

# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

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FO converter with integrated optical diagnosis, alarm contact, for PROFIBUS up to 12 Mbps, terminal equipment with an FO interface (BFOC), 850 nm, for fiber glass cable

## Product Features

- Connections can be plugged in using a COMBICON screw terminal block
- 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
- Automatic data rate detection or fixed data rate setting via DIP switches
- High-quality electrical isolation between all interfaces (PROFIBUS // 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
- Integrated optical diagnostics for continuous monitoring of fiber optic paths
- 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
- Suitable for all data rates up to 12 Mbps
- Bit retiming for any cascading depth



## Key commercial data

|                  |               |
|------------------|---------------|
| package_quantity | 1             |
| GTIN             | 4017918973971 |

## Technical data

### Note

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

### 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 |

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## Technical data

### Ambient conditions

|   |  |
|---|--|
| <b>Permissible humidity (operation)</b> | 30 % ... 95 % (non-condensing)                           |
| <b>Altitude</b>                         | 5000 m (For restrictions see manufacturer's declaration) |
| <b>Degree of protection</b>             | IP20   |
| <b>Noise immunity</b>                   | EN 61000-6-2:2005  |

### Serial interface

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

### Optical interface FO

|  |   |
|--|---|
| <b>Transmit capacity, minimum</b>                    | -4.2 dBm (200/230 μm)   |
| <b>Transmit capacity, minimum</b>                    | -17.8 dBm (50/125 μm)   |
| <b>Transmit capacity, minimum</b>                    | -14.6 dBm (62,5/125 μm)   |
| <b>Minimum receiver sensitivity</b>                  | -30 dBm (50/125 μm)   |
| <b>Overrange receiver</b>                            | -3 dBm (200/230 μm)   |
| <b>Wavelength</b>                                    | 850 nm  |
| <b>Transmission length incl. 3 dB system reserve</b> | 2600 m (with F-G 50/125 2.5 dB/km)                              |
| <b>Transmission length incl. 3 dB system reserve</b> | 3300 m (with F-G 62,5/125 3.0 dB/km)                            |
| <b>Transmission length incl. 3 dB system reserve</b> | 800 m (With F-K 200/230 10 dB/km with quick mounting connector) |
| <b>Transmission medium</b>                           | HCS fiber   |
| <b>Transmission medium</b>                           | Multi-mode fiberglass   |
| <b>Transmission protocol</b>                         | Protocol-transparent to the RS-485 interface                    |
| <b>Connection method</b>                             | B-FOC (ST <sup>®</sup> )  |

### Power supply

|                                 |                     |
|---------------------------------|---------------------|
| <b>Nominal supply voltage</b>   | 24 V DC             |
| <b>Supply voltage range</b>     | 18 V DC ... 30 V DC |
| <b>Max. current consumption</b> | 130 mA              |

# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

## Technical data

### Power supply

|                             |                                       |
|-----------------------------|---------------------------------------|
| Typical current consumption | 120 mA (24 V DC)                      |
| Connection method           | COMBICON plug-in screw terminal block |

### 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 <sub>rms</sub> (50 Hz, 1 min.)   |
| Electromagnetic compatibility            | Conformance with EMC Directive 2004/108/EC  |
| Noise emission                           | EN 55011  |
| Net weight                               | 185 g   |
| Housing material                         | PA 6.6-FR   |
| Color                                    | green   |
| MTBF                                     | 252 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))                        |
| MTBF                                     | 42 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))                     |
| MTTF                                     | 247 Years (SN 29500 standard, temperature 25°C, operating cycle 21 % (5 days a week, 8 hours a day))                        |
| MTTF                                     | 200 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))                   |
| MTTF                                     | 130 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!)                        |
| ATEX                                     | # 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  |
| 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

### 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

# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

## classifications

### ETIM

|                 |          |
|-----------------|----------|
| <b>ETIM 2.0</b> | EC001423 |
| <b>ETIM 3.0</b> | EC001423 |
| <b>ETIM 4.0</b> | EC001423 |
| <b>ETIM 5.0</b> | EC001423 |

