FL MC EF 660 SCRJ - FO converters

2702944

https://www.phoenixcontact.com/us/products/2702944

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FO converter, for converting 100Base-T to polymer and PCF fiber (660 nm), SC-RJ FO connection (PROFINET standard), can be mounted on a DIN rail, 24 V DC supply

Product description

Optical transmission with FO technology provides superior immunity to interference at maximum transmission ranges without restricting the transmission bandwidth. You can therefore replace wear-sensitive and maintenance-intensive connections and reduce downtimes in your systems.

Your advantages

- Link fault pass through (LFPT) function for easy connection monitoring
- Very low delay times
- Mounting on a DIN rail
- Backplane bus contact, enabling alternative or redundant 24 V power supply

Commercial data

Item number	2702944
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN06
Product key	DNC311
Catalog page	Page 351 (C-6-2019)
GTIN	4055626431260
Weight per piece (including packing)	172.7 g
Weight per piece (excluding packing)	172.7 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Product properties

Product type	Media converter
MTTF	929 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	461 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	204 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

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 ... 32 V DC (via pluggable COMBICON screw terminal block)
	18 V DC ... 32 V DC (as an alternative or redundant, via backplane bus contact and system current supply)
Typical current consumption	≤ 85 mA (24 V DC)
Max. current consumption	100 mA (24 V DC)
Protective circuit	Reverse polarity protection

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

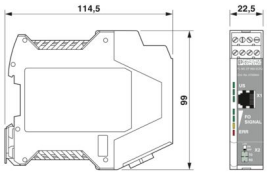
Transmit capacity, minimum	min. -8 dBm (980/1000 µm, static)

	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	50 m (Polymer fiber with F-P 980/1000 230 dB/km)
	100 m (PCF fiber with F-K 200/230 8 dB/km)
Connection method	SC-RJ
Wavelength	660 nm
Minimum receiver sensitivity	-23 dBm (980/1000 µm, static)
	-26.8 dBm (200/230 µm, static)
Transmission medium	Polymer fiber
	PCF fiber

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

Transmission speed	100 Mbps
Connection method	RJ45 jack, shielded
No. of channels	1
Transmission length	100 m (shielded twisted pair)
Transmission medium	Copper
Link through	Link fault pass through

Dimensions

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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °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

Corrosive gas test

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

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conducted noise emission	EN 61000-6-3 Class B, domain of use: residential and small commercial

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	± 2.2 kV (1 minute)
Signal	± 2.2 kV (1 minute)
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Input	± 0.5 kV (Supply)
Signal	± 1 kV (Shielded cable)
Comments	Criterion B

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 61000-6-4
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

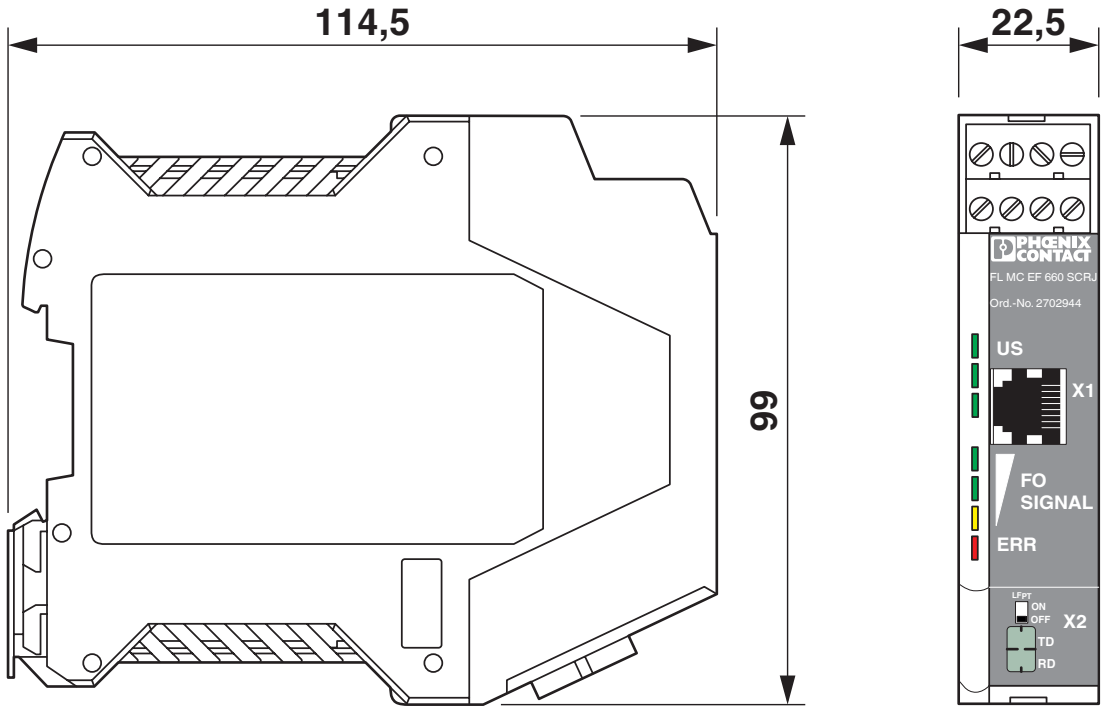
Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0

