

# MC 1000E-MM ST - FO converters



1330504

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Fiber optic converter with ST (B-FOC) connection (1310 nm) for 100Base-TX to multimode fiber optics, DIN rail mountable, extended temperature range, redundant power supply, IECEx, ATEX, UL HazLoc, IEC 61850, IEEE 1613, DNV.

## Product description

The MC 1000E-MM ST media converter comes with one 10/100 Mbps twisted-pair RJ45 port and one 100 Mbps multimode fiber optics port with an ST (B-FOC) connector, ruggedized EMI protection, and wide temperature range.

## Your advantages

- Auto MDI/MDI-X switch-over
- Data transfer rates of 100 Mbps
- Link fault pass through (LFPT) function for easy connection monitoring
- Network structure according to IEC 61850-3
- IEEE 1613
- Class 1 laser product complies with EN 60825-1

## Commercial data

Item number	1330504
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC314
GTIN	4063151627041
Weight per piece (including packing)	279.9 g
Weight per piece (excluding packing)	180 g
Customs tariff number	85176200
Country of origin	CA

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## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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### Product properties

Product type	Media converter
Product family	MC 1000E
MTTF	68.5 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)
	508.3 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	551.7 Years (Telcordia standard, temperature 25 °C, operating cycle 100 % (7 days a week, 24 hours a day))

### Electrical properties

Maximum power dissipation for nominal condition	1.5 W
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#### Supply

Supply voltage range	12 V DC ... 57 V DC
Nominal supply voltage	24 V DC
	48 V DC
Typical current consumption	62 mA (24 V DC)
Max. current consumption	170 mA (12 V DC, 75 °C)

### Output data

#### Signal

Voltage output signal	12 V DC ... 48 V DC (depending on the input voltage)
Current output signal	100 mA

### Connection data

#### Supply

Connection method	Push-in spring connection
Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section, flexible [AWG]	24 ... 12
Stripping length	10.00 mm

### Interfaces

Signal	Ethernet
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#### Data: optical FO

Transmit capacity, minimum	-20 dBm (62.5/125 µm, multimode fiberglass)
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	-23.5 dBm (50/125 µm, multimode fiberglass)
Transmit capacity, maximum	-14 dBm
Transmission length incl. 3 dB system reserve	2 km
Connection method	B-FOC (ST)
Wavelength	1310 nm
Minimum receiver sensitivity	-32 dBm
Maximum receiver sensitivity	-8 dBm
Transmission medium	Multi-mode fiberglass

Data: Ethernet interface, 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 (twisted pair, shielded)
Transmission medium	Copper
Signal LEDs	LNK/ACT, SPD, Err, US, US2
Auto-negotiation modes	Auto
Link through	Link fault pass through
MDI-/MDI-X switchover	Auto-MDI(X)

## Dimensions

Width	22.5 mm
Height	125 mm
Depth	90 mm

## Material specifications

Housing material	Polyamide fiber reinforced
	Aluminum / steel sheet DC01

## Cable/line

FO cable

Fiber types	50/125 µm
	62.5/125 µm
	Fiberglass

## Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Operation: 5g, 150 Hz, Criterion 3
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 30g, 11 ms half-sine shock pulse

## Environmental and real-life conditions

Ambient conditions

Degree of protection	IP30
Ambient temperature (operation)	-40 °C ... 75 °C

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Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (in acc. with UL)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Shock	300 m/s <sup>2</sup> , 11 ms (IEC 60068-2)

## Approvals

### CE

Certificate	CE-compliant
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### UL, USA/Canada

Identification	Class I, Division 2, Groups A, B, C, and D, T4 Class I, Zone 2, IIC T4
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### IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX UL 25.0019X

### ATEX

Identification	⊕ II 3 G Ex ec IIC T4 Gc
Certificate	UL 25 ATEX 3348X

## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	IEC 61850-3, IEEE 1613

### Electrostatic discharge

Standards/regulations	EN 61000-4-2
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### Electrostatic discharge

Comments	Criterion B
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### Electromagnetic HF field

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

Comments	Criterion A
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### Fast transients (burst)

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

Comments	Criterion A
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### Surge current load (surge)

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

Comments	Criterion B
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## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Comments	Criterion A
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## Emitted interference

Standards/regulations	EN 55032
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## Mounting

Mounting type	DIN rail mounting
Mounting position	on horizontal DIN rail NS 35 in acc. with EN 60715
Useable DIN rail type	DIN rail: 35 mm

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## Approvals

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**cULus Listed**

Approval ID: E238705

**BSH**

Approval ID: BSH Nr. 1176



**IECEE CB Scheme**

Approval ID: CA-11671-M1-UL

**BSH**

Approval ID: BSH Nr. 1176



**cULus Listed**

Approval ID: E238705

**DNV**

Approval ID: TAA00003RU

**DNV**

Approval ID: TAA00003RU



**IECEx**

Approval ID: IECEx UL 25.0019X



**ATEX**

Approval ID: UL 25 ATEX 3348X



**cULus Listed**

Approval ID: E196811



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Approval ID: E196811

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**IECEx**

Approval ID: IECEx UL 25.0019X



**ATEX**

Approval ID: UL 25 ATEX 3348X

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## Classifications

### ECLASS

ECLASS-13.0	19170411
ECLASS-15.0	19170411

### ETIM

ETIM 10.0	EC001467
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### UNSPSC

UNSPSC 21.0	43223323
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

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