

FL MC EF 1300 MM SC - FO converters



2902853
<https://www.phoenixcontact.com/us/products/2902853>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



FO converter with SC duplex fiber optic connection (1300 nm), for converting 10/100Base-T(X) to multi-mode fiberglass (50/125 µm). Auto negotiation and auto MDI(X) function. Comprehensive link diagnostics. DIN-rail mountable, 18 ... 30 V DC supply.

Product description

Optical transmission with FO technology provides superior immunity to interference at maximum transmission ranges without restricting the transmission bandwidth.

Your advantages

- Transmission ranges up to 10 km
- Auto negotiation
- Auto MDI/MDI-X switch-over
- Link fault pass through (LFPT) and far end fault (FEF) functions for easy connection monitoring
- 10/100 Mbps
- Shipbuilding approval in accordance with DNV GL

Commercial data

Item number	2902853
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC311
Catalog page	Page 351 (C-6-2019)
GTIN	4046356689236
Weight per piece (including packing)	170.6 g
Weight per piece (excluding packing)	178.7 g
Customs tariff number	85176200
Country of origin	DE

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Technical data

Notes

Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
------------	---

Product properties

Product type	Media converter
MTTF	1400 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	599 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	101 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	479 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	140 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
Signal delay	± 1.3 µs (Store and Forward mode, 10/100 Mbps, depending on the frame size)

System properties

Functionality

Basic functions	Store-and-forward media converter
-----------------	-----------------------------------

Electrical properties

Electrical isolation	according to IEEE 802.3
	VCC // FE // Ethernet
Maximum power dissipation for nominal condition	2.4 W
Test voltage data interface/power supply	0.5 kV _{rms} (50 Hz, 1 min.)

Supply

Supply voltage range	18 V DC ... 30 V DC (Screw connection)
	18 V DC ... 30 V DC (as an alternative or redundant, via backplane bus contact and system current supply)
Typical current consumption	< 100 mA (24 V DC)
Protective circuit	Reverse polarity protection

Connection data

Supply

Connection method	Plug-in screw terminal block (COMBICON), redundancy possible
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
Conductor cross section, flexible [AWG]	24 ... 14
Stripping length	7.00 mm

FL MC EF 1300 MM SC - FO converters



2902853
<https://www.phoenixcontact.com/us/products/2902853>

Tightening torque	0.56 Nm ... 0.79 Nm
-------------------	---------------------

Interfaces

Signal	Ethernet
Basic functions	Store-and-forward media converter

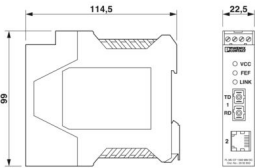
Data: optical FO

Transmit capacity, minimum	≥ -23.5 dBm ((50/125 μm) dynamic in link mode (average))
	≥ -20 dBm ((62,5/125 μm) dynamic in link mode (average))
Transmit capacity, maximum	≤ -14 dBm ((50/125 μm) dynamic in link mode (average))
	≤ -14 dBm ((62,5/125 μm) dynamic in link mode (average))
Transmission length incl. 3 dB system reserve	6.4 km (F-G 50/125 0.7 dB/km F 1000)
	2.8 km (F-G 50/125 1.6 dB/km F 800)
	10 km (F-G 62.5/125 0.7 dB/km F 1000)
	3 km (F-G 62.5/125 2.6 dB/km F 600)
Connection method	SC duplex
Wavelength	1300 nm
Minimum receiver sensitivity	-31 dBm (dynamic in link mode (average))
Maximum receiver sensitivity	-14 dBm (dynamic in link mode (average))
Transmission medium	Multi-mode fiberglass
	GI-HCS 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, link status, 10/100 Mbps
Auto-negotiation modes	Auto
Link through	Link fault pass through
MDI-/MDI-X switchover	Auto-MDI(X)

Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR

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 ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
	≤ 2000 m (in acc. with UL)
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
-------------	--------------

ATEX

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

ATEX, FO interface

Identification	⚡ II (2) D [Ex op is Db] IIIC
	⚡ II (2) G [Ex op is Gb] IIC
Certificate	PTB 06 ATEX 2042 U
Note	Please follow the special installation instructions in the documentation!