### UNSPSC

|                      |          |
|----------------------|----------|
| <b>UNSPSC 6.01</b>   | 30211506 |
| <b>UNSPSC 7.0901</b> | 39121008 |
| <b>UNSPSC 11</b>     | 39121008 |
| <b>UNSPSC 12.01</b>  | 39121008 |
| <b>UNSPSC 13.2</b>   | 43201553 |

## approvals

ATEX / UL Listed / cUL Listed / ATEX / UL Listed / cUL Listed / cULus Listed / UL Recognized / cUL Recognized / UL Recognized / cUL Recognized / DNV / cULus Recognized /

### Approval details

|                            |  |
|----------------------------|--|
| <b>ATEX</b>                |  |
| Nominal voltage UN         |  |
| Nominal current IN         |  |
| mm <sup>2</sup> /AWG/kcmil |  |

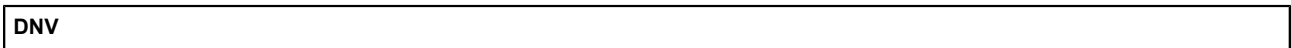
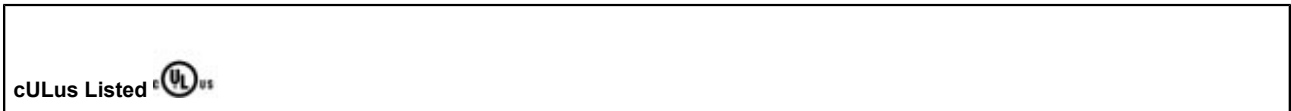
|                  |  |
|------------------|--|
| <b>UL Listed</b> |  |
|------------------|--|

|                   |  |
|-------------------|--|
| <b>cUL Listed</b> |  |
|-------------------|--|

|                            |  |
|----------------------------|--|
|                            |  |
| Nominal voltage UN         |  |
| Nominal current IN         |  |
| mm <sup>2</sup> /AWG/kcmil |  |

# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

approvals



accessories

**Connector set**

PSM-SET-B-FOC/4-HCS - 2708481



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accessories

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### Data cable by the meter

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



PSM-LWL-HCSO-200/230 - 2799445



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



PSM-LWL-GDO- 50/125 - 2799432



PSM-CABLE-PROFIB/FC - 2744652



### Power supply

## FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

### accessories

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



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### DIN rail connector

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



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### Assembly tool

PSM-HCS-KONFTOOL/B-FOC - 2708465



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### Measuring tools

PSM-FO-POWERMETER - 2799539



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### Adapter

PSM-SET-BFOC-LINK/2 - 2799429



# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

## accessories

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PSM PTK - 2760623



PSM PTK-4 - 2799364



## Data plug

SUBCON-PLUS-PROFIB/SC2 - 2708232



SUBCON-PLUS-PROFIB/PG/SC2 - 2708245



SUBCON-PLUS-PROFIB/AX/SC - 2744380





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### accessories

SUBCON-PLUS-PROFIB/90/PG/SC - 2313708



SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685



SUBCON-PLUS-PROFIB/AX/M12 - 2902321



SUBCON-PLUS-PROFIB/90X/M12 - 2902729



SUBCON-PLUS-PROFIB/90/M12 - 2902318



SUBCON-PLUS-PROFIB/35/M12 - 2902320



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accessories

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### Screwdriver tools

SZS 0,4X2,5 VDE - 1205037



### Stripping tool

PSM-STRIP-FC/PROFIB - 2744623



### Interface converter

PSI-REP-PROFIBUS/12MB - 2708863



PSM-ME-RS485/RS485-P - 2744429



### Data cable preassembled

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## FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

### accessories

FL MM PATCH 1,0 LC-ST - 2989174



FL MM PATCH 2,0 LC-ST - 2989271



FL MM PATCH 5,0 LC-ST - 2901801



FL MM PATCH 1,0 SC-ST - 2901809



FL MM PATCH 5,0 SC-ST - 2901811



FL MM PATCH 1,0 ST-ST - 2901815



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### accessories

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FL MM PATCH 2,0 ST-ST - 2901816