Mounting

Mounting type	DIN rail mounting

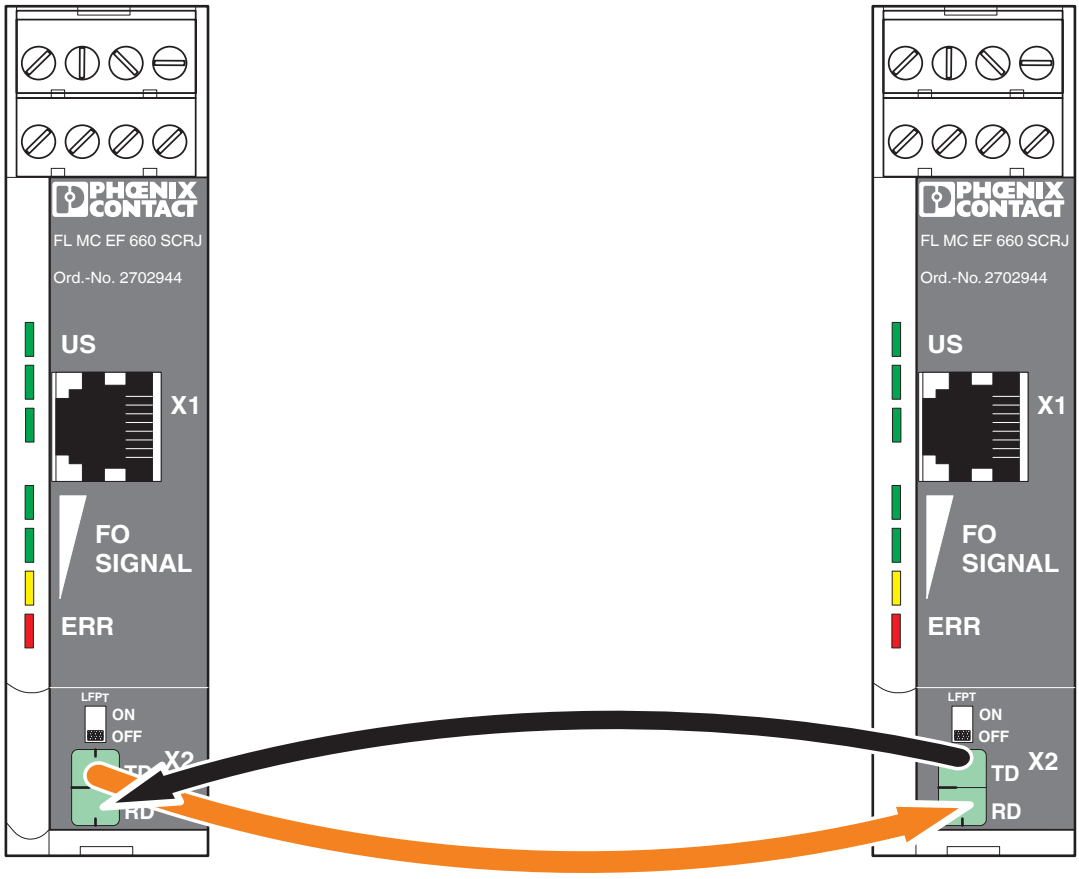
Drawings

