

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

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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.

## Product Features

- 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 (LFP) and far end fault (FEF) functions for easy connection monitoring
- Data rates 10/100 Mbps



## Key commercial data

package_quantity	1
GTIN	4046356669696

## Technical data

Note:

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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## Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

## Ambient conditions

Ambient temperature (operation)	-40 °C ... 65 °C
Ambient temperature (operation)	-25 °C ... 65 °C (With UL approval)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (no condensation)
Permissible humidity (storage/transport)	30 % ... 95 % (no condensation)
Altitude	5000 m (For restrictions see manufacturer's declaration)
Altitude	2000 m (With UL approval)
Degree of protection	IP20

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## Technical data

### General

<b>Electrical isolation</b>	according to IEEE 802.3
<b>Electrical isolation</b>	(VCC // FE // Ethernet)
<b>Test voltage data interface/power supply</b>	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)
<b>Standards/regulations</b>	EN 60950-1
<b>Electromagnetic compatibility</b>	Conformance with EMC Directive 2004/108/EC
<b>Net weight</b>	120 g
<b>Housing material</b>	PA 6.6-FR
<b>Color</b>	green
<b>MTBF</b>	492 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
<b>MTBF</b>	133 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
<b>Conformance</b>	CE-compliant
<b>ATEX</b>	# II 3 G Ex nA IIC T4 Gc X
<b>UL, USA / Canada</b>	Class I, Zone 2, AEx nA IIC T4
<b>UL, USA / Canada</b>	Class I, Zone 2, Ex nA IIC T4 Gc X

### Power supply

<b>Supply voltage range</b>	18 V DC ... 30 V DC (Screw connection)
<b>Supply voltage range</b>	18 V DC ... 30 V DC (as an alternative or redundant, via backplane bus contact and system current supply)
<b>Typical current consumption</b>	< 110 mA (24 V DC)
<b>Protective circuit</b>	Protection against polarity reversal
<b>Connection method</b>	Plug-in screw terminal block (COMBICON), redundancy possible
<b>Conductor cross section stranded max.</b>	2.50 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.20 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	2.50 mm <sup>2</sup>
<b>Conductor cross section solid min.</b>	0.20 mm <sup>2</sup>
<b>Max. AWG conductor cross section, stranded</b>	14
<b>Min. AWG conductor cross section, stranded</b>	24
<b>Conductor cross section AWG/kcmil max</b>	14
<b>Conductor cross section AWG/kcmil min.</b>	24

### Serial interface

<b>Interface 1</b>	Ethernet interface, 10/100BASE-T(X) in acc. with IEEE 802.3u
<b>Connection method</b>	RJ45 socket, shielded
<b>Transmission medium</b>	Copper
<b>Transmission length</b>	100 m (twisted pair, shielded)
<b>Conductor cross section solid min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	2.5 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	24

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## Technical data

### Serial interface

<b>Conductor cross section AWG/kcmil max</b>	14
<b>Auto-negotiation modes</b>	Auto
<b>Link through</b>	Link fault pass through
<b>Basic functions</b>	Store-and-forward media converter
<b>MDI-/MDI-X switchover</b>	Auto-MDI(X)
<b>Signal LEDs</b>	Activity, link status, 10/100 Mbps

### Optical interface FO

<b>Transmit capacity, minimum</b>	≥ ((9/125 μm) dynamic in link mode (average))
<b>Transmit capacity, maximum</b>	≤ -8 dBm ((9/125 μm) dynamic in link mode (average))
<b>Minimum receiver sensitivity</b>	min. -31 dBm (dynamic in link mode (average))
<b>Maximum receiver sensitivity</b>	-8 dBm (dynamic in link mode (average))
<b>Wavelength</b>	1550 nm
<b>Wavelength</b>	1310 nm
<b>Transmission length incl. 3 dB system reserve</b>	38 km (With F-E 9/125 0.36 dB/km)
<b>Transmission length incl. 3 dB system reserve</b>	34 km (With F-E 9/125 0.4 dB/km)
<b>Transmission length incl. 3 dB system reserve</b>	28 km (With F-E 9/125 0.5 dB/km)
<b>Transmission length incl. 3 dB system reserve</b>	21 km (with F-G 62,5/125 0,7 dB/km F 1000)
<b>Transmission length incl. 3 dB system reserve</b>	5.5 km (with F-G 62.5/125 2.6 dB/km F 600)
<b>Transmission length incl. 3 dB system reserve</b>	21 km (with F-G 50/125 0,7 dB/km F 1200)
<b>Transmission length incl. 3 dB system reserve</b>	9 km (with F-G 50/125 1,6 dB/km F 800)
<b>Transmission medium</b>	Multi-mode fiberglass
<b>Transmission medium</b>	Single-mode fiberglass
<b>Connection method</b>	SC simplex

## classifications

### eCl@ss

<b>eCl@ss 4.0</b>	27230207
<b>eCl@ss 4.1</b>	27230207
<b>eCl@ss 5.0</b>	27230207
<b>eCl@ss 5.1</b>	27230207
<b>eCl@ss 6.0</b>	27230207
<b>eCl@ss 7.0</b>	27230207
<b>eCl@ss 8.0</b>	27230207

