

FL MC 10/100BASE-T/FO-660 - FO converters



2708193

<https://www.phoenixcontact.com/us/products/2708193>

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FO converter, for converting 10/100Base-T to polymer and PCF fiber, (660 nm), SC-RJ FO connection (PROFINET standard), rail-mountable, supply 24 V DC

Your advantages

- Choice between local or transparent auto negotiation function for maximum transmission capacity
- Link through function for easy connection monitoring. The availability of the connected cable connection and devices is monitored and indicated.
- Backplane bus contact, enabling alternative or redundant 24 V power supply

Commercial data

Item number	2708193
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN06
Product key	DNC311
GTIN	4017918973957
Weight per piece (including packing)	194.9 g
Weight per piece (excluding packing)	120.1 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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Product properties

Product type	Media converter
MTTF	885 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	446 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	202 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	564 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	136 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

Electrical properties

Electrical isolation	VCC // Ethernet
Maximum power dissipation for nominal condition	2.4 W
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
	1500 V

Supply

Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
	23 V DC ... 25 V DC (as an alternative or redundant, via backplane bus contact and system current supply)
Nominal supply voltage	24 V DC
Typical current consumption	≤ 100 mA (24 V DC)
Protective circuit	Reverse polarity protection

Function

Status and diagnostic indicators	UL (communications power, green)
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Output data

Switching

Output name	Relay output
Number of outputs	2
Contact switching type	N/O contact
Maximum switching voltage	60 V AC/DC
Max. switching current	1 A

Connection data

Supply

Connection method	Plug-in screw terminal block (COMBICON), redundancy possible
Tightening torque	0.56 Nm ... 0.79 Nm

Interfaces

Signal	Ethernet
	PROFINET

Data: optical FO

Transmit capacity, minimum	min. -8 dBm (980/1000 µm, static)
	min. -19 dBm (200/230 µm, static)
Transmit capacity, maximum	max. -2 dBm (980/1000 µm, static)
	max. -11 dBm (200/230 µm, static)
Transmission length incl. 3 dB system reserve	70 m (Polymer fiber with F-P 980/1000 230 dB/km at 10 Mbps)
	300 m (PCF fiber with F-K 200/230 8 dB/km at 10 Mbps)
	50 m (Polymer fiber with F-P 980/1000 230 dB/km at 100 Mbps)
	100 m (PCF fiber with F-K 200/230 8 dB/km at 100 Mbps)
	300 m (HCS GI fiber with F-GK 200/230 at 100 Mbps)
	400 m (HCS GI fiber with F-GK 200/230 at 10 Mbps)
Connection method	SC-RJ
Wavelength	660 nm
Minimum receiver sensitivity	min. -23 dBm (980/1000 µm, static)
	min. -26.8 dBm (200/230 µm, static)
Transmission medium	Polymer fiber
	PCF fiber

Data: Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3

Transmission speed	10/100 Mbps
Connection method	RJ45 jack, shielded
No. of channels	1
Transmission length	100 m (shielded twisted pair)
Transmission medium	Copper
Signal LEDs	Activity (yellow), link status (green, UL flashing), 100 Mbps (green)
Auto-negotiation modes	optionally transparent via TP and FO (default) or locally on TP
Link through	Link down is automatically forwarded to the second connection
MDI-/MDI-X switchover	Built-in switch for line (1:1) and crossover connection

Dimensions

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Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color (Housing)	green (RAL 6021)
Material (Housing)	PA V0

Cable/line

FO cable

Fiber types	980/1000 µm
	200/230 µm
	Polymer fiber
	PCF fiber

Mechanical tests

Free fall in accordance with IEC 60068-2-32	: 1 m
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	: 5g, 150 Hz, 1.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	: 15g, 11 ms period, half-sine shock pulse

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-30 °C ... 70 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	Ⓔ II 3 G Ex nA nC IIC T4 Gc X
Note	Please follow the special installation instructions in the documentation!