Dimensional drawing



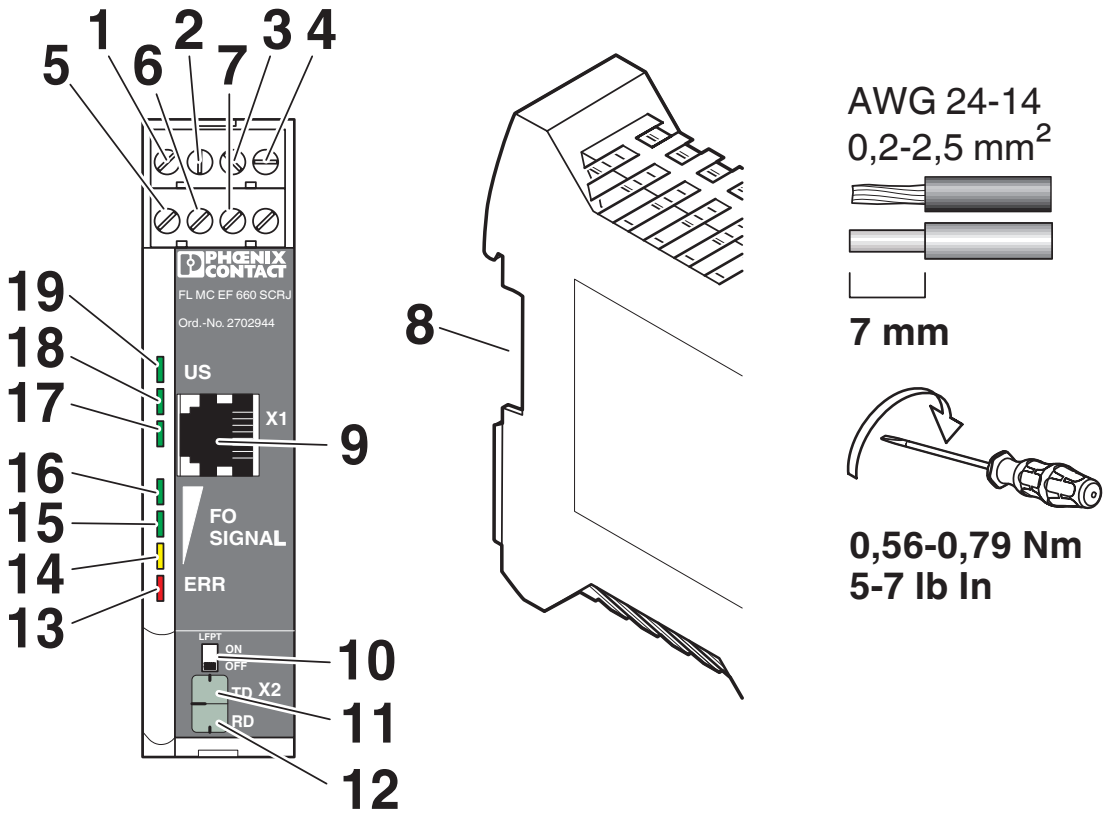
Slim design

Schematic diagram



