

## FO converters - FL MC EF WDM-SET SC - 2902660

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FO converter set, consisting of type A devices and type B devices, for full duplex transmission from 10/100Base-T(X) to individual simplex fiberglass with WDM (wavelength division multiplex) technology. SC simplex fiber optic connection (1550/1310 nm).

### Product Description

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

### Your advantages

- ✓ Device set for operation on one fiber
- ✓ Full duplex communication with only one fiber
- ✓ Transmission ranges up to 38 km
- ✓ Auto negotiation
- ✓ Auto MDI/MDI-X switch-over
- ✓ Link fault pass through (LFPT) and far end fault (FEF) functions for easy connection monitoring
- ✓ Data rates 10/100 Mbps
- ✓ Shipbuilding approval in accordance with DNV GL



### Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356670616
Weight per Piece (excluding packing)	434.200 g
Custom tariff number	85176200
Country of origin	Germany

### Technical data

#### Dimensions

Caption	Slim design
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#### Ambient conditions

# FO converters - FL MC EF WDM-SET SC - 2902660

## Technical data

### Ambient conditions

Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
	≤ 2000 m (With UL approval)

### General

Net weight	434.2 g
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### Interfaces

Transmission medium	Copper
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### Optical interface FO

Wavelength	1550 nm
	1310 nm
Transmission length incl. 3 dB system reserve	38 km (With F-E 9/125 0.36 dB/km)
	34 km (With F-E 9/125 0.4 dB/km)
	28 km (With F-E 9/125 0.5 dB/km)
	21 km (with F-G 62,5/125 0,7 dB/km F 1000)
	5.5 km (with F-G 62.5/125 2.6 dB/km F 600)
	21 km (with F-G 50/125 0,7 dB/km F 1200)
	9 km (with F-G 50/125 1,6 dB/km F 800)
Transmission medium	Multi-mode fiberglass
	Single-mode fiberglass
Connection method	SC simplex

### Conformance/approvals

Designation	EAC
Identification	EAC
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A
Designation	Shipbuilding
Identification	DNV GL
Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

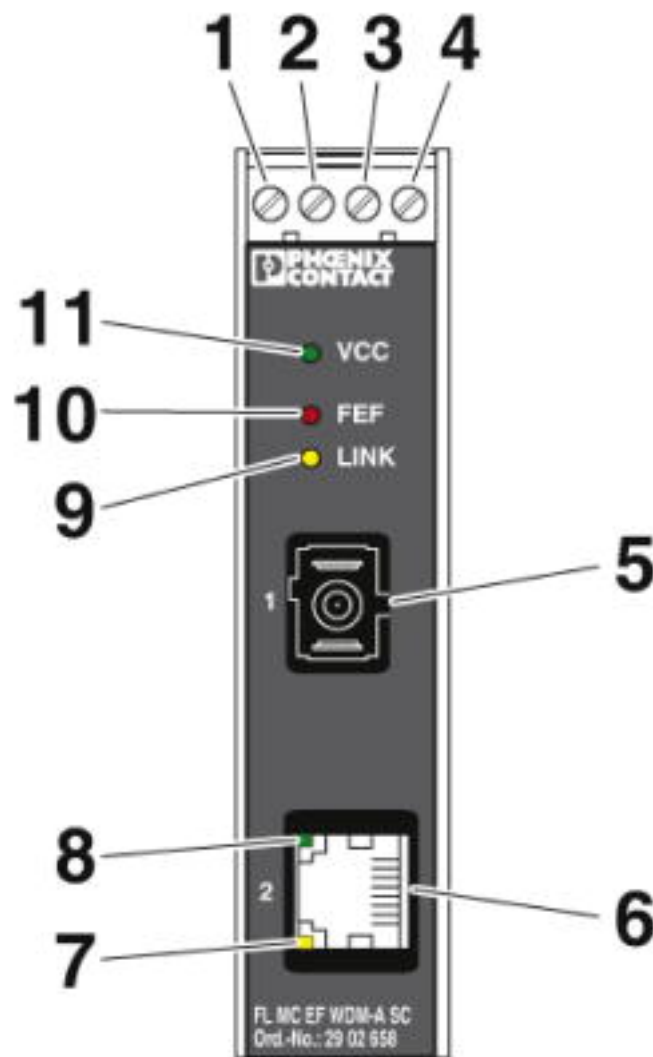
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

