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
Connection method	Plug-in screw terminal block (COMBICON), redundancy possible

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

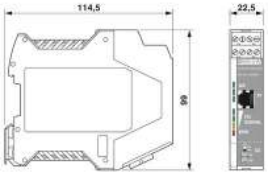
Data: optical FO

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

Material	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

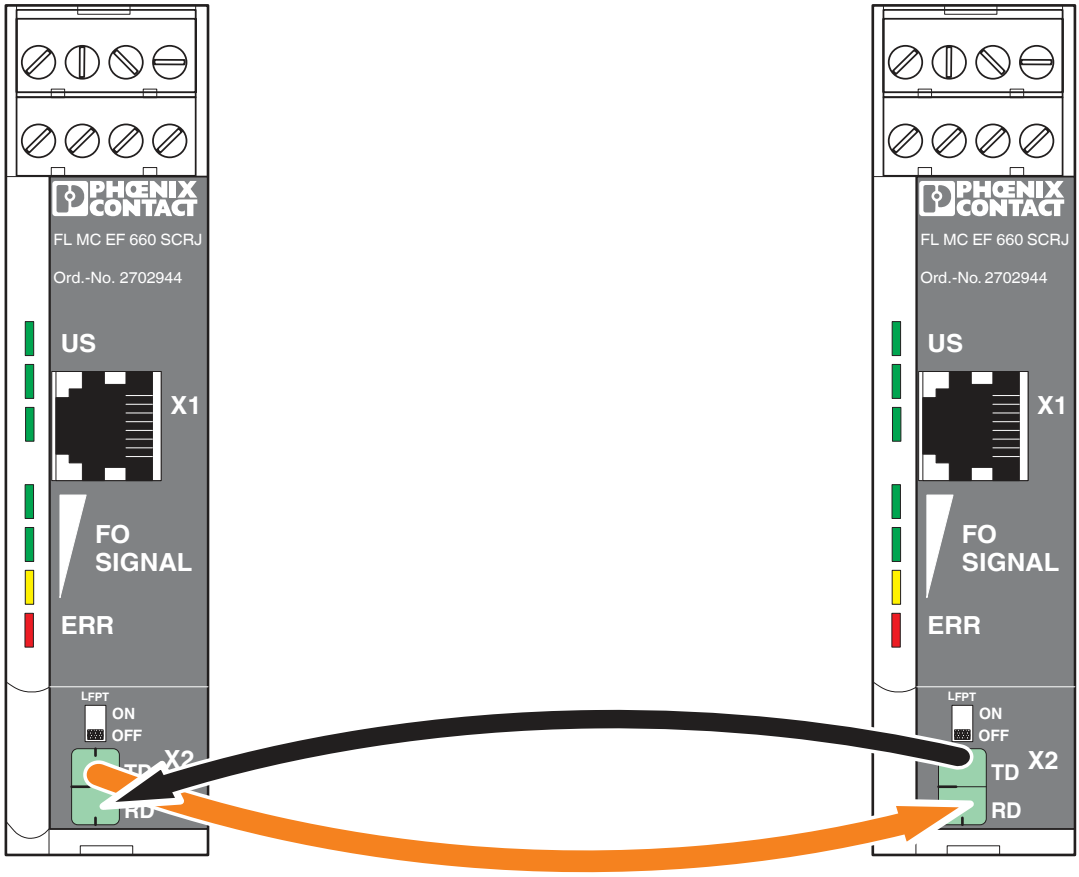
Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0