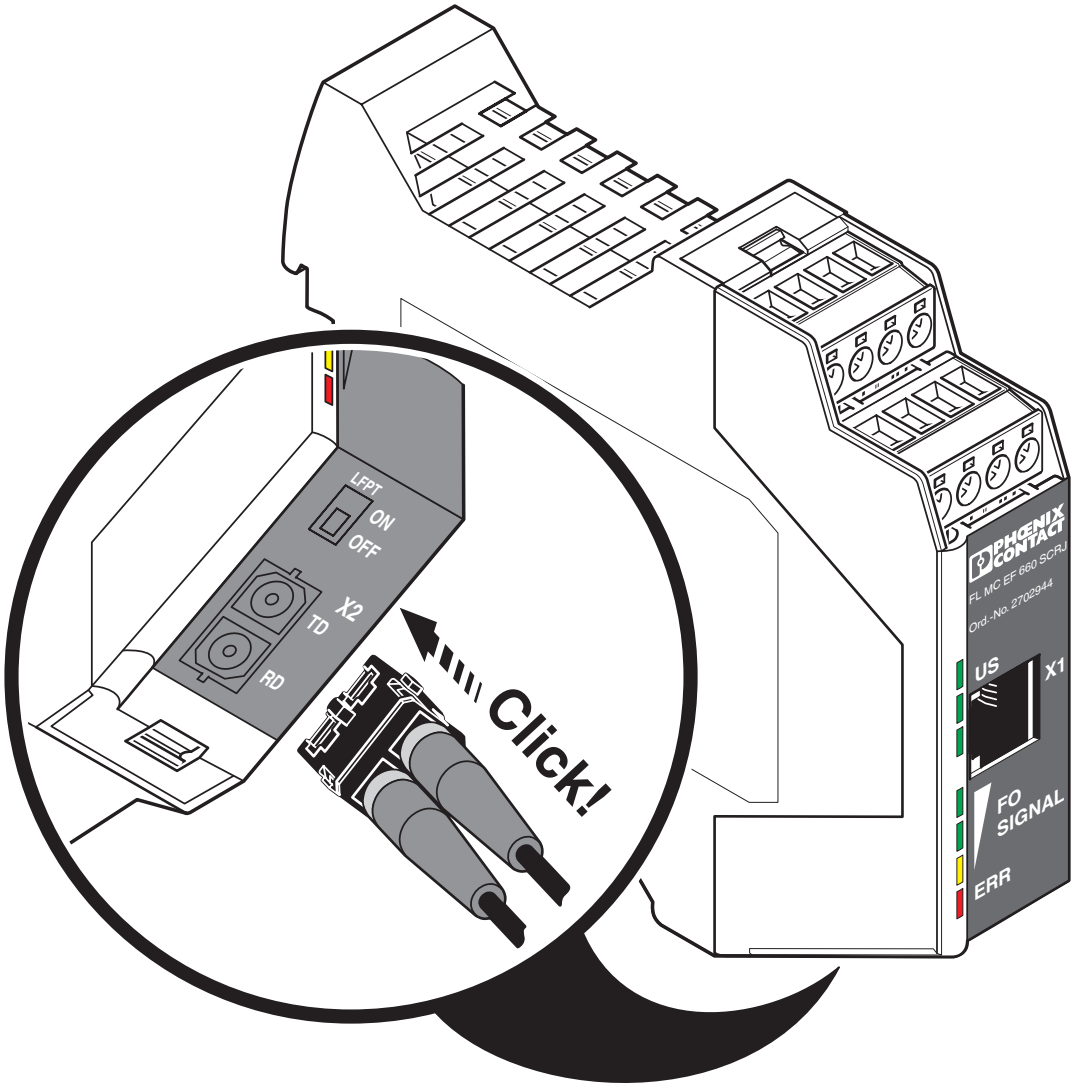
Signal direction for the fiber connection

