

# FL MC 2000E SM40 LC - FO converters



2891156

<https://www.phoenixcontact.com/us/products/2891156>

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FO converter with LC duplex fiber optic connection (1300 nm), for converting 100Base-TX to single mode fiberglass. Auto MDI(X) function. Comprehensive link diagnostics. DIN rail mountable, 12 ... 57 V DC supply. Meets IEC 61850-3 and IEEE 1613 standards.

## Your advantages

- Data transfer rates of 100 Mbps
- Auto MDI/MDI-X switch-over
- Link fault pass through (LFPT) function for easy connection monitoring
- Network structure according to IEC 61850
- IEEE 1613

## Commercial data

Item number	2891156
Packing unit	1 pc
Sales key	DN06
Product key	DNC312
Catalog page	Page 353 (C-6-2019)
GTIN	4046356914239
Weight per piece (including packing)	488.4 g
Weight per piece (excluding packing)	488.4 g
Customs tariff number	85176200
Country of origin	TW

## Technical data

### Product properties

Product type	Media converter
MTTF	79.3 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)
Signal delay	700 ns (Pass-through mode, 100 Mbps, static)

### Electrical properties

Electrical isolation	VCC // FE // Ethernet
Test voltage data interface/power supply	1500 V AC (500 V AC, 1 minute)

### Supply

Supply voltage range	12 V DC ... 57 V DC
Nominal supply voltage	24 V DC
	48 V DC
Typical current consumption	110 mA (24 V DC)

### Output data

#### Switching

Output name	Relay output
Output description	Alarm output
Number of outputs	1
Contact switching type	N/C contact
Maximum switching voltage	24 V DC
Max. switching current	100 mA

### Connection data

#### Supply

Connection method	Plug-in screw terminal block (COMBICON), redundancy possible
Conductor cross section, flexible [AWG]	24 ... 12
Conductor cross section AWG	24 ... 12
Tightening torque	5 Nm ... 7 Nm

### Interfaces

Signal	Ethernet
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#### Data: optical FO

Transmit capacity, minimum	-5 dBm
Transmit capacity, maximum	0 dBm
Transmission length incl. 3 dB system reserve	40 km (fiberglass with F-G 9/125 0.36 dB/km)
	36 km (fiberglass with F-G 9/125 0.4 dB/km)
	29 km (fiberglass with F-G 9/125 0.5 dB/km)
Connection method	LC duplex

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Wavelength	1310 nm
Minimum receiver sensitivity	-35 dBm
Maximum receiver sensitivity	-3 dBm
Transmission medium	Single-mode fiberglass

Data: Ethernet interface, 100Base-Tx in acc. with IEEE 802.3u

Data rate	100 Mbps
Serial transmission speed	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, 100
Link through	Link fault pass through
MDI-/MDI-X switchover	Auto-MDI(X)
Data flow control/protocols	IEC 61850-3, IEEE 1613

## Dimensions

Width	30 mm
Height	130 mm
Depth	100 mm

## Material specifications

Housing material	Aluminum
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## Cable/line

FO cable

Fiber types	50/125 µm
	62.5/125 µm
	Fiberglass

## Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 75 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	4850 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Shock	300 m/s <sup>2</sup> , 11 ms (IEC 60068-2)
Air pressure (operation)	66 kPa ... 108 kPa
Air pressure (storage/transport)	66 kPa ... 108 kPa

## Approvals

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## Conformity/Approvals

Conformance	CE-compliant
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D

## EMC data

Noise immunity	IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 61000-6-4

## Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail NS 35 in acc. with EN 60715

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## Classifications

### ECLASS

ECLASS-11.0	19170411
ECLASS-12.0	19170411
ECLASS-13.0	19170411

### ETIM

ETIM 9.0	EC001467
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### UNSPSC

UNSPSC 21.0	43201500
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-10
	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.)	Lead(CAS: 7439-92-1)
SCIP	327f171a-26bd-4de2-8da8-67646f915ddb

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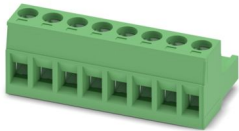
<https://www.phoenixcontact.com/us/products/2891156>

## Accessories

### MSTB 2,5/ 8-ST - PCB connector

1754562

<https://www.phoenixcontact.com/us/products/1754562>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: MSTB 2,5/...-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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### DT-LAN-CAT.6+ - Surge protection device

2881007

<https://www.phoenixcontact.com/us/products/2881007>



Surge protection in accordance with Class E<sub>A</sub> (CAT6<sub>A</sub>), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE++ / 4PPoE) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.

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## FL CAT5 PATCH 0,5 - Patch cable

2832263

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Patch cable, CAT5, assembled, 0.5 m



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## FL CAT5 PATCH 1,0 - Patch cable

2832276

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Patch cable, CAT5, assembled, 1 m



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## FL CAT5 PATCH 2,0 - Patch cable

2832289

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Patch cable, CAT5, assembled, 2 m



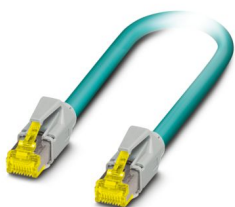
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## NBC-R4AC-R4AC-IE8A/.../... - Patch cable

1411854

<https://www.phoenixcontact.com/us/products/1411854>

Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6<sub>A</sub>, cable outlet: straight, Ethernet



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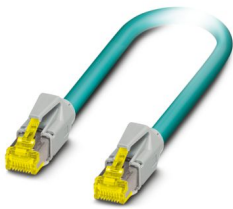
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## NBC-R4AC/10G-R4AC/10G-94F/2,0 - Patch cable

1408360

<https://www.phoenixcontact.com/us/products/1408360>



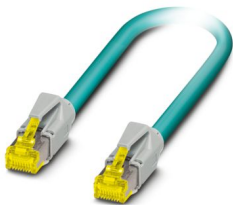
Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

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## NBC-R4AC/10G-R4AC/10G-94F/3,0 - Patch cable

1408365

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Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

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## FL DIN RA - DIN rail adapter

2891053

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The FL DIN RA is installed in a standard, 19-inch rack (EIA-310-D, IEC 60297-3-100) to allow DIN rail mounted equipment to be rack mounted.



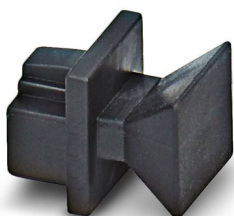
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## FL RJ45 PROTECT CAP - Dust protection

2832991

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Dust protection caps for RJ45 socket



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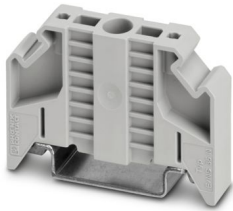


## E/NS 35 N - End bracket

0800886

<https://www.phoenixcontact.com/us/products/0800886>

End clamp, width: 9.5 mm, color: gray



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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)