# FO converters - FL MC EF WDM-SET SC - 2902660

## Drawings

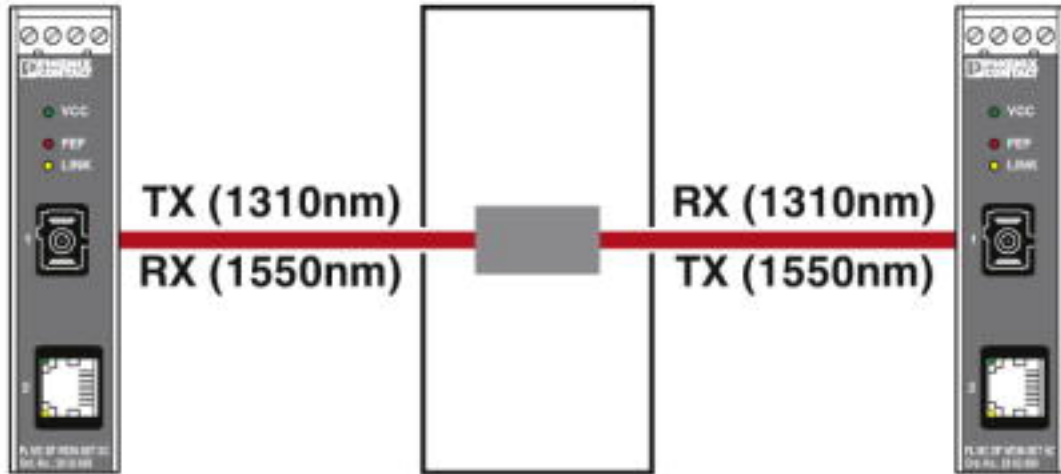
Schematic diagram



Front view

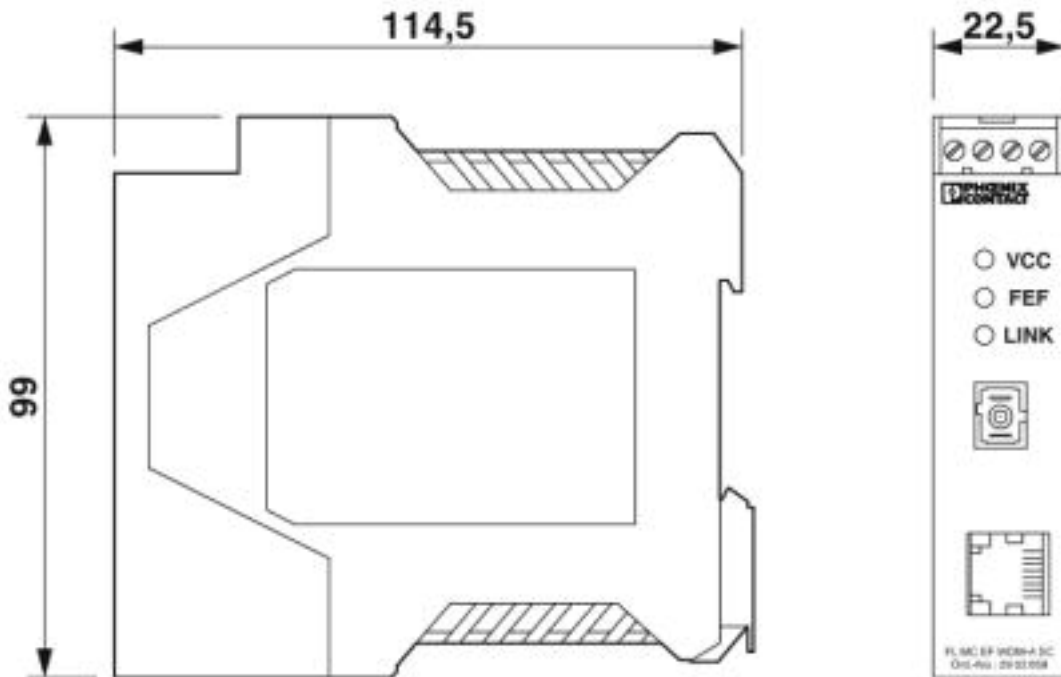
# FO converters - FL MC EF WDM-SET SC - 2902660