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UL, USA/Canada

Identification	508 Recognized
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Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2:2005

Noise emission

Standards/regulations	EN 50081-2
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Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Contact discharge	± 6 kV (Test Level 3)
Discharge in air	± 8 kV (Test Level 3)
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz (Test Level 3)
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

Input	± 4 kV (Test Level 3)
Signal	± 2 kV (Test Level 3)
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5
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Surge current load (surge)

Input	± 0.5 kV (DC supply)
Signal	± 2 kV
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

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Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications

Standards and regulations

Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0
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Mounting

Mounting type	DIN rail mounting
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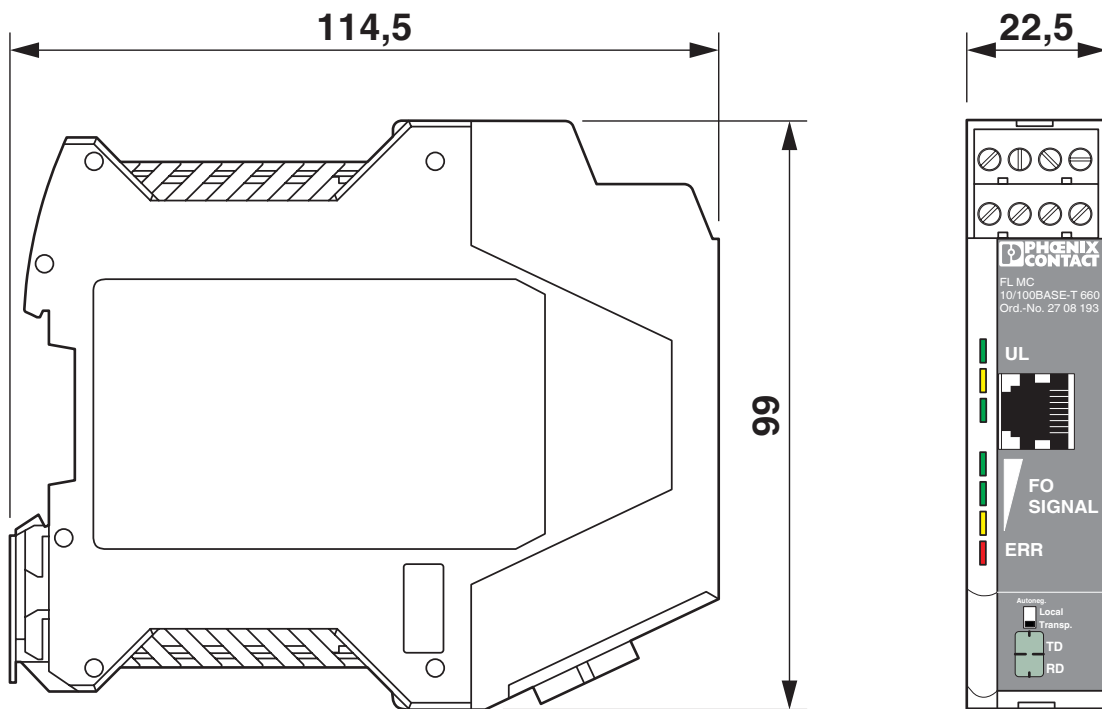
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Drawings