Schematic diagram



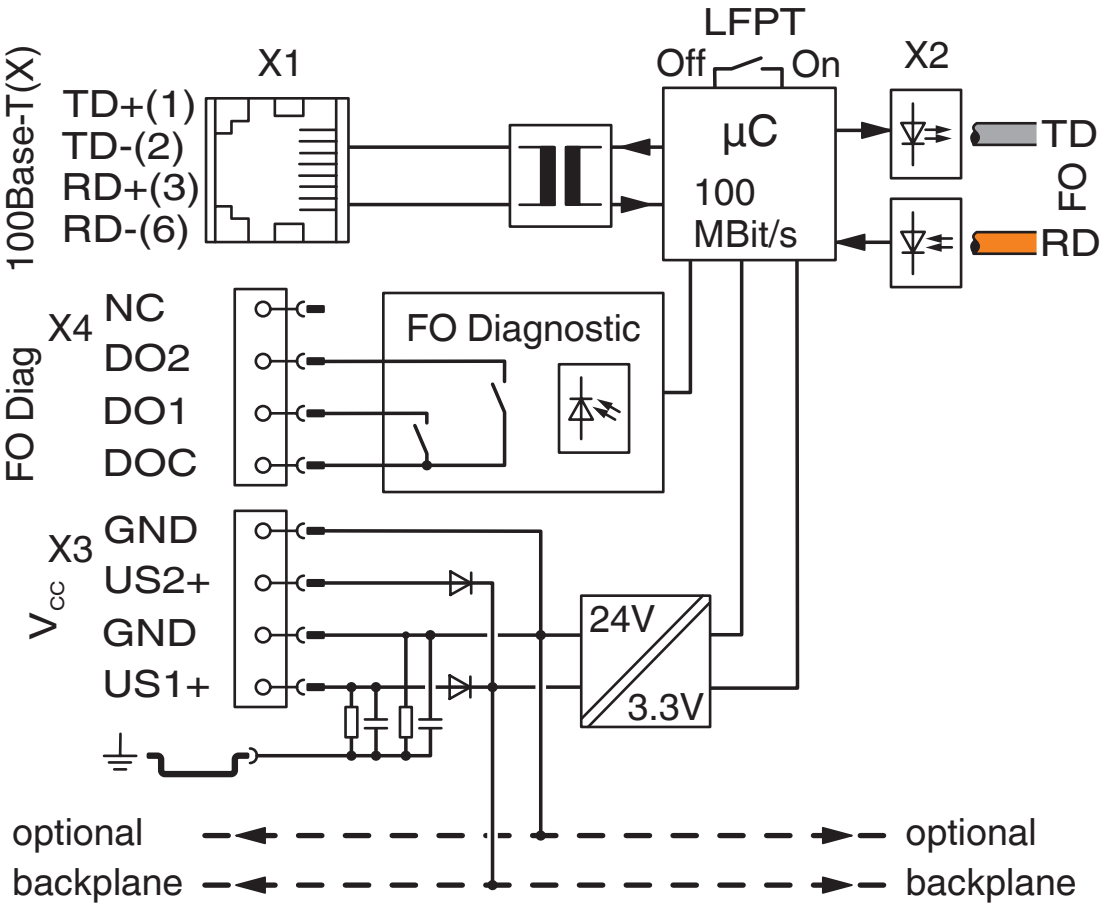
Function elements

Schematic diagram

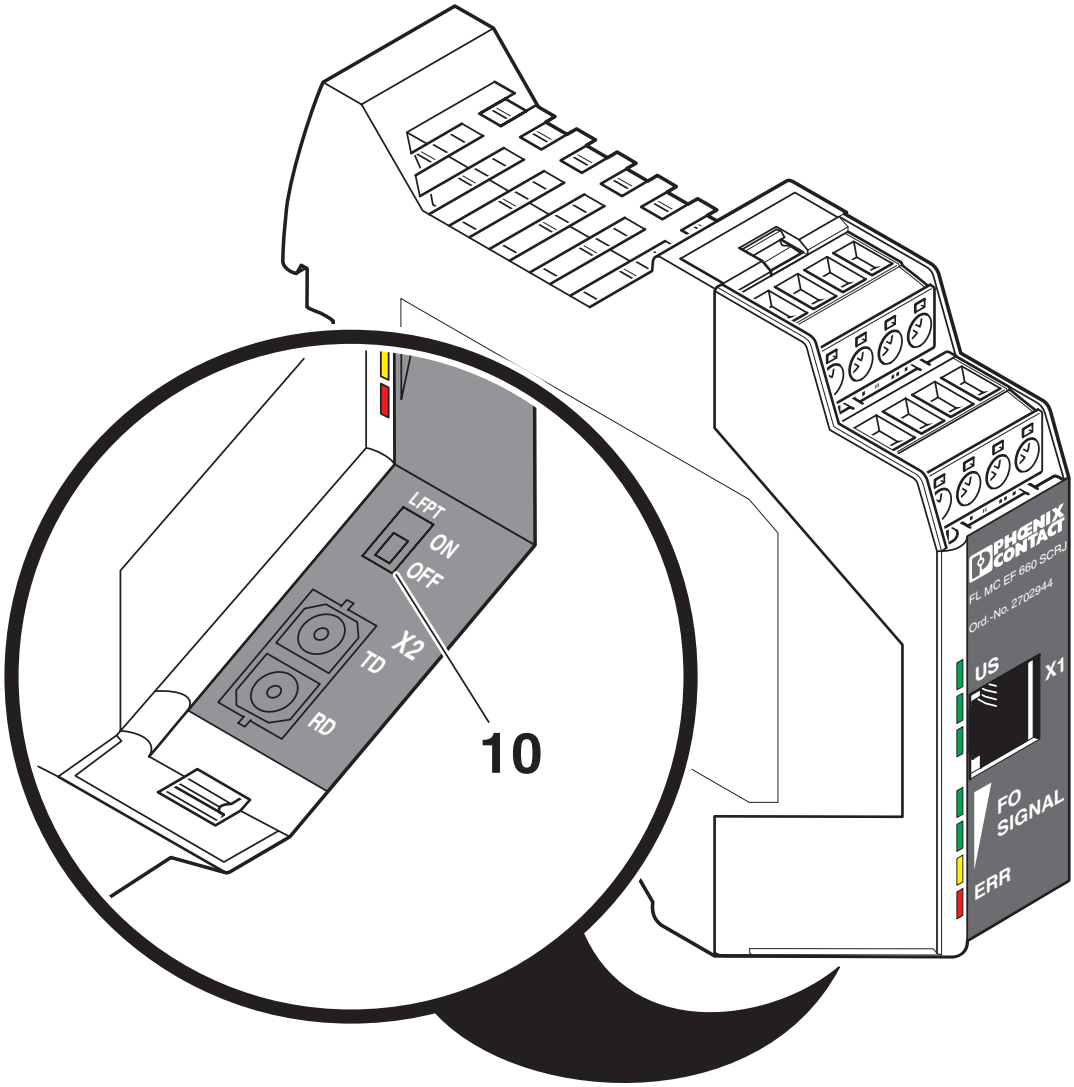


Connect the SC-RJ plug

Block diagram



Schematic diagram



Switch to activate LFPT

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	e5b45f75-6580-4bc8-a0f2-6e9cb96682c4

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 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 mm^2, 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 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

PSM-SET-SCRJ-DUP/2-HCS - FO connectors

2313070

https://www.phoenixcontact.com/us/products/2313070



FO connectors, degree of protection: IP20, number of positions: 2, MM, material: Plastic, connection method: Cable connection, cable outlet: straight, color: black

PSM-SET-SCRJ-DUP/2-POF - FO connectors

2708656

https://www.phoenixcontact.com/us/products/2708656



FO connectors, degree of protection: IP20, number of positions: 2, MM, material: Metal, connection method: Push-pull, cable outlet: straight

PSM-HCS-KONFTOOL/SC-RJ - Assembly tool

2708876

https://www.phoenixcontact.com/us/products/2708876

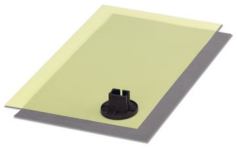


HCS assembly kit for SC-RJ quick mounting connectors, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, microscope, fiber cleaving tool for standard HCS and HCS GI fibers, two SC-RJ connectors for standard HCS fiber, and documentation