Application drawing



Slip ring communication

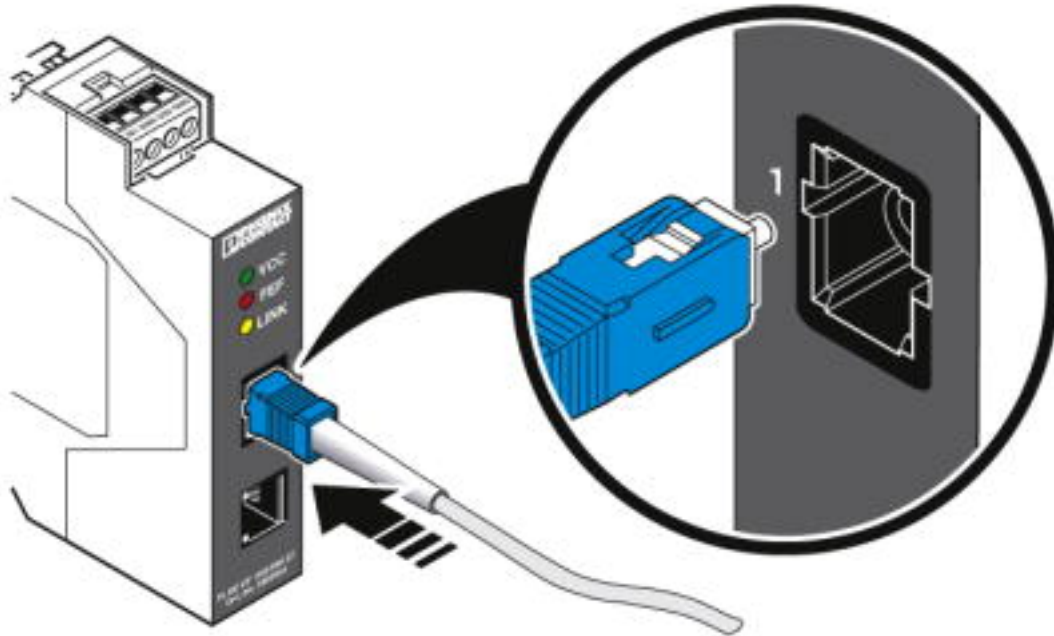
Dimensional drawing



Slim design

## FO converters - FL MC EF WDM-SET SC - 2902660

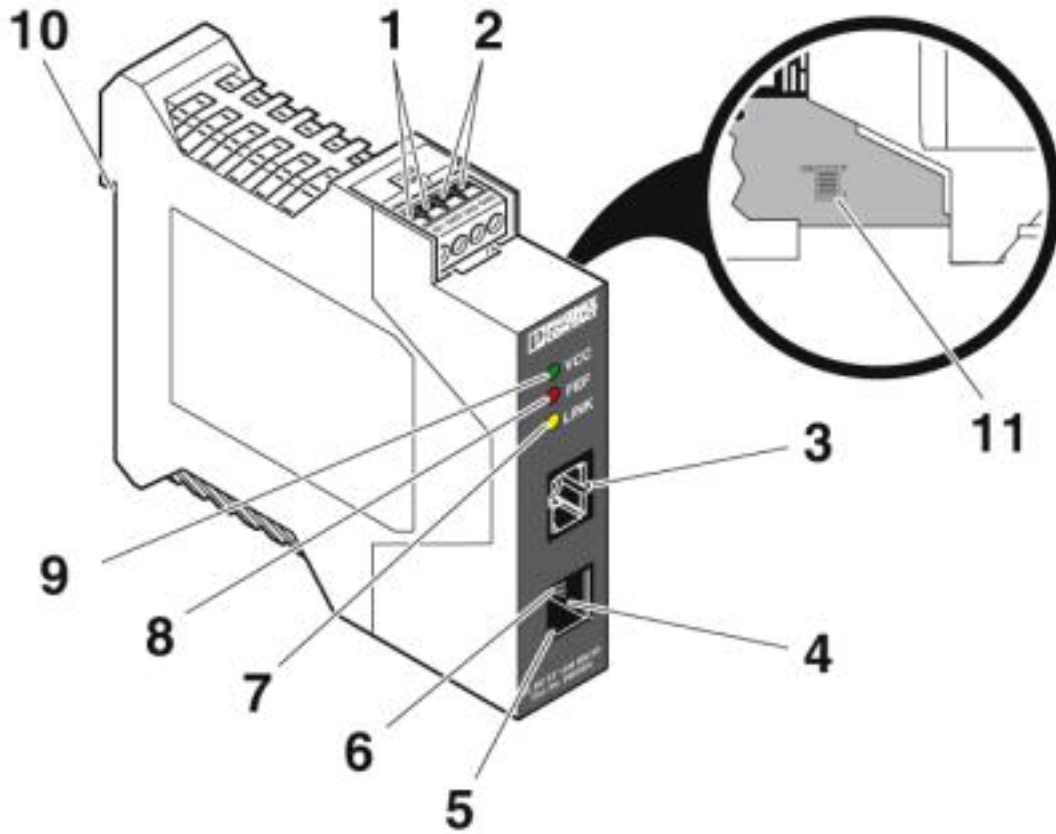