Mounting

Mounting type	DIN rail mounting

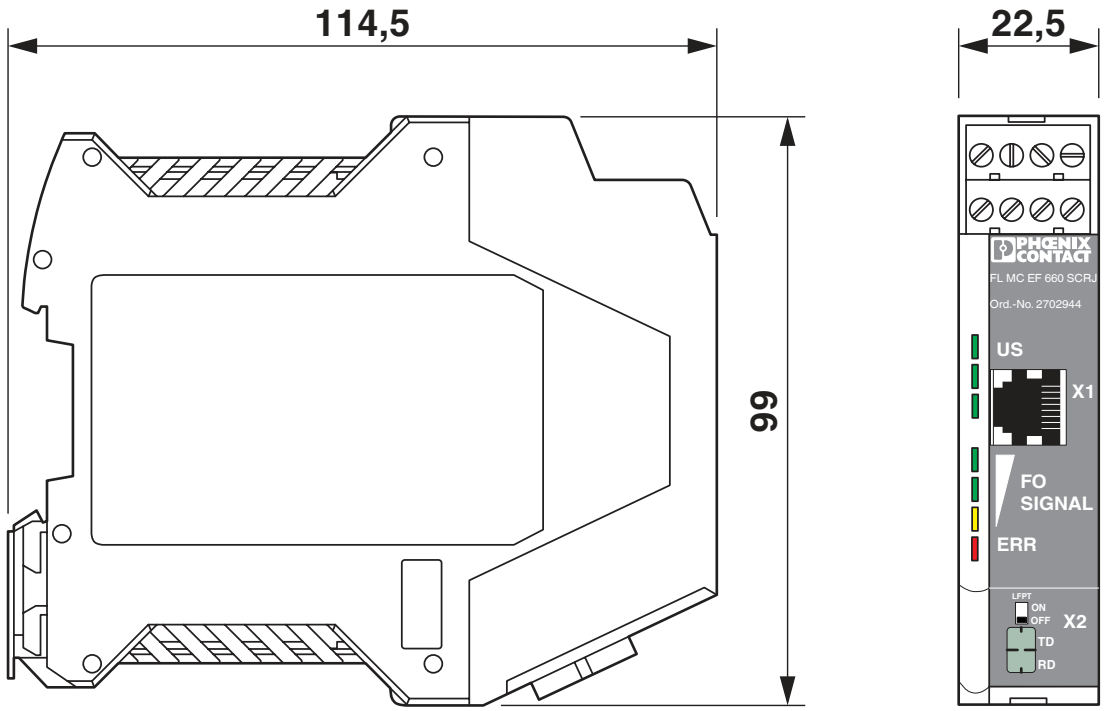
Drawings

Schematic diagram



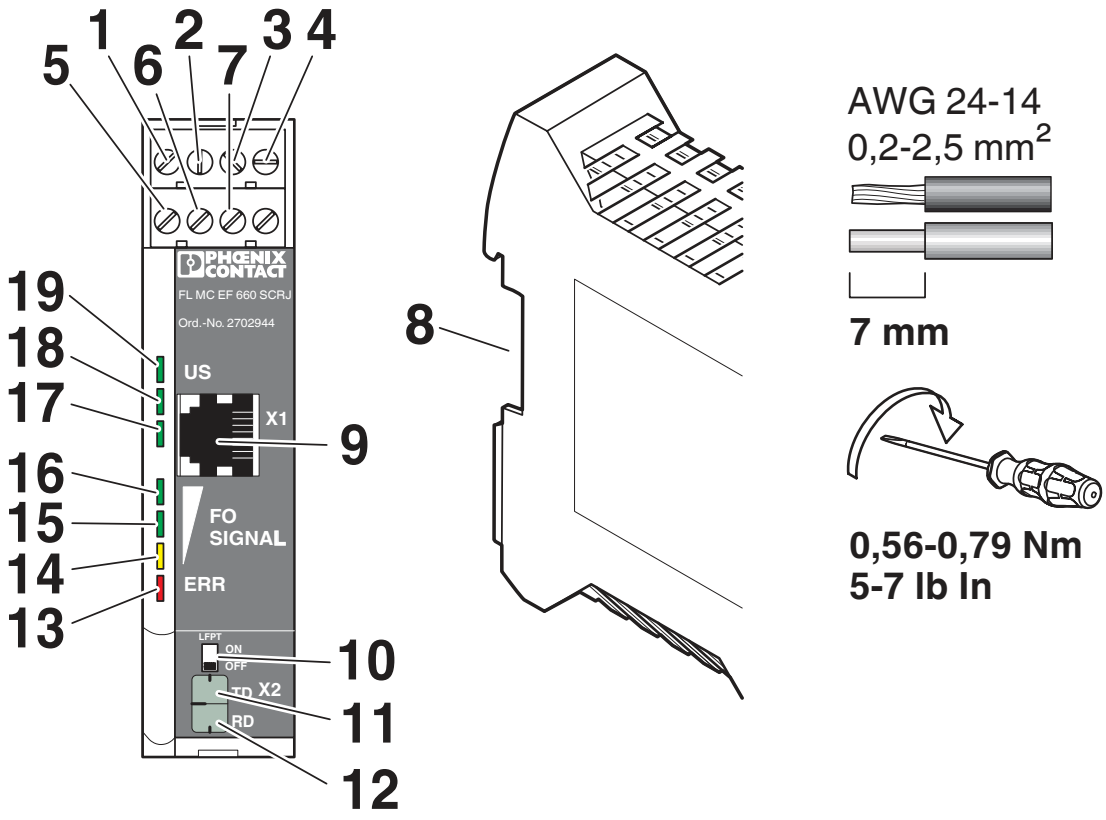
Signal direction for the fiber connection