VS-SCRJ-POF-POLISH - FO accessories

1656673

https://www.phoenixcontact.com/us/products/1656673

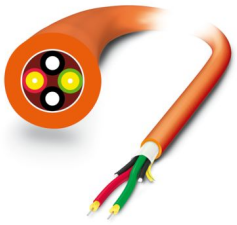


Refilling set for VS-SC-RJ-POF-KONFTOOL-POLISH, consisting of two polishing discs and a polisher

PSM-LWL-HCS-RUGGED-200/230 - FO cable

2799885

https://www.phoenixcontact.com/us/products/2799885

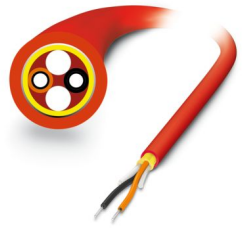


PCF cable, duplex 200 µm/230 µm, by the meter without male connector, for installation in stationary systems and machines

PSM-LWL-RUGGED-980/1000 - FO cable

2744322

https://www.phoenixcontact.com/us/products/2744322



Polymer fiber cable, duplex 980µm/1000µm, heavy-weight version for installation in stationary systems and machines, by the meter without male connector

PSM-LWL-HCSO-200/230 - FO cable

2799445

https://www.phoenixcontact.com/us/products/2799445



PCF cable, duplex 200/230 µm, by the meter, without connector, for outdoor installation

FL FOC PN-B-980/1000 - FO cable

2313397

https://www.phoenixcontact.com/us/products/2313397



PROFINET polymer fiber cable, duplex 980 µm/1000 µm, heavy-weight design, for installation in stationary systems and machines, by the meter, without male connector

FL FOC PN-C-FLEX-980/1000 - FO cable

2313407

https://www.phoenixcontact.com/us/products/2313407

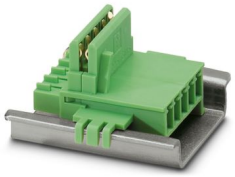


PROFINET polymer fiber cable, duplex, 980/1000 µm, heavy-weight highly flexible design, for flexible cable conduit applications, by the meter, without connector

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

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

2904614

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

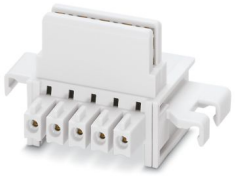


Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

ME 17,5 TBUS 1,5/ 5-ST-3,81 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

PSM-POF-KONFTOOL - Assembly tool

2744131

https://www.phoenixcontact.com/us/products/2744131



Polymer fiber DIY case, consisting of: Stripping knife, stripping pliers, polishing wheels for F-SMA and SC-RJ quick mounting connectors, polishing pad and emery paper

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

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

VS-08-RJ45-10G/Q - RJ45 connector

1419001

https://www.phoenixcontact.com/us/products/1419001



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 10 Gbps, $CAT6_A$, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: straight, color: black, Ethernet

FL CAT5 PATCH 0,5 - Patch cable

2832263

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



Patch cable, CAT5, assembled, 0.5 m

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

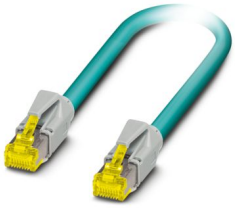


Patch cable, CAT5, assembled, 2 m

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

1411854

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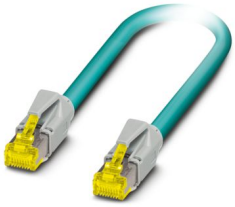


Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, $CAT6_A$, cable outlet: straight, Ethernet

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

1408360

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

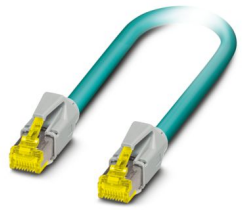


Patch cable, $CAT6_A$, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

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

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