### ETIM

<b>ETIM 3.0</b>	EC000310
<b>ETIM 4.0</b>	EC000310
<b>ETIM 5.0</b>	EC001467

### UNSPSC

<b>UNSPSC 6.01</b>	30211506
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## classifications

### UNSPSC

UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

## approvals

ATEX / UL Listed / cUL Listed / cULus Listed / UL Listed / cUL Listed / cULus Listed /

### Approval details

ATEX	
Nominal voltage UN	
Nominal current IN	
mm <sup>2</sup> /AWG/kcmil	

UL Listed
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cUL Listed
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cULus Listed
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## FO converters - FL MC EF WDM-B SC - 2902659

accessories

### Media converter set

FL MC EF WDM-SET SC - 2902660



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### Data cable by the meter

FL CAT5 HEAVY - 2744814



FL CAT5 FLEX - 2744830



PSM-LWL-GDO- 50/125 - 2799432



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



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### Universal tools

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

### accessories

FL CRIMPTOOL - 2744869



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### DIN rail connector

ME 22,5 TBUS 1,5/ 5-ST-3,81 GN - 2707437



ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



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### Power supply

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



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### Data cable preassembled

FL MM PATCH 1,0 LC-SC - 2989161



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### accessories

FL MM PATCH 2,0 LC-SC - 2989268



FL MM PATCH 5,0 LC-SC - 2901800



FL MM PATCH 1,0 SC-SC - 2901805



FL MM PATCH 2,0 SC-SC - 2901807



FL MM PATCH 5,0 SC-SC - 2901808



FL MM PATCH 1,0 SC-ST - 2901809



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### accessories

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FL MM PATCH 2,0 SC-ST - 2901810



FL MM PATCH 5,0 SC-ST - 2901811



FL MM PATCH 1,0 SC-SCRJ - 2901812



FL MM PATCH 2,0 SC-SCRJ - 2901813



FL MM PATCH 5,0 SC-SCRJ - 2901814





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

### accessories

FOC-GDM-RUGGED-1016/IP20/... - 2901558



FOC-GDM-RUGGED-1016/... - 1402193



FOC-GDO-1017/IP20/... - 2901559



FOC-GDO-1017/... - 1402194



FOC-PN-HCS-GI-1005/IP20/... - 2901554



FOC-PN-HCS-GI-1005/... - 1402189



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

### accessories

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FL SM PATCH 1,0 LC-SC - 2989190



FL SM PATCH 2,0 LC-SC - 2989297



FL SM PATCH 5,0 LC-SC - 2901827



FL SM PATCH 1,0 SC-SC - 2901829



FL SM PATCH 2,0 SC-SC - 2901830



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

### accessories

FL SM PATCH 5,0 SC-SC - 2901831



FL SM PATCH 1,0 SC-ST - 2901832



FL SM PATCH 2,0 SC-ST - 2901833



FL SM PATCH 5,0 SC-ST - 2901834



### Data plug

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



### Patch cable

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### accessories

FL CAT5 PATCH 0,5 - 2832263



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FL CAT5 PATCH 1,0 - 2832276



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FL CAT5 PATCH 2,0 - 2832289



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FL CAT5 PATCH 3,0 - 2832292

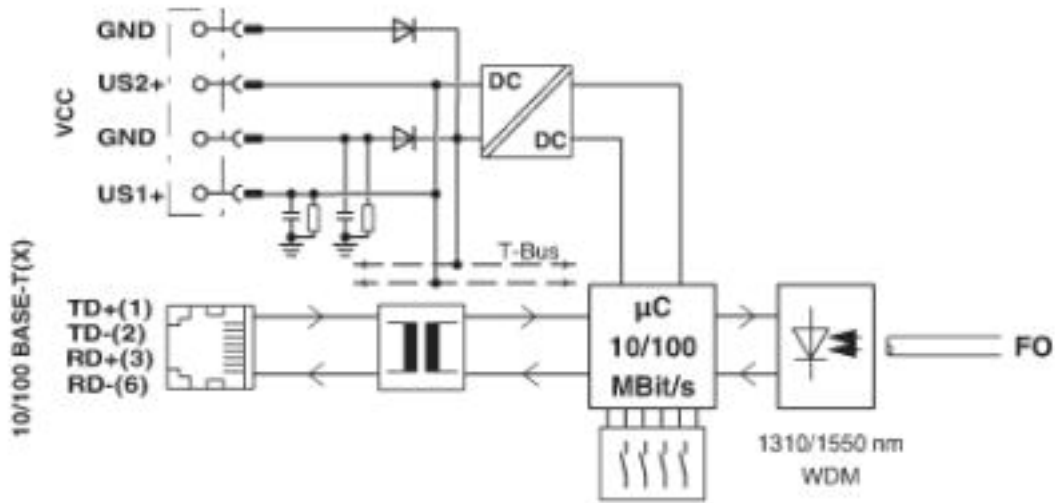


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### Drawings

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

Block diagram



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