UL, USA/Canada

Identification	508 Listed
	Class I, Zone 2, AEx nA IIC T4
	Class I, Zone 2, Ex nA IIC T4 Gc X
	Class I, Div. 2, Groups A, B, C, D

KC approval for South Korea

Certificate	MSIP-REI-PCK-2902853
-------------	----------------------

Corrosive gas test

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

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

Shipbuilding

Identification	DNV GL
----------------	--------

DNV GL data

Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
-------------------------------	---

Electrostatic discharge

Standards/regulations	EN 61000-4-2
-----------------------	--------------

Electrostatic discharge

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

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
-----------------------	--------------

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
-----------------------	--------------

Fast transients (burst)

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

Surge current load (surge)

Standards/regulations	EN 61000-4-5
-----------------------	--------------

Surge current load (surge)

Input	± 0.5 kV (DC supply)
Signal	± 1 kV (Data line, asymmetrical)
Comments	Criterion B

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Conducted interference

Standards/regulations	EN 61000-4-6
-----------------------	--------------

Conducted interference

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

Emitted interference

Standards/regulations	EN 55032
Comments	Class A, industrial applications

Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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
Electrical isolation	according to IEEE 802.3

Mounting

Mounting type	DIN rail mounting
---------------	-------------------

FL MC EF 1300 MM SC - FO converters

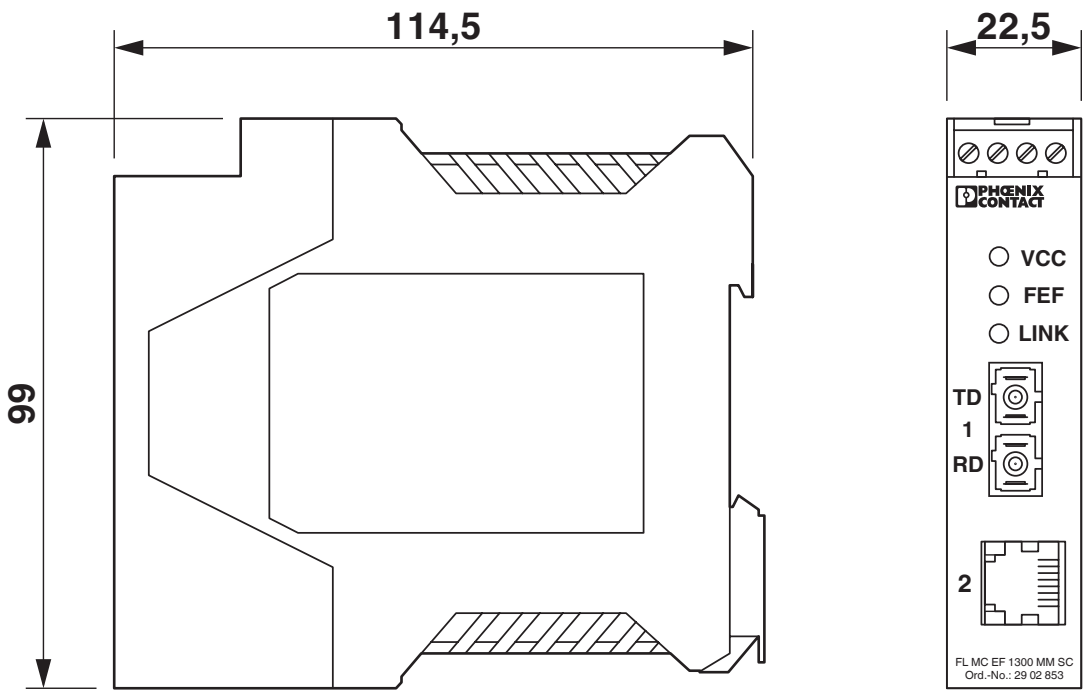
2902853

<https://www.phoenixcontact.com/us/products/2902853>



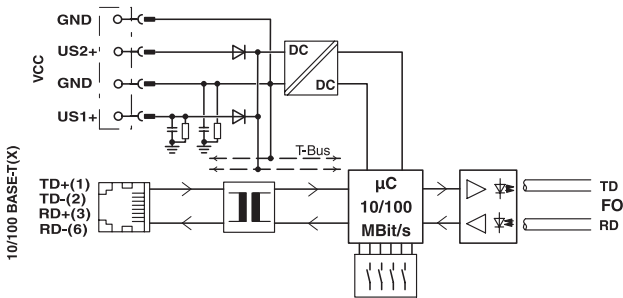
Drawings

Dimensional drawing



Slim design

Block diagram



Basic circuit diagram

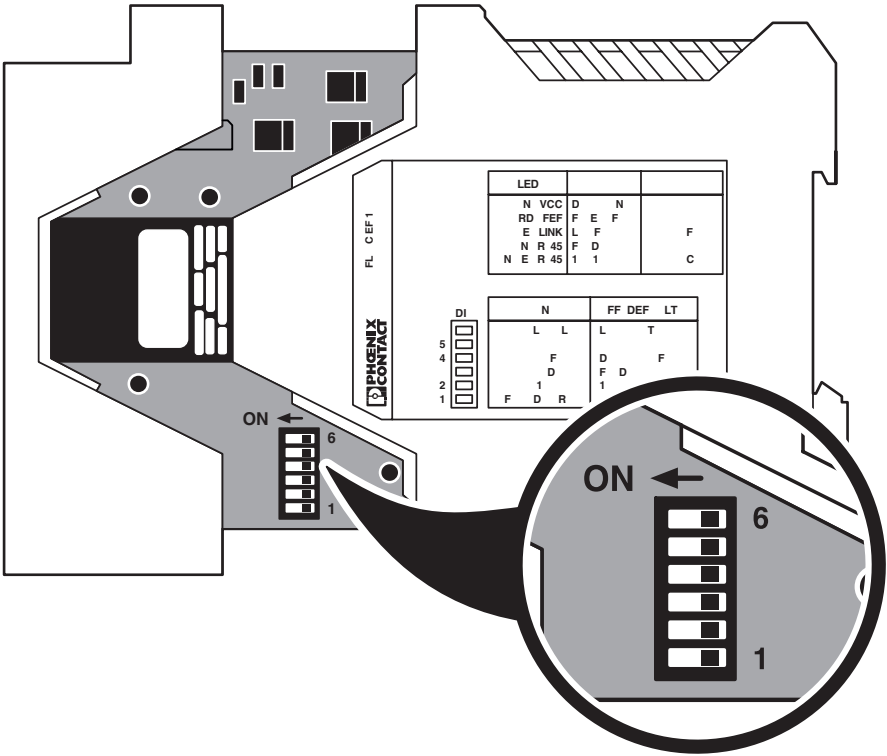
FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Schematic diagram