Schematic diagram



Connect SC simplex plug

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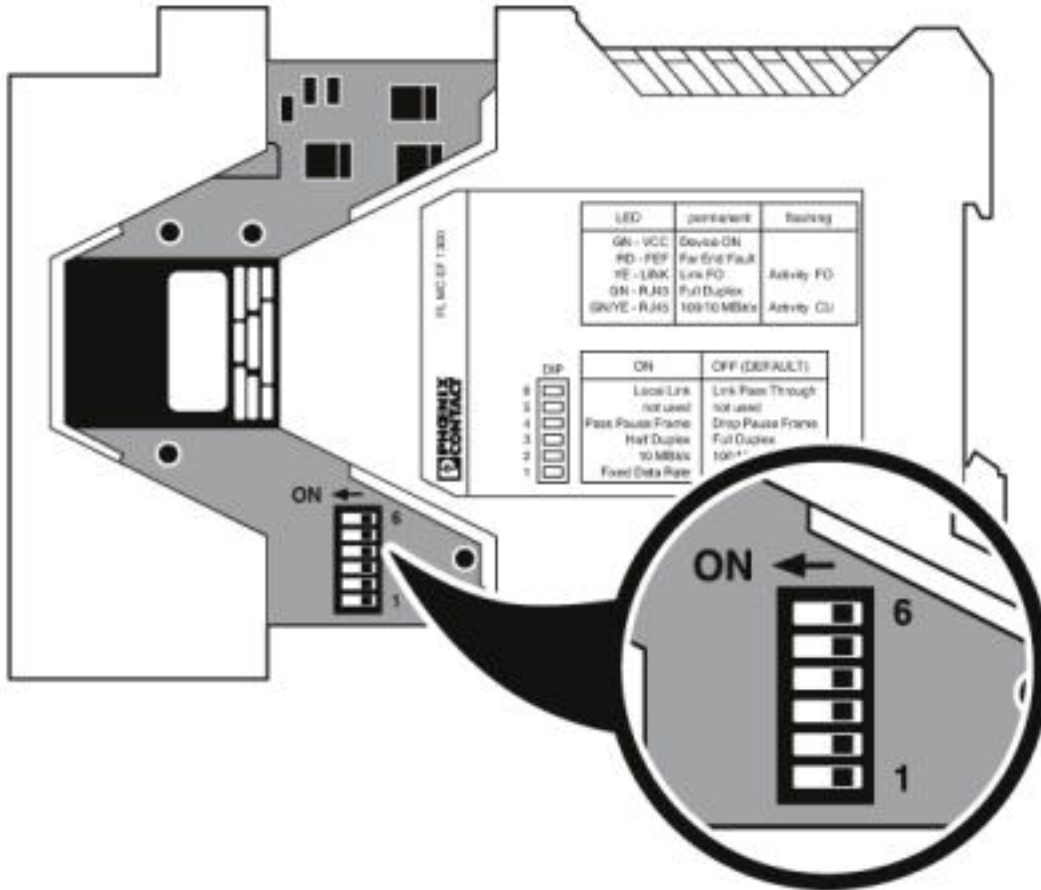
Schematic diagram