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FL MM PATCH 5,0 ST-ST - 2901817



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FL MM PATCH 1,0 ST-SCRJ - 2901820



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FL MM PATCH 2,0 ST-SCRJ - 2901821



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FL MM PATCH 5,0 ST-SCRJ - 2901822



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### Terminal resistor

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### accessories

PSI-TERMINATOR-PB - 2313944



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### accessories

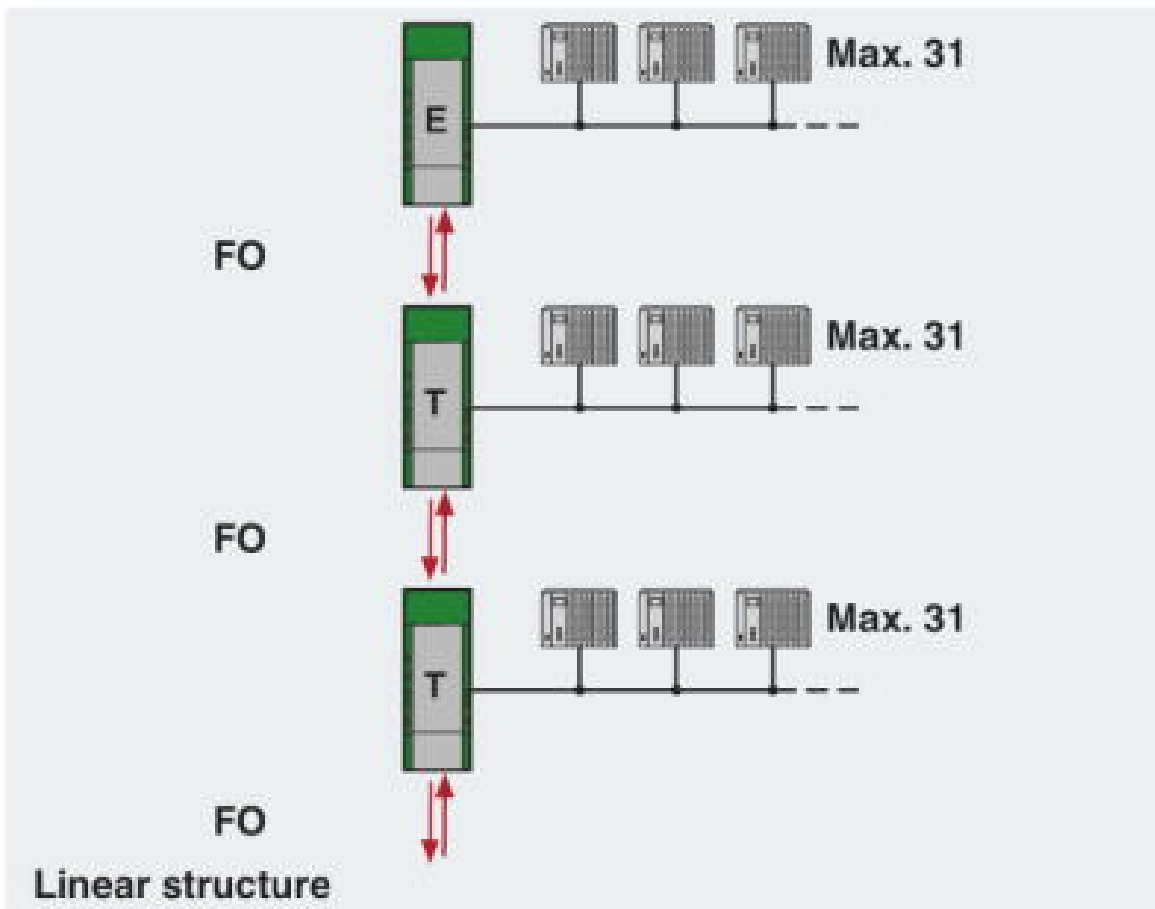
ME 17,5 TBUS 1,5/PP000-3,81 BK - 2890014