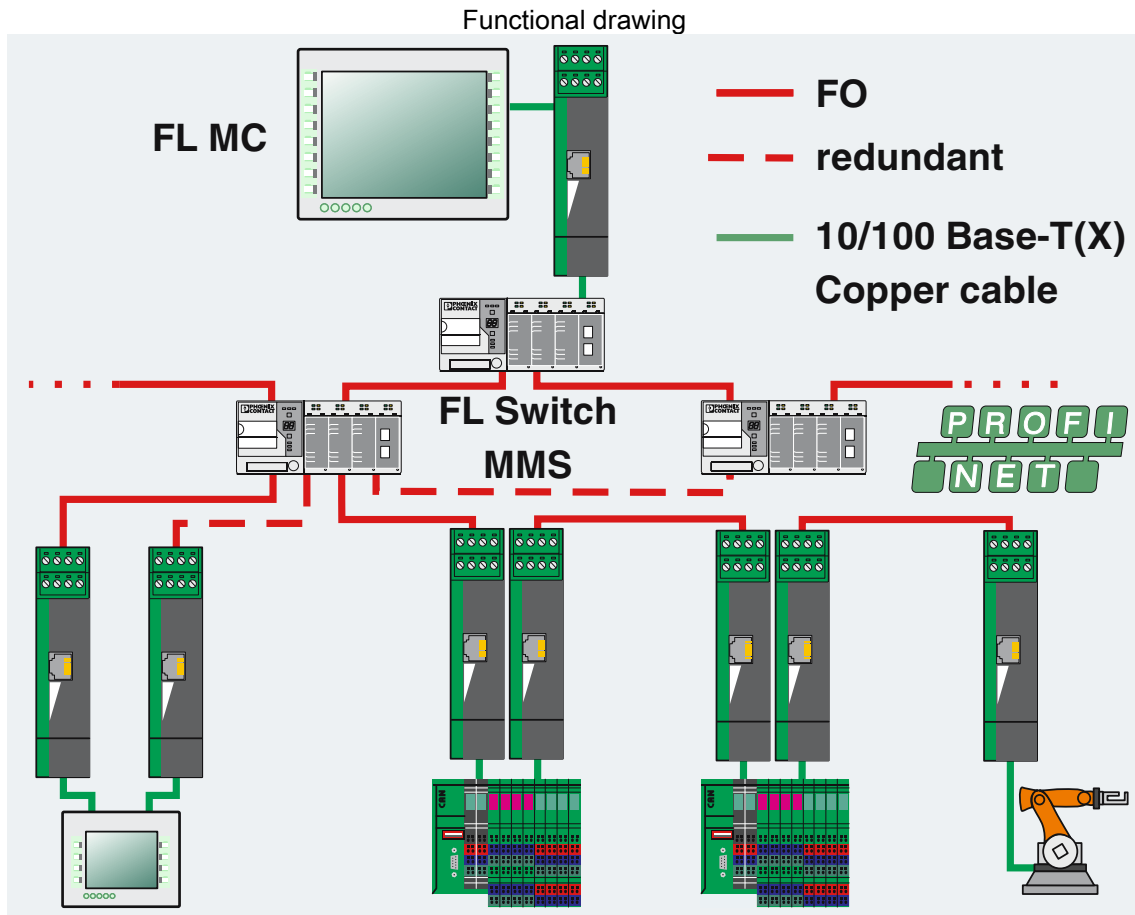
Dimensional drawing



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Star, linear, and redundant ring structure in combination with modular switches