Function elements

# FO converters - FL MC EF WDM-SET SC - 2902660

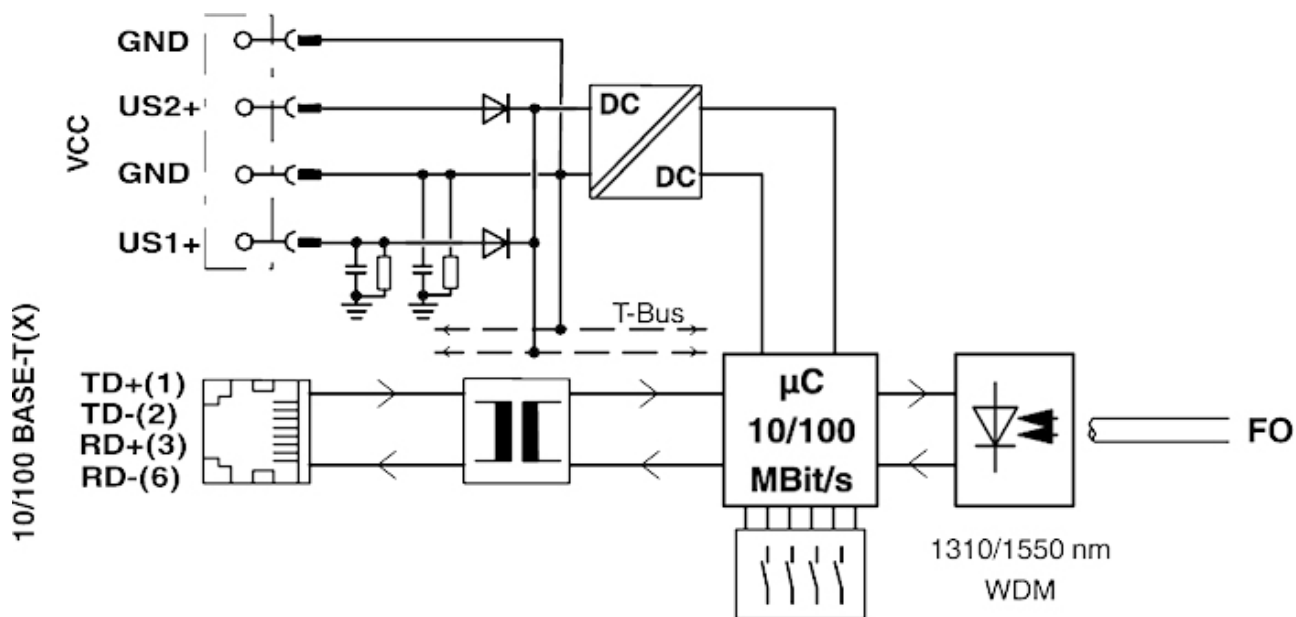
Schematic diagram



DIP switches

# FO converters - FL MC EF WDM-SET SC - 2902660

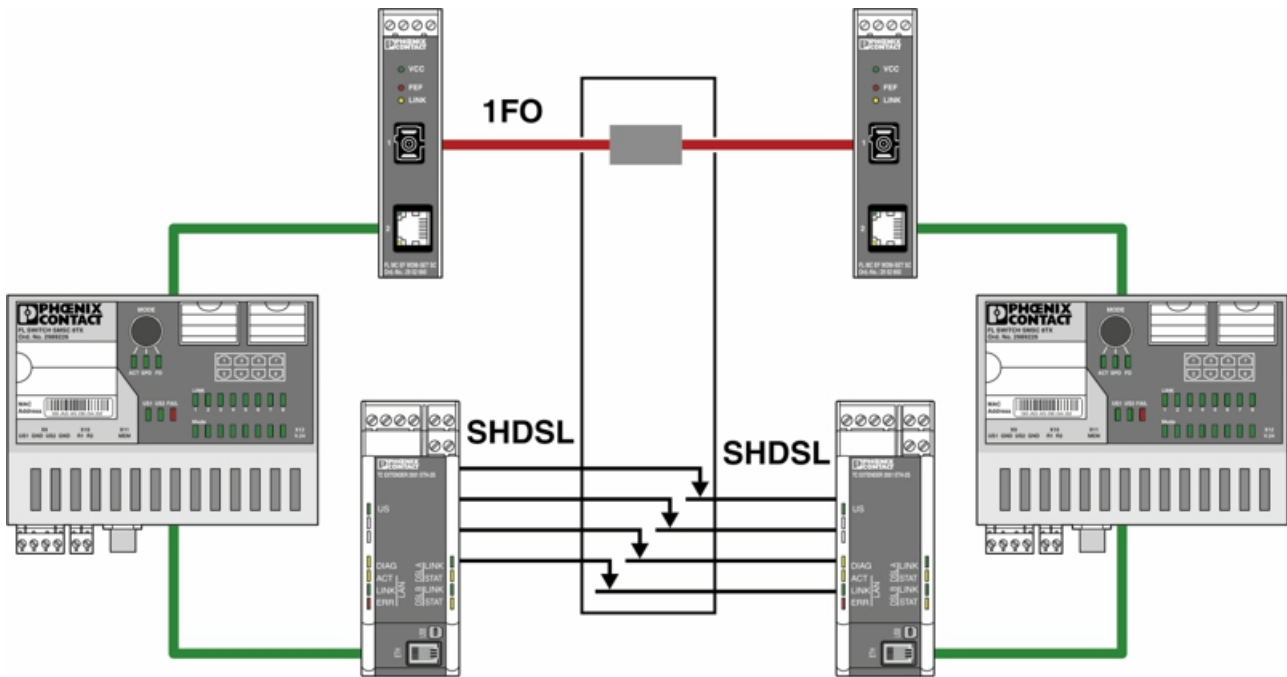
Block diagram





# FO converters - FL MC EF WDM-SET SC - 2902660

Application drawing



Redundant slip ring communication

## Articles in set

FO converters - FL MC EF WDM-A SC - 2902658



FO converter (replacement device A), for full duplex transmission from 10/100Base-T(X) to individual simplex fiberglass with WDM (wavelength division multiplex) technology, SC simplex fiber optic connection (1310/1550 nm). Device set (type A and type B) required for operation.

## FO converters - FL MC EF WDM-SET SC - 2902660

### Articles in set

FO converters - FL MC EF WDM-B SC - 2902659



FO converter (replacement device B), for full duplex transmission from 10/100Base-T(X) to individual simplex fiberglass with WDM (wavelength division multiplex) technology, SC simplex fiber optic connection (1550/1310 nm). Device set (type A and type B) required for operation.

### Classifications

#### eCl@ss

eCl@ss 4.0	27230200
eCl@ss 4.1	27230200
eCl@ss 5.0	27230200
eCl@ss 5.1	27230200
eCl@ss 6.0	27230200
eCl@ss 7.0	19170114
eCl@ss 8.0	19170114
eCl@ss 9.0	19170114

#### ETIM

ETIM 3.0	EC000310
ETIM 4.0	EC000310
ETIM 5.0	EC001467
ETIM 6.0	EC001467
ETIM 7.0	EC001467

#### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	43223323
UNSPSC 19.0	43223323
UNSPSC 20.0	43223323
UNSPSC 21.0	43223323

### Approvals

#### Approvals

## FO converters - FL MC EF WDM-SET SC - 2902660

### Approvals

Approvals



DNV GL / EAC

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Ex Approvals

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### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00001KR