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### Drawings

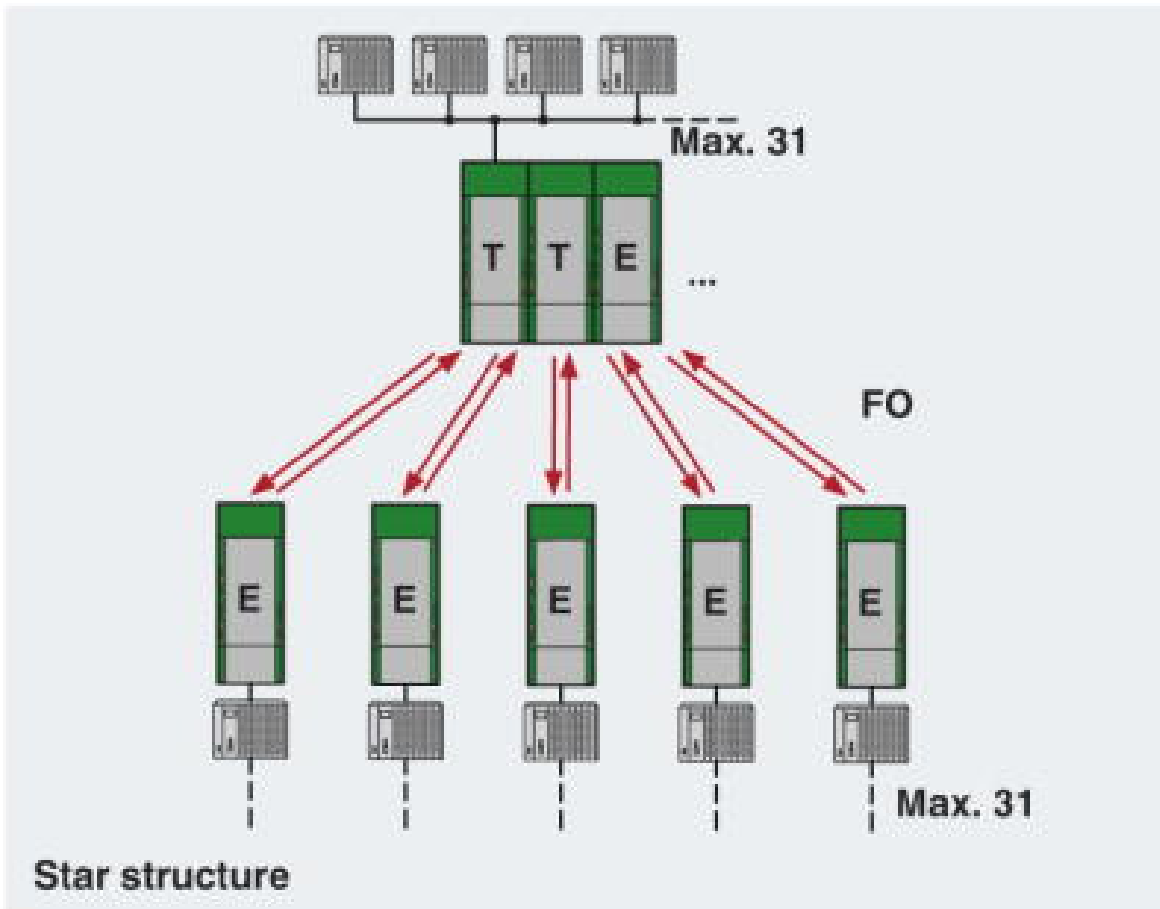
# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