Dimensional drawing



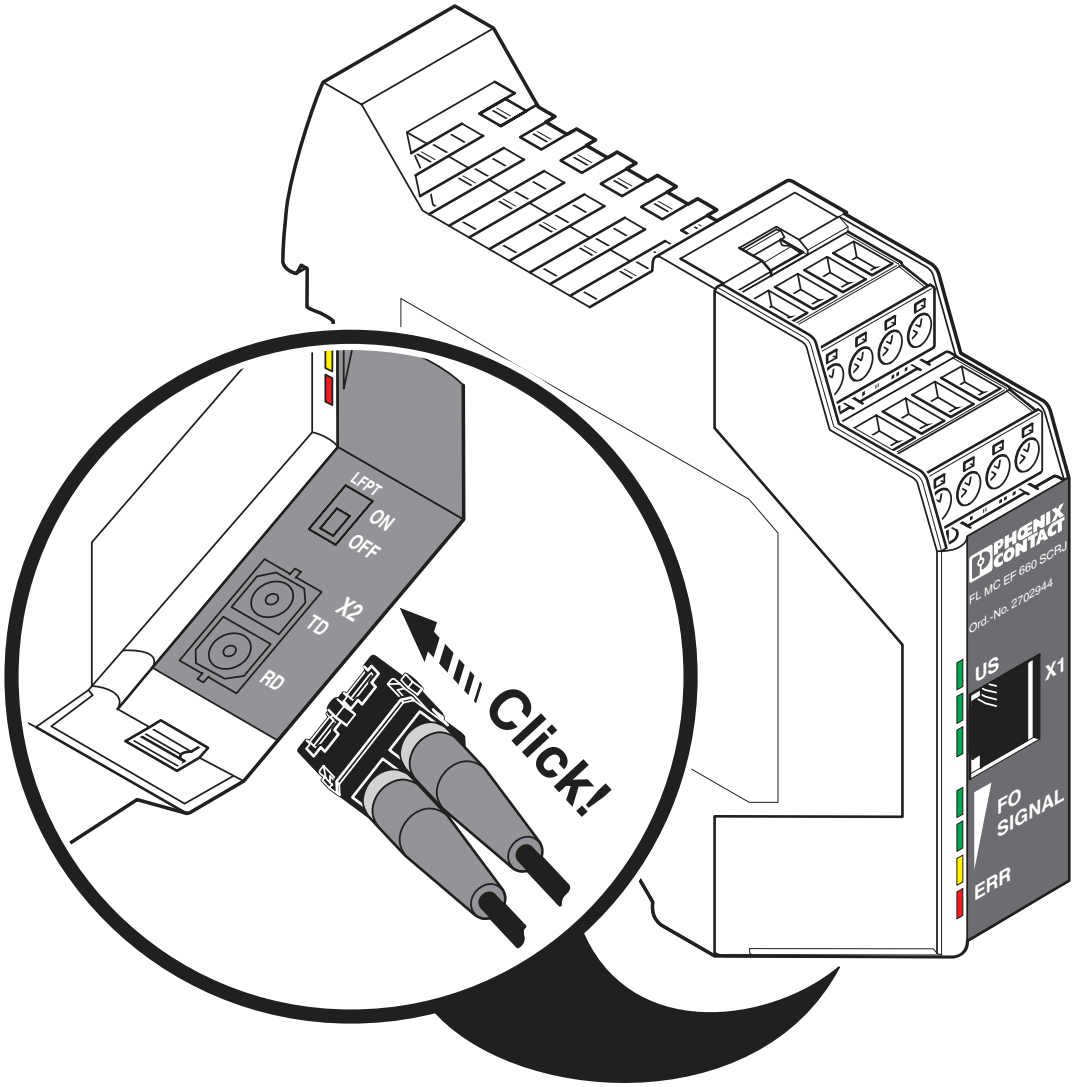
Slim design

Schematic diagram



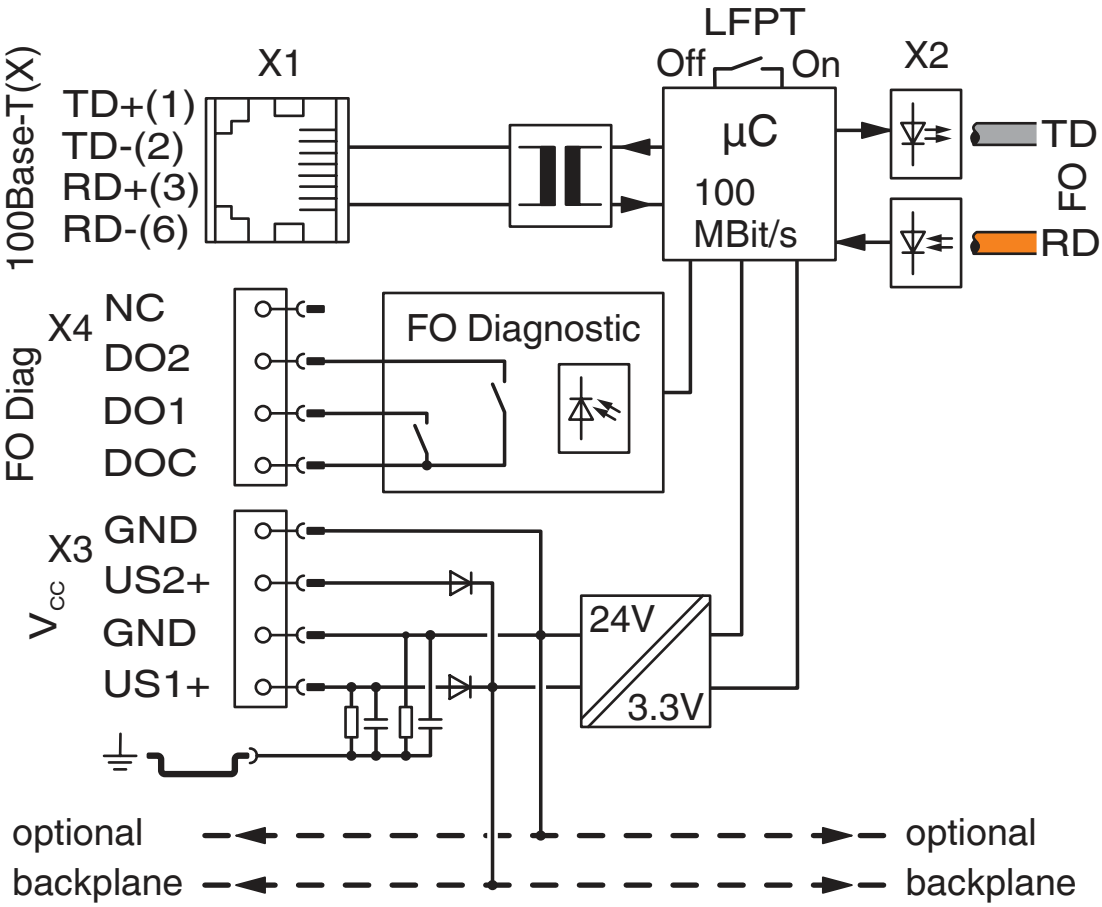
Function elements

Schematic diagram

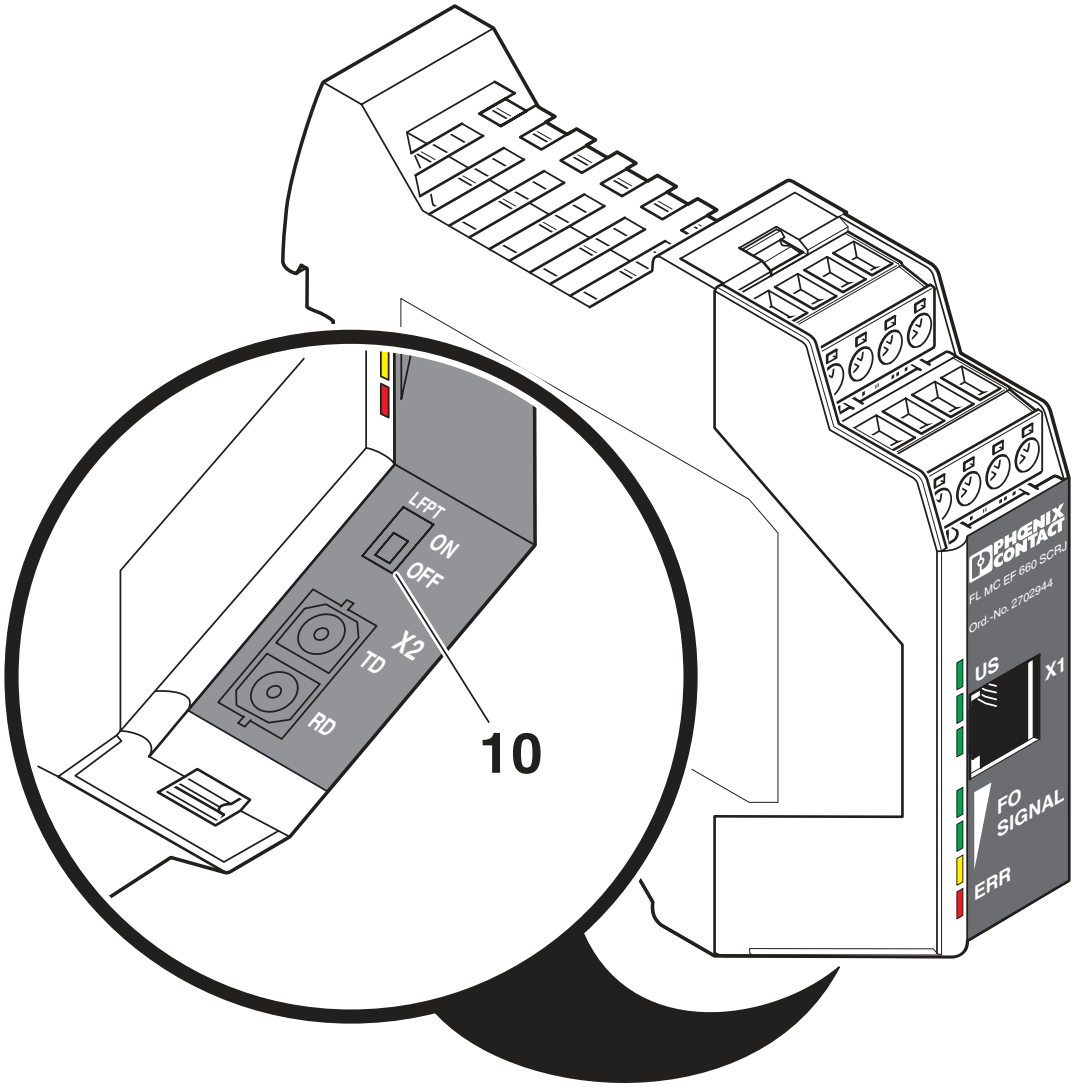


Connect the SC-RJ plug

Block diagram



Schematic diagram



Switch to activate LFPT

Classifications

ECLASS

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

ETIM

ETIM 8.0	EC001467

UNSPSC

UNSPSC 21.0	43201500

Environmental product compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

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: green, 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

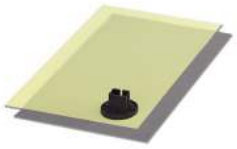
https://www.phoenixcontact.com/us/products/2708876

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-KDHEAVY-980/1000 - FO cable

2744319

https://www.phoenixcontact.com/us/products/2744319

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

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-RUGGED-FLEX-980/1000 - FO cable

2744335

https://www.phoenixcontact.com/us/products/2744335

Polymer fiber cable, duplex 980/1000 µm, heavy-weight, highly flexible version for flexible conduit applications, by the meter, without 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, 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, 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

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

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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