DIP switches

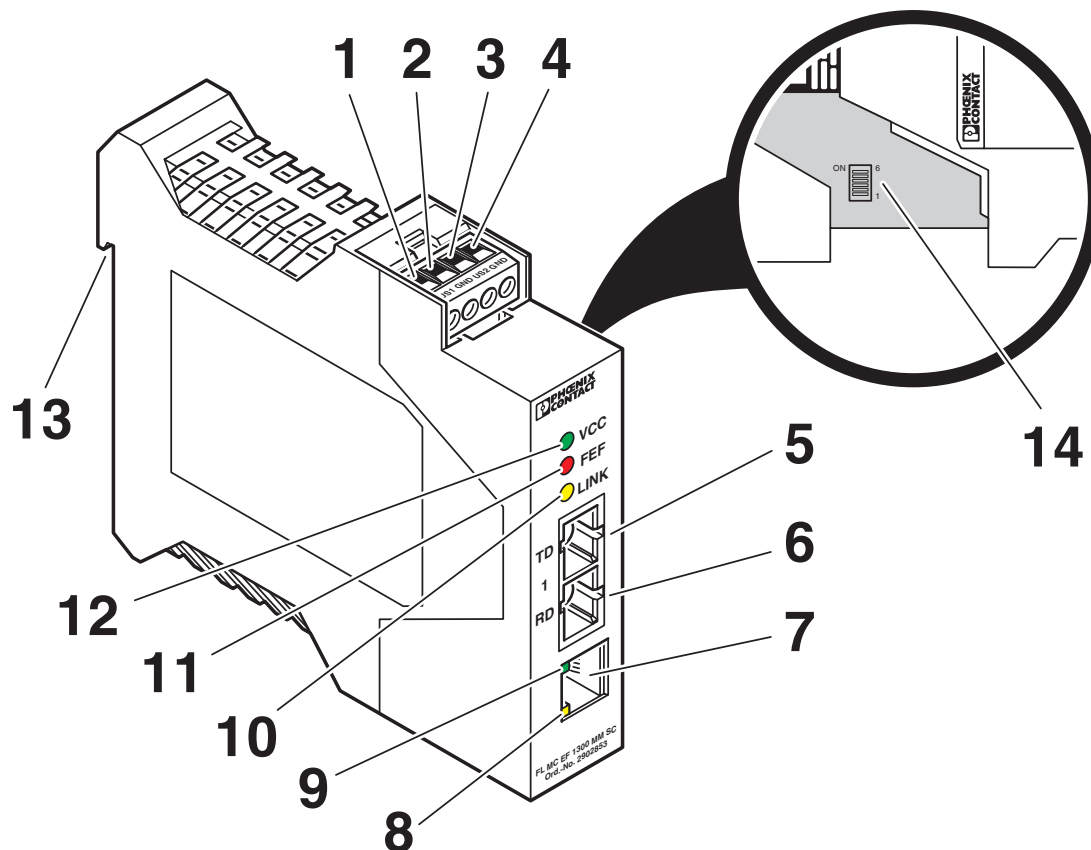
FL MC EF 1300 MM SC - FO converters

2902853

<https://www.phoenixcontact.com/us/products/2902853>



Schematic diagram



Function elements

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2902853>



EAC

Approval ID: RU D-DE.GB09.B.00312



KC

Approval ID: MSIP-REI-PCK-2902853



EAC

Approval ID: RU D-DE.GB09.B.00312



UL Listed

Approval ID: FILE E 238705



cUL Listed

Approval ID: FILE E 238705



KC

Approval ID: MSIP-REI-PCK-2902853



ATEX

Approval ID: PTB 06 ATEX 2042U



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



cUL Listed

Approval ID: FILE E 199827

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>



ATEX

Approval ID: PTB 06 ATEX 2042U

cULus Listed

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001467
----------	----------

UNSPSC

UNSPSC 21.0	43201500
-------------	----------

Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I
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.)	Lead(CAS: 7439-92-1)
SCIP	70fbbb78-61fb-46e5-96c4-7b683755c9b8

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

Accessories

FL PLUG RJ45 GR/2 - RJ45 connector

2744856

<https://www.phoenixcontact.com/us/products/2744856>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, connection cross section: AWG 26- 24, cable outlet: straight, color: gray, Ethernet

FL PLUG RJ45 GN/2 - RJ45 connector

2744571

<https://www.phoenixcontact.com/us/products/2744571>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

FL CAT5 HEAVY - Data cable

2744814

<https://www.phoenixcontact.com/us/products/2744814>



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm², solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

FL CAT5 FLEX - Installation cable

2744830

<https://www.phoenixcontact.com/us/products/2744830>



By the meter, Installation cable, Ethernet CAT5 (100 Mbps), shielded, PUR halogen-free, water blue RAL 5021, 4-wire (2x2xAWG26/7, SF/UTP), color single wire: white/orange-orange, white/green-green, cable length: Free entry (1.0 ... 1000.0 m)

FL MC EF 1300 MM SC - FO converters

2902853

<https://www.phoenixcontact.com/us/products/2902853>



FL CRIMPTOOL - Assembly tool

2744869

<https://www.phoenixcontact.com/us/products/2744869>

Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site



ME 22,5 TBUS 1,5/ 5-ST-3,81 GN - DIN rail bus connectors

2707437

<https://www.phoenixcontact.com/us/products/2707437>

DIN rail connector, color: green, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-22,5..., pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts



FL MC EF 1300 MM SC - FO converters

2902853

<https://www.phoenixcontact.com/us/products/2902853>



QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

<https://www.phoenixcontact.com/us/products/2904614>

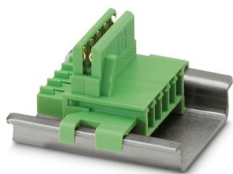


Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - DIN rail bus connectors

2709561

<https://www.phoenixcontact.com/us/products/2709561>



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

FL MC EF 1300 MM SC - FO converters

2902853

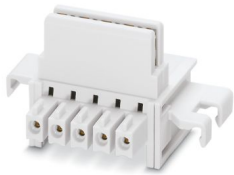
<https://www.phoenixcontact.com/us/products/2902853>