Application drawing



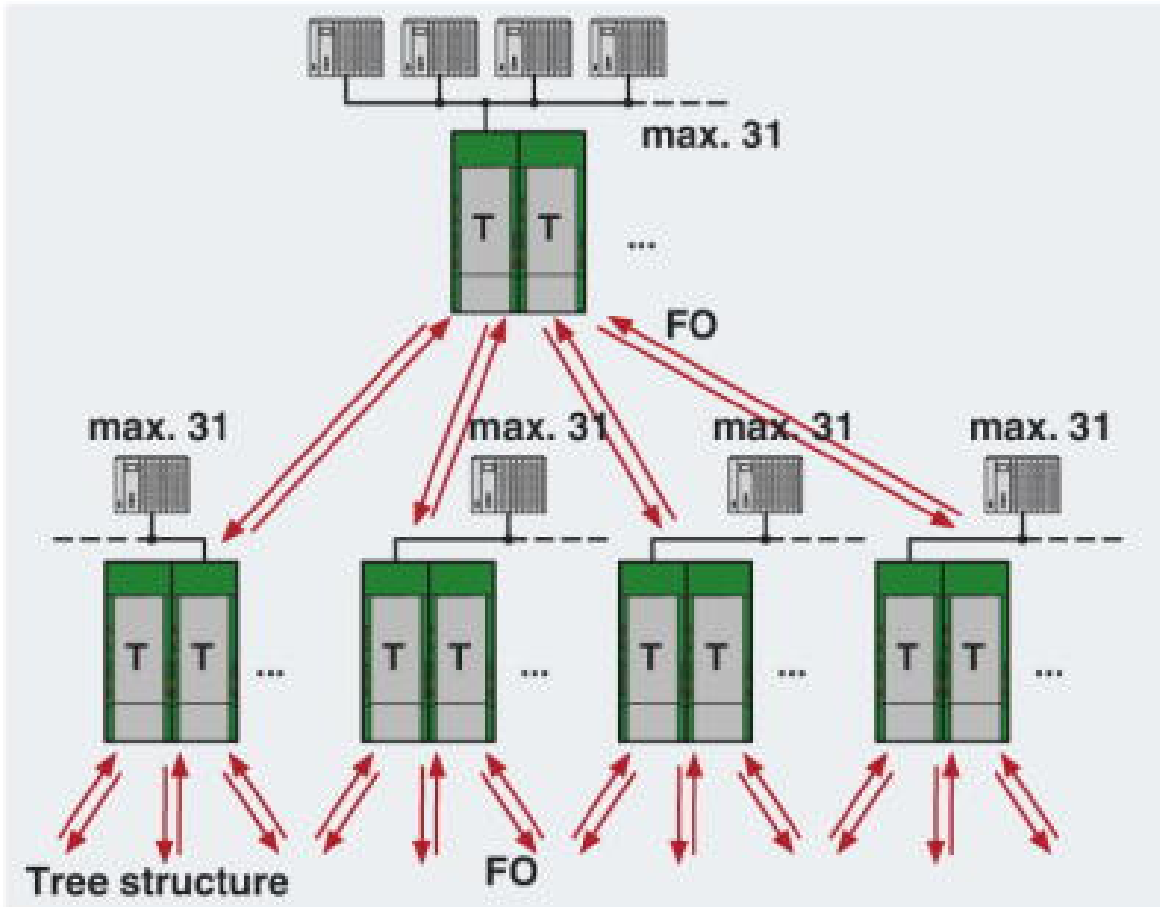
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Application drawing