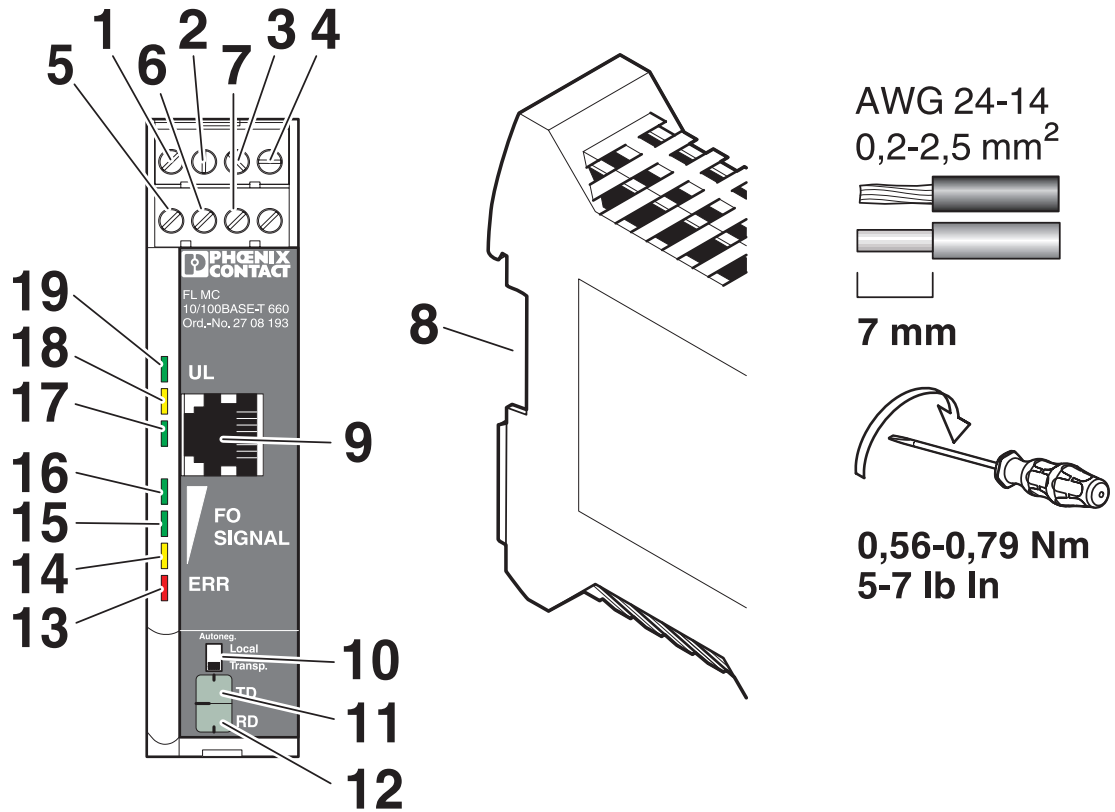
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Schematic diagram



Front view

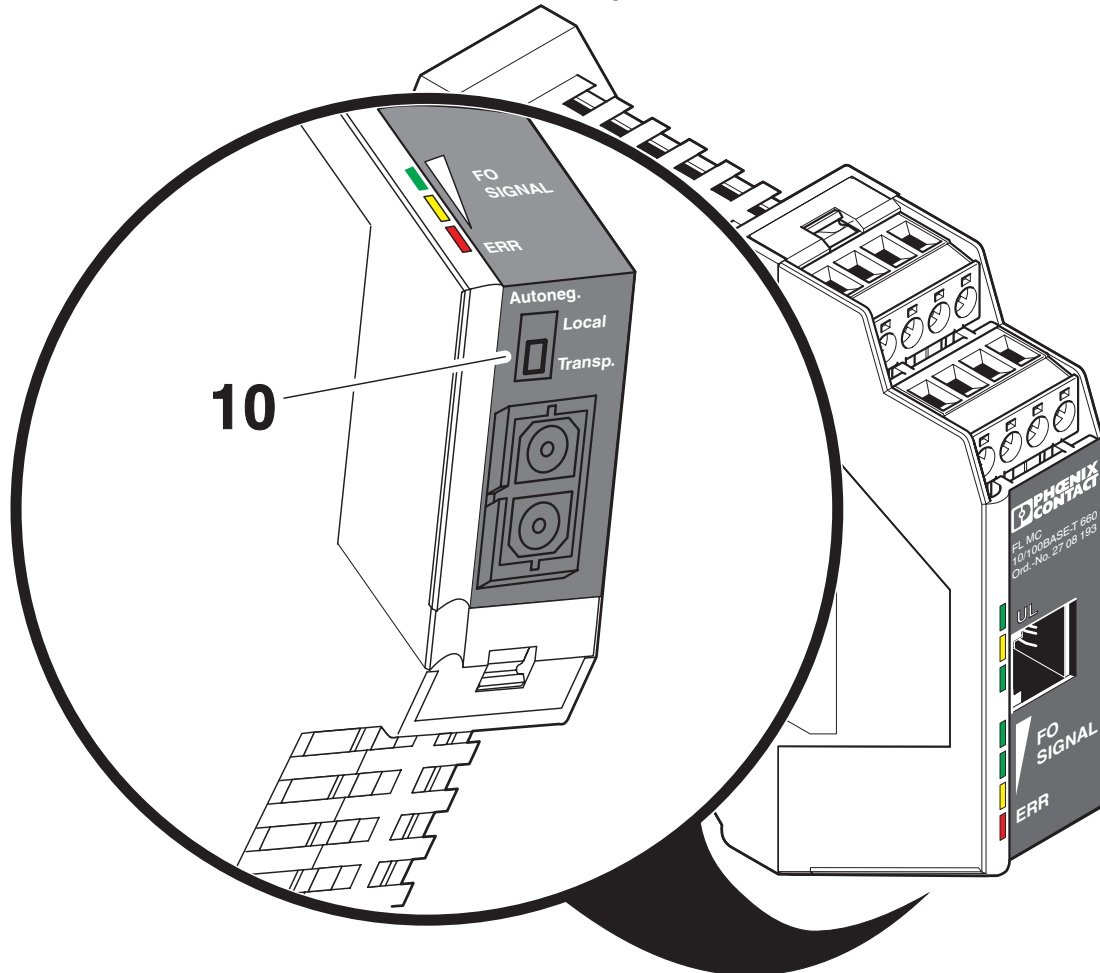
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Schematic diagram