ME 17,5 TBUS 1,5/ 5-ST-3,81 KMGY - DIN rail bus connectors

2713645

<https://www.phoenixcontact.com/us/products/2713645>



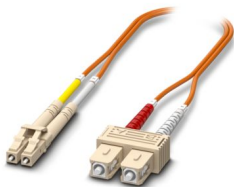
DIN rail connector, color: light grey, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-17,5..., pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

FOC-LC:PA-SC:PA-OM2:D01/1 - FO patch cable

1115607

<https://www.phoenixcontact.com/us/products/1115607>

Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 1 m



FL MC EF 1300 MM SC - FO converters



2902853

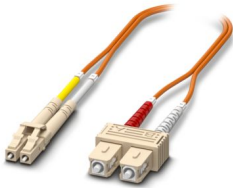
<https://www.phoenixcontact.com/us/products/2902853>

FOC-LC:PA-SC:PA-OM2:D01/2 - FO patch cable

1115605

<https://www.phoenixcontact.com/us/products/1115605>

Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 2 m

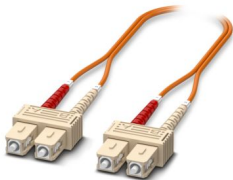


FOC-SC:PA-SC:PA-OM2:D01/1 - FO patch cable

1115536

<https://www.phoenixcontact.com/us/products/1115536>

Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 1 m



FL MC EF 1300 MM SC - FO converters



2902853

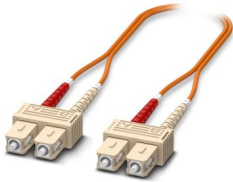
<https://www.phoenixcontact.com/us/products/2902853>

FOC-SC:PA-SC:PA-OM2:D01/2 - FO patch cable

1115535

<https://www.phoenixcontact.com/us/products/1115535>

Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 2 m

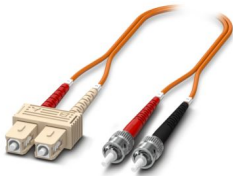


FOC-ST:PA-SC:PA-OM2:D01/1 - FO patch cable

1115574

<https://www.phoenixcontact.com/us/products/1115574>

Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 1 m



FL MC EF 1300 MM SC - FO converters



2902853

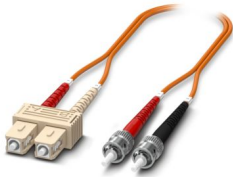
<https://www.phoenixcontact.com/us/products/2902853>

FOC-ST:PA-SC:PA-OM2:D01/2 - FO patch cable

1115573

<https://www.phoenixcontact.com/us/products/1115573>

Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 2 m

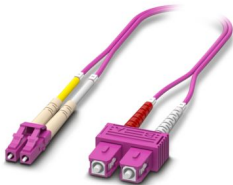


FOC-LC:PA-SC:PA-OM4:D01/1 - FO patch cable

1115601

<https://www.phoenixcontact.com/us/products/1115601>

Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 1 m



FL MC EF 1300 MM SC - FO converters



2902853

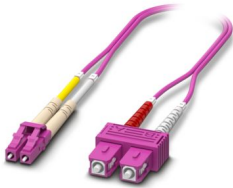
<https://www.phoenixcontact.com/us/products/2902853>

FOC-LC:PA-SC:PA-OM4:D01/2 - FO patch cable

1115600

<https://www.phoenixcontact.com/us/products/1115600>

Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 2 m

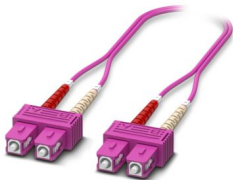


FOC-SC:PA-SC:PA-OM4:D01/1 - FO patch cable

1115424

<https://www.phoenixcontact.com/us/products/1115424>

Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 1 m



FL MC EF 1300 MM SC - FO converters



2902853

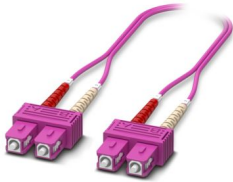
<https://www.phoenixcontact.com/us/products/2902853>

