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FO converter with integrated optical diagnosis, for DeviceNet™, CAN, CANopen® to 800 kbps, extension/ redundancy module, interfaces: 1x FO (FSMA), 660 nm, for polymer/HCS fiber cable

#### **Product Features**

- ☑ Data rates of up to 800 kbps, set via DIP switches
- ✓ Approved for use in zone 2
- 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
- High-quality electrical isolation between all interfaces (DeviceNet // fiber optic port // power supply // backplane)
- ☑ Integrated bus termination resistor can be connected internally
- Connections can be plugged in using a COMBICON screw terminal block
- Floating switch contact in the basic module for leading alarm generation in relation to critical fiber optic paths







## Key commercial data

| Packing unit                         | 1 pc      |
|--------------------------------------|-----------|
| Weight per Piece (excluding packing) | 162.8 GRM |
| Custom tariff number                 | 85176200  |
| Country of origin                    | Germany   |

#### Technical data

#### Note

| Utilization restriction area |
|------------------------------|
|------------------------------|

#### **Dimensions**

| Width | 22.5 mm |
|-------|---------|



## Technical data

## Dimensions

| Height | 99 mm    |
|--------|----------|
| Depth  | 114.5 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  |

#### Serial interface

| Interface 1               | CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen |
|---------------------------|--|
| Connection method         | Pluggable screw connection   |
| File format/coding        | Bit stuffing, NRZ  |
| Transmission medium       | Copper   |
| Transmission length       | ≤ 5000 m (Dependent on the data rate and the protocol used)                |
| Serial transmission speed | ≤ 800 kbps   |

## Optical interface FO

| Transmit capacity, minimum                    | -6.2 dBm (980/1000 μm)  |
|---|---|
|   | -16.9 dBm (200/230 μm)  |
| Minimum receiver sensitivity                  | -30.2 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   |
|   | HCS fiber   |
| 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       |

## Power supply



## Technical data

## Power supply

| Supply voltage range        | 10 V DC 30 V DC  |
|-----------------------------|--|
| Max. current consumption    | 100 mA   |
| Typical current consumption | 100 mA (24 V DC)   |
| Connection method           | Pluggable COMBICON screw terminal block through basic module |

## General

| Direction discovering                    | . 05 0/ /'111)  |
|--|---|
| Bit distortion, input                    | ± 35 % (permitted)  |
| Bit distortion, output                   | < 6.25 %  |
| Electrical isolation                     | VCC // CAN  |
| 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  |
| Housing material                         | PA 6.6-FR   |
| Color                                    | green   |
| MTBF                                     | 456 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))                        |
|  | 89 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, 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

| ETIM 2.0 | EC001423 |
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## Classifications

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| 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

| Αı | ac | rov | als |
|----|----|-----|-----|
|    |    |     |     |

Approvals

UL Recognized / cUL Recognized / cULus Recognized

Ex Approvals

ATEX / UL Listed

Approvals submitted

#### Approval details

UL Recognized **5** 

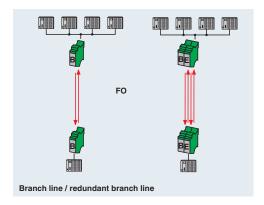
cUL Recognized

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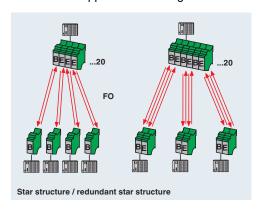


## Drawings

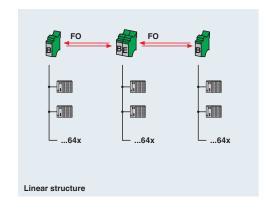
Application drawing



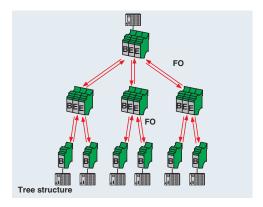
Application drawing



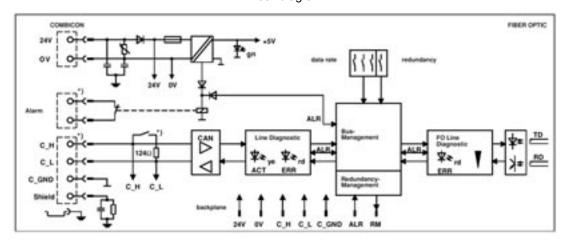
Application drawing



Application drawing



Block diagram



<sup>\*)</sup> Only in the basic module



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