B-FOC (ST) / SCRJ, protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL MM PATCH 5,0 ST-SCRJ - 2901822



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: B-FOC (ST) / SCRJ, protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL SM PATCH 1,0 LC-ST - 2989242



Assembled fiber optic cable, break-out cable, fiberglass single mode 9/125 µm, connector: LC/B-FOC (ST), degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m



## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

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#### FO patch cable - FL SM PATCH 2,0 LC-ST - 2989349



Assembled fiber optic cable, break-out cable, fiberglass single mode 9/125  $\mu\text{m}$ , connector: LC/B-FOC (ST), degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL SM PATCH 5,0 LC-ST - 2901828



Assembled FO cable, break out cable, single-mode fiberglass 9/125  $\mu\text{m}$ , connector: LC / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL SM PATCH 1,0 SC-ST - 2901832



Assembled FO cable, break out cable, single-mode fiberglass 9/125  $\mu\text{m}$ , connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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#### FO patch cable - FL SM PATCH 2,0 SC-ST - 2901833



Assembled FO cable, break out cable, single-mode fiberglass 9/125  $\mu\text{m}$ , connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL SM PATCH 5,0 SC-ST - 2901834



Assembled FO cable, break out cable, single-mode fiberglass 9/125  $\mu\text{m}$ , connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

FO patch cable - FL SM PATCH 1,0 ST-ST - 2901836



Assembled FO cable, break out cable, single-mode fiberglass 9/125 µm, connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

FO patch cable - FL SM PATCH 2,0 ST-ST - 2901837



Assembled FO cable, break out cable, single-mode fiberglass 9/125 µm, connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

FO patch cable - FL SM PATCH 5,0 ST-ST - 2901838



Assembled FO cable, break out cable, single-mode fiberglass 9/125 µm, connector: B-FOC (ST) / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

### Plug/Adapter

FO plug connectors - PSM-SET-B-FOC/4-HCS - 2708481



B-FOC (ST) connector set for HCS fiber, for self assembly consisting of 4 quick mounting connectors with bend protection sleeve

Fiber optic coupling - PSM-SET-BFOC-LINK/2 - 2799429



Coupling; set consisting of 2 couplings for connecting B-FOC plugs

## FO converters - PSI-MOS-RS232/FO 850 T - 2708423

### Accessories

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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### Tools

Assembly tool - PSM-HCS-KONFTOOL/B-FOC - 2708465



HCS assembly kit for B-FOC (ST) quick mounting connectors, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, microscope, fiber cleaving tool for standard HCS and HCS GI fibers, and documentation

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



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

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# FO converters - PSI-MOS-RS232/FO 850 T - 2708423

## Accessories

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



DIN rail power supply unit, primary-switched mode, slim design, output: 24 V DC / 1.5 A

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



DIN rail connector for DIN rail power supply unit, gold-plated contacts, for DIN rail mounting, 5-pos.

Electronic housing - ME 17,5 TBUS 1,5/PP000-3,81 BK - 2890014

Plug component

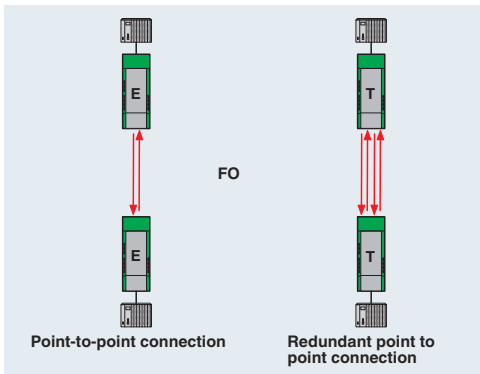
Interface converter - PSM-ME-RS232/RS485-P - 2744416



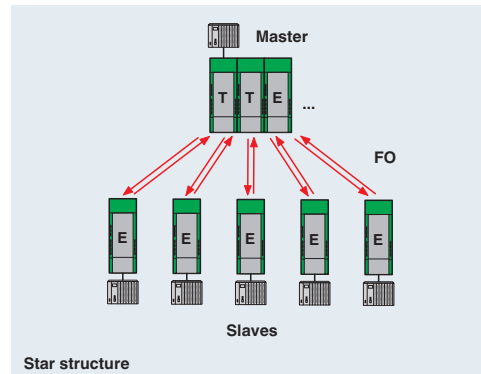
Interface converter, for converting RS-232 (V.24) to RS-422 (V.11) and RS-485, with electrical isolation, 2 channels, rail-mountable

## Drawings

Application drawing

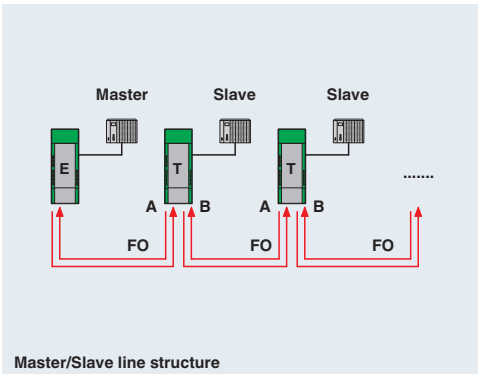


Application drawing



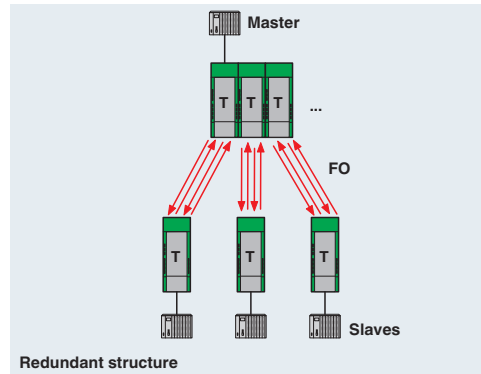
# FO converters - PSI-MOS-RS232/FO 850 T - 2708423

Application drawing



Master/Slave line structure

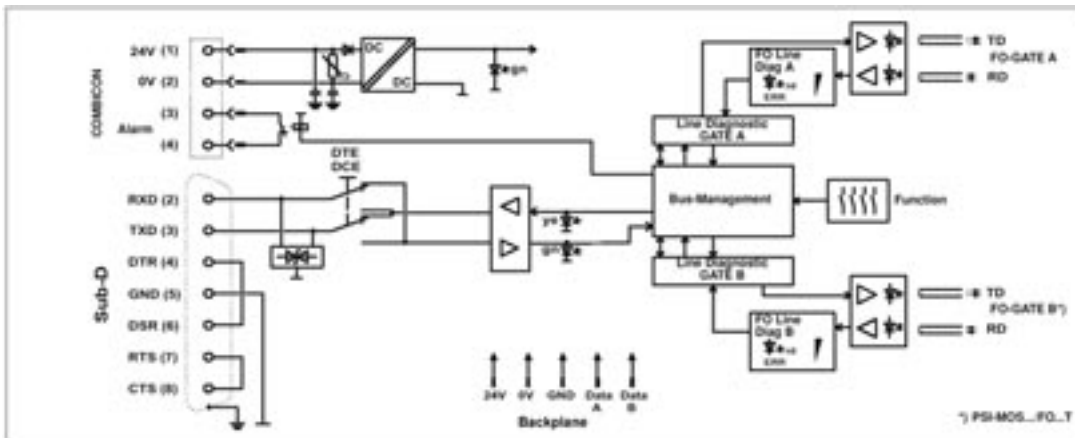
Application drawing



Redundant structure

Master/Slave line structure

Block diagram



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

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