EAC			RU*DE*08.B.00731/19

### Accessories

Accessories

Data cable by the meter

Network cable - FL CAT5 HEAVY - 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<sup>2</sup>, solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

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Network cable - FL CAT5 FLEX - 2744830



CAT5-SF/UTP cable (J-LI02YS(ST)C H 2 x 2 x 26 AWG), light-duty, flexible installation cable 2 x 2 x 0.14 mm<sup>2</sup>, stranded, shielded, outer sheath: 5.75 mm ± 0.15 mm diameter

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FO cable - PSM-LWL-GDO- 50/125 - 2799432



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

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## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

FO cable - PSM-LWL-GDM-RUGGED- 50/125 - 2799322



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

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### Data cable preassembled

Fiber optic cable - FOC-LC:PA-SC:PA-OM2:D01/1 - 1115607



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Fiber optic cable - FOC-LC:PA-SC:PA-OM2:D01/2 - 1115605



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Fiber optic cable - FOC-SC:PA-SC:PA-OM2:D01/1 - 1115536



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

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Fiber optic cable - FOC-SC:PA-SC:PA-OM2:D01/2 - 1115535



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

## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

Fiber optic cable - FOC-ST:PA-SC:PA-OM2:D01/1 - 1115574



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

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Fiber optic cable - FOC-ST:PA-SC:PA-OM2:D01/2 - 1115573