Mode selector switch

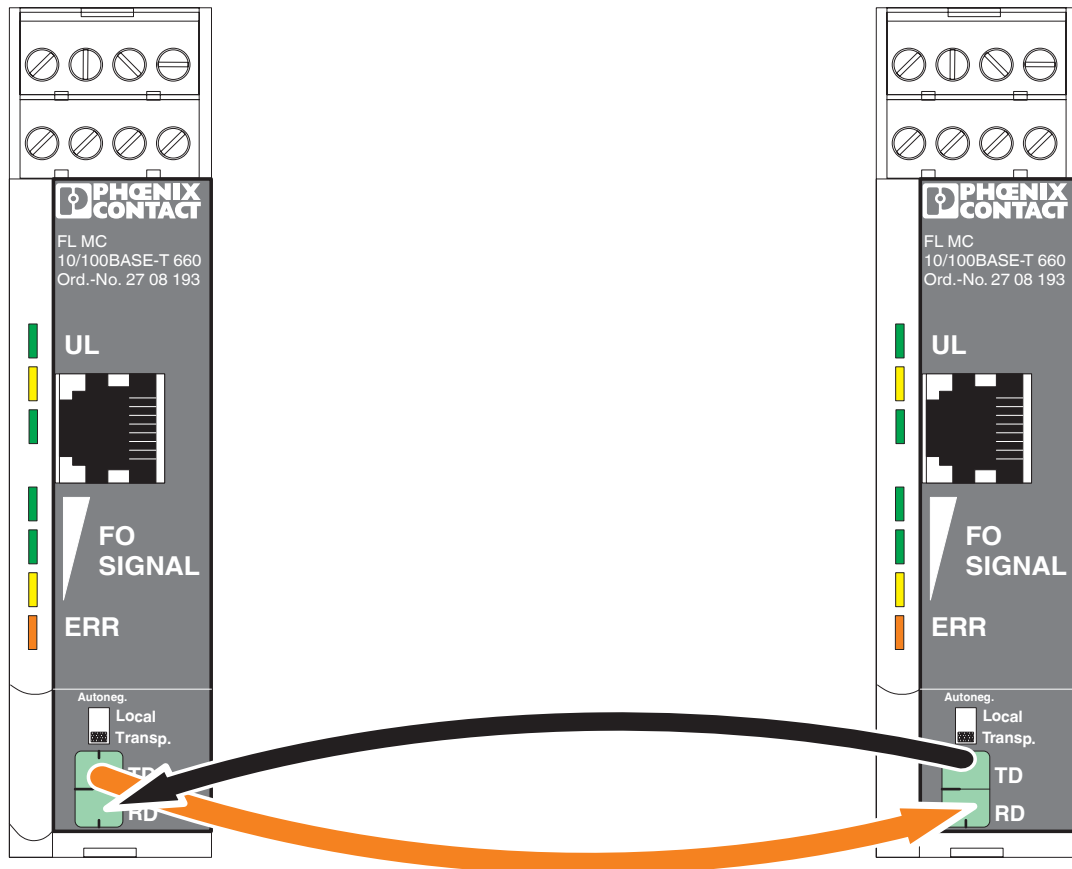
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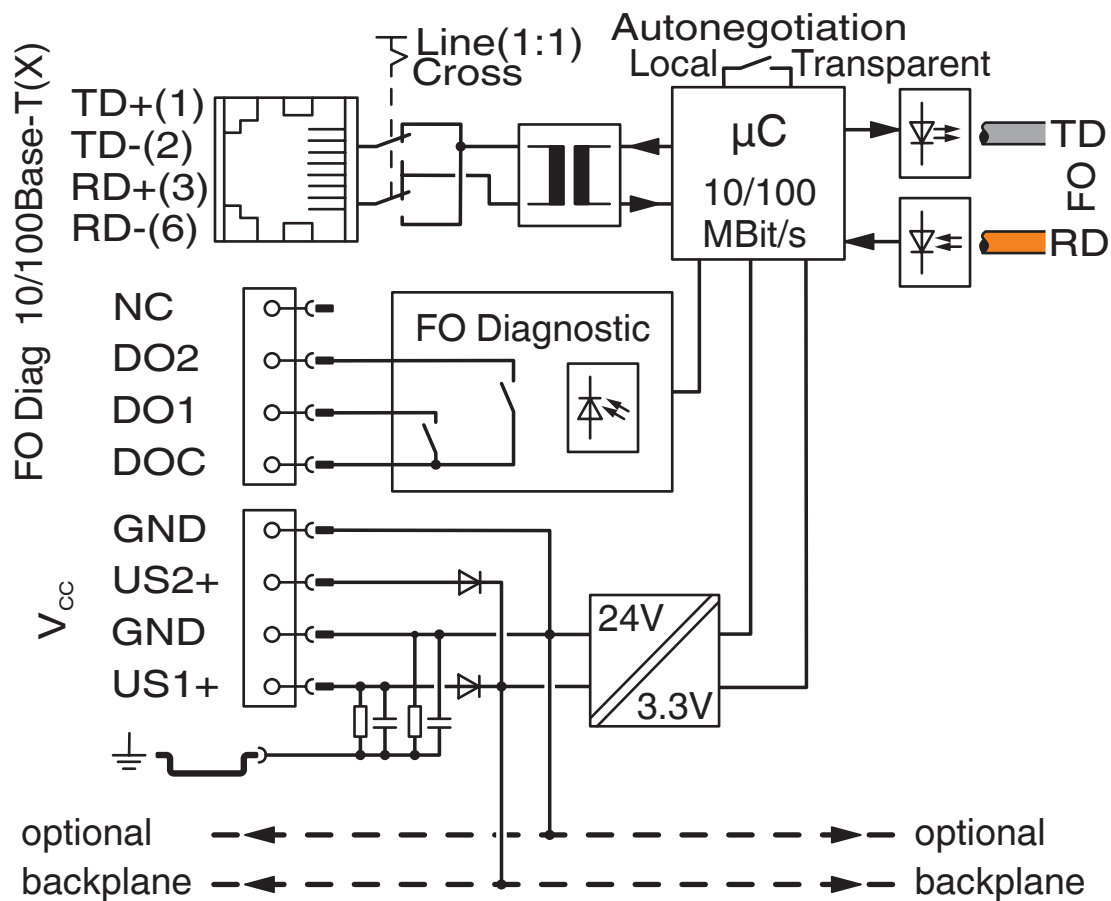
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Schematic diagram



Connection of the cables

Block diagram



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Environmental product compliance

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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