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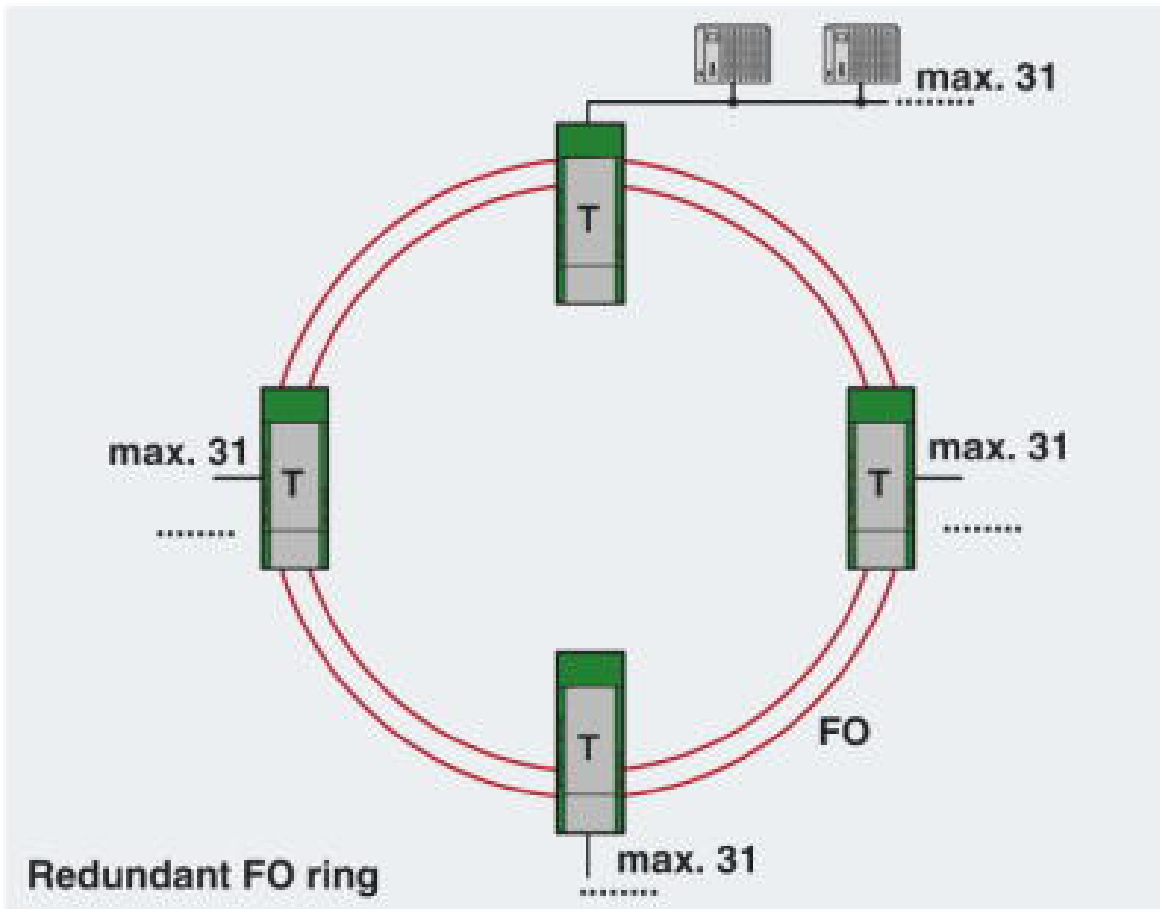
Application drawing