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

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Fiber optic cable - FOC-LC:PA-SC:PA-OM4:D01/1 - 1115601



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

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Fiber optic cable - FOC-LC:PA-SC:PA-OM4:D01/2 - 1115600



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

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Fiber optic cable - FOC-SC:PA-SC:PA-OM4:D01/1 - 1115424



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

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## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

Fiber optic cable - FOC-SC:PA-SC:PA-OM4:D01/2 - 1115423



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

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

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FO patch cable - FOC-GDM-RUGGED-1016/... - 1402193



rugged GOF installation cable for inner areas with highly tear-proof aramid strain-relief elements. Individual elements consist of highly flexible FRNC material. The cable is halogen-free, ozone and UV resistant and has a rugged polyurethane (PUR) outer sheath.

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

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Fiber optic cable - FOC-SC:PA-SC:PA-OS2:D01/1 - 1115550



Single-mode OS2 duplex jumper, SC-SC, UPC polishing, length 1 m

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## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

Fiber optic cable - FOC-SC:PA-SC:PA-OS2:D01/2 - 1115548



Single-mode OS2 duplex jumper, SC-SC, UPC polishing, length 2 m

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Fiber optic cable - FOC-ST:PA-SC:PA-OS2:D01/1 - 1115582



Single-mode OS2 duplex jumper, ST-SC, UPC polishing, length 1 m

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Fiber optic cable - FOC-ST:PA-SC:PA-OS2:D01/2 - 1115581



Single-mode OS2 duplex jumper, ST-SC, UPC polishing, length 2 m

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Fiber optic cable - FOC-LC:PA-SC:PA-OS2:D01/1 - 1115618



Single-mode OS2 duplex jumper, LC-SC, UPC polishing, length 1 m

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Fiber optic cable - FOC-LC:PA-SC:PA-OS2:D01/2 - 1115617



Single-mode OS2 duplex jumper, LC-SC, UPC polishing, length 2 m

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## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

#### FO patch cable - FL MM PATCH 1,0 SC-SCRJ - 2901812



Assembled FO cable, break out cable, multimode fiberglass 50/125  $\mu\text{m}$  (OM2), connector: SC duplex/SC-RJ, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

#### FO patch cable - FL MM PATCH 2,0 SC-SCRJ - 2901813



Assembled FO cable, break out cable, multimode fiberglass 50/125  $\mu\text{m}$  (OM2), connector: SC duplex/SC-RJ, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 m

#### FO patch cable - FL MM PATCH 5,0 SC-SCRJ - 2901814



Assembled FO cable, break out cable, multimode fiberglass 50/125  $\mu\text{m}$  (OM2), connector: SC duplex/SC-RJ, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 5 m

### Data plug

#### RJ45 connector - VS-08-RJ45-5-Q/IP20 - 1656725



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042

#### RJ45 connector - VS-08-RJ45-5-Q/IP20 BK - 1658008



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, connection cross section: AWG 26- 23, cable outlet: straight, color: black

### DIN rail connector



## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

DIN rail bus connectors - ME 22,5 TBUS 1,5/ 5-ST-3,81 GN - 2707437



DIN rail connector, number of positions: 5, pitch: 3.81 mm, pin layout: Linear pinning, Articles with gold-plated contacts, bus connectors for connecting with electronic housings

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



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

### Media converter

FO converters - FL MC EF WDM-A SC - 2902658



FO converter (replacement device A), for full duplex transmission from 10/100Base-T(X) to individual simplex fiberglass with WDM (wavelength division multiplex) technology, SC simplex fiber optic connection (1310/1550 nm). Device set (type A and type B) required for operation.

FO converters - FL MC EF WDM-B SC - 2902659



FO converter (replacement device B), for full duplex transmission from 10/100Base-T(X) to individual simplex fiberglass with WDM (wavelength division multiplex) technology, SC simplex fiber optic connection (1550/1310 nm). Device set (type A and type B) required for operation.

### Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

## FO converters - FL MC EF WDM-SET SC - 2902660

### Accessories

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2 m

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Patch cable - FL CAT5 PATCH 3,0 - 2832292



Patch cable, CAT5, assembled, 3 m

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### Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

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Assembly tool - FL CRIMPTOOL - 2744869



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

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