FOC-SC:PA-SC:PA-OM4:D01/2 - FO patch cable

1115423

<https://www.phoenixcontact.com/us/products/1115423>

Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 2 m



VS-08-RJ45-5-Q/IP20 - RJ45 connector

1656725

<https://www.phoenixcontact.com/us/products/1656725>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042, Ethernet

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

VS-08-RJ45-5-Q/IP20 BK - RJ45 connector

1658008

<https://www.phoenixcontact.com/us/products/1658008>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: black, Ethernet

FOC-GDM-RUGGED-1016/IP20/... - FO patch cable

2901558

<https://www.phoenixcontact.com/us/products/2901558>



Robust GOF installation cable for assembly (IP20 heads only) for installation in stationary systems and machines, aramid strain-relief elements, with individual elements made from FRNC material, halogen-free, ozone and UV resistant, with a polyurethane (PUR) outer sheath

FL MC EF 1300 MM SC - FO converters



2902853

<https://www.phoenixcontact.com/us/products/2902853>

FOC-GDO-1017/IP20/... - FO patch cable

2901559

<https://www.phoenixcontact.com/us/products/2901559>



Highly rugged GOF round cable (IP20 heads only) for assembly and for outdoor installation with integrated moisture barrier as well as rodent-proof scrim. Individual elements made from highly flexible FRNC material. The wire is ozone and UV resistant with a very rugged polyethylene outer sheath.

PSM-LWL-GDO- 50/125 - FO cable

2799432

<https://www.phoenixcontact.com/us/products/2799432>



Fiberglass cable, duplex 50/125 μm , by the meter, without connector, for outdoor installation

FL MC EF 1300 MM SC - FO converters

2902853

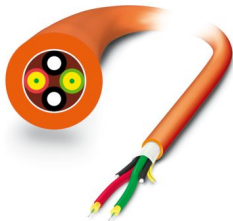
<https://www.phoenixcontact.com/us/products/2902853>



PSM-LWL-GDM-RUGGED- 50/125 - FO cable

2799322

<https://www.phoenixcontact.com/us/products/2799322>



Fiber glass cable, duplex 50 µm/125 µm, by the meter, without male connector, for installation in stationary systems and machines

FL CAT5 PATCH 0,5 - Patch cable

2832263

<https://www.phoenixcontact.com/us/products/2832263>



Patch cable, CAT5, assembled, 0.5 m

FL MC EF 1300 MM SC - FO converters

2902853

<https://www.phoenixcontact.com/us/products/2902853>



FL CAT5 PATCH 1,0 - Patch cable

2832276

<https://www.phoenixcontact.com/us/products/2832276>



Patch cable, CAT5, assembled, 1 m

FL CAT5 PATCH 2,0 - Patch cable

2832289

<https://www.phoenixcontact.com/us/products/2832289>



Patch cable, CAT5, assembled, 2 m

FL MC EF 1300 MM SC - FO converters

2902853

<https://www.phoenixcontact.com/us/products/2902853>



FL CAT5 PATCH 3,0 - Patch cable

2832292

<https://www.phoenixcontact.com/us/products/2832292>

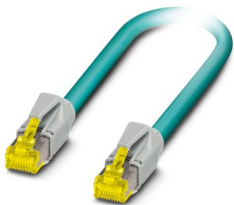


Patch cable, CAT5, assembled, 3 m

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_A, cable outlet: straight, Ethernet

FL MC EF 1300 MM SC - FO converters



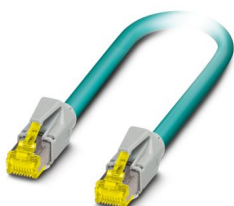
2902853

<https://www.phoenixcontact.com/us/products/2902853>

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

1408360

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

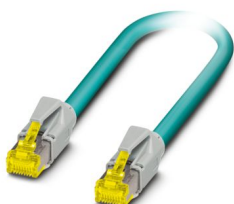


Patch cable, CAT6_A, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

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

1408365

<https://www.phoenixcontact.com/us/products/1408365>



Patch cable, CAT6_A, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

Phoenix Contact 2024 © - all rights reserved
<https://www.phoenixcontact.com>

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