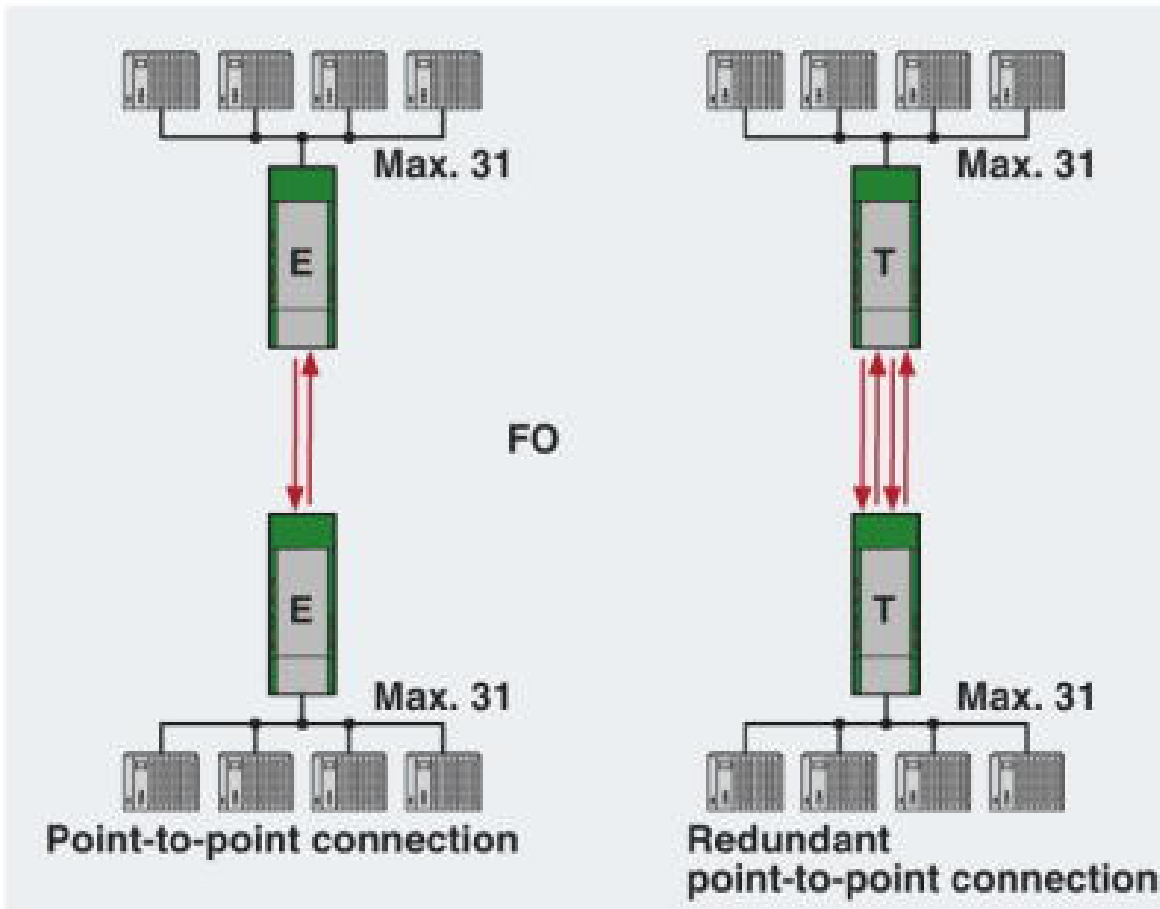
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Application drawing

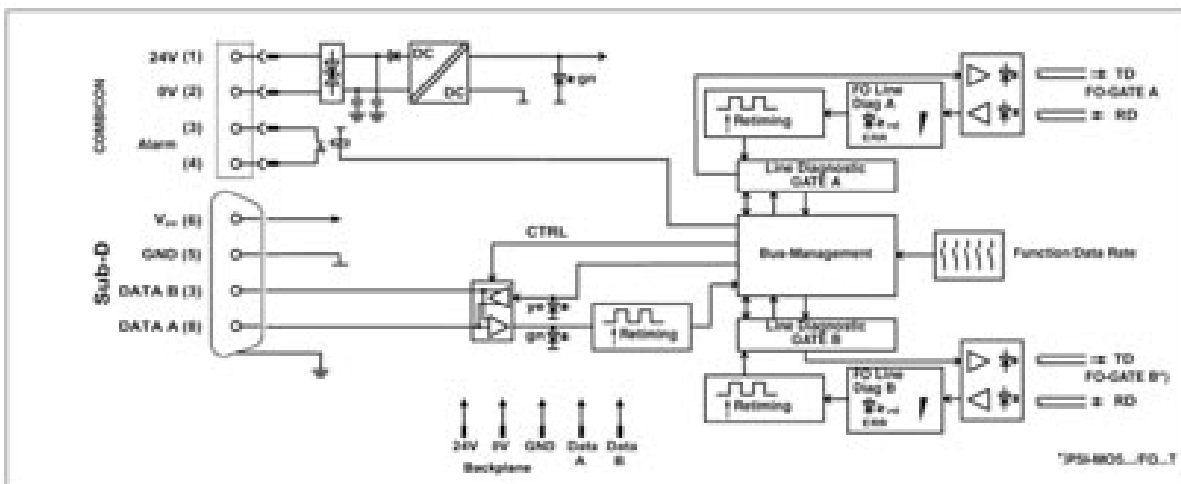


# FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274

Application drawing



Block diagram



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

