




Product information M-SFP-LH/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LH/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38629/en/conf/ui/state>

Name	M-SFP-LH/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LH/LC
Order No.	943 042-001
Network size - length of cable	
Single mode fiber (LH) 9/125 µm (long haul transceiver)	16 -80 km 6 - 22 dB link budget at 1550 nm A = 0.25 dB/km, 2 dB reserve, D = 19 ps/(nm x km)
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-25 °C to +70 °C
Relative humidity (non-condensing)	10% to 95%
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of information technology equipment	cUL 60950-1
Shipbuilding	Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LH/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38629/en/conf/uistate>

Scope of delivery and accessories

Scope of delivery	SFP module
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For more information please contact:

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Product information M-SFP-LH/LC-EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LH/LC-EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-40673/en/conf/ui/state>

Name	M-SFP-LH/LC-EEC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LH/LC-EEC
Order No.	943 898-001
Network size - length of cable	
Single mode fiber (LH) 9/125 µm (long haul transceiver)	16 -80 km 6 - 22 dB link budget at 1550 nm A = 0.25 dB/km, 2 dB reserve, D = 19 ps/(nm x km)
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	-40 °C to +85 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Shipbuilding	Germanischer Lloyd
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-LH+/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LH+/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38630/en/conf/ui/state>

Name	M-SFP-LH+/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LH+/LC
Order No.	943 049-001
Network size - length of cable	
Single mode fiber (LH) 9/125 µm (long haul transceiver)	44 - 120 km 13 - 32 dB link budget at 1550 nm A = 0.25 dB/km, 2 dB reserve, D = 19 ps/(nm x km)
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of information technology equipment	cUL 60950-1
Shipbuilding	Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-LX/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38628/en/conf/ui/state>

Name	M-SFP-LX/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LX/LC
Order No.	943 015-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 550 m, 0 - 11 dB link budget at 1310 nm A = 1 dB/km, 3 dB reserve, B = 800 MHz x km With f/o adapter in line with IEEE 802.3-2000 clause 38 (single-mode fiber offset-launch mode conditioning patch cord)
Multimode fiber (MM) 62.5/125 µm	0 - 550 m, 0 - 11 dB link budget at 1310 nm A = 1 dB/km, 3 dB reserve, B = 500 MHz x km With f/o adapter in line with IEEE 802.3-2000 clause 38 (single-mode fiber offset-launch mode conditioning patch cord)
Single mode fiber (SM) 9/125 µm	0 m - 20 km, 0 - 11 dB link budget at 1310 nm A = 0.4 dB/km, 3 dB reserve, D = 3.5 ps/(nm x km)
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
MTBF	13 888 889 Heures
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)



Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX/LC

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EMC emitted immunity

FCC CFR47 Part 15 FCC CFR47 Part 15 Class A

EN 55022 EN 55022 Class A

Approvals

Safety of information technology equipment cUL 60950-1

Shipbuilding Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA

Scope of delivery and accessories

Scope of delivery SFP module

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Product information M-SFP-LX/LC EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-40545/en/conf/ui/state>

Name	M-SFP-LX/LC EEC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LX/LC EEC
Order No.	943 897-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 550 m, 0 - 11 dB link budget at 1310 nm A = 1 dB/km, 3 dB reserve, B = 800 MHz x km With f/o adapter in line with IEEE 802.3-2000 clause 38 (single-mode fiber offset-launch mode conditioning patch cord)
Multimode fiber (MM) 62.5/125 µm	0 - 550 m, 0 - 11 dB link budget at 1310 nm A = 1 dB/km, 3 dB reserve, B = 500 MHz x km With f/o adapter in line with IEEE 802.3-2000 clause 38 (single-mode fiber offset-launch mode conditioning patch cord)
Single mode fiber (SM) 9/125 µm	0 m - 20 km, 0 - 11 dB link budget at 1310 nm A = 0.4 dB/km, 3 dB reserve, D = 3.5 ps/(nm x km)
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	-40 °C to +85 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
MTBF	13 888 889 Heures
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-40545/en/conf/uistate>

EN 55022	EN 55022 Class A
Approvals	
Hazardous locations	cUL 60950-1
Shipbuilding	Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA
Scope of delivery and accessories	
Scope of delivery	SFP module

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Product information M-SFP-LX+/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX+/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-134975/en/conf/uisstate>

Name	M-SFP-LX+/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range.
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LX+/LC
Order No.	942 023-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	n/a
Multimode fiber (MM) 62.5/125 µm	n/a
Single mode fiber (SM) 9/125 µm	5-42 km, 5-20 dB link budget at 1310 nm, A = 0.4 dB/km, 3 dB reserve
Single mode fiber (LH) 9/125 µm (long haul transceiver)	n/a
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0°C to +60°C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% up to 95%
MTBF	856 years, Telcordia SR-332
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-LX+/LC EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-LX+/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-134974/en/conf/ui/istate>

Name	M-SFP-LX+/LC EEC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range.
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-LX+/LC EEC
Order No.	942 024-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	n/a
Multimode fiber (MM) 62.5/125 µm	n/a
Single mode fiber (SM) 9/125 µm	5-42 km, 5-20 dB link budget at 1310 nm, A = 0.4 dB/km, 3 dB reserve
Single mode fiber (LH) 9/125 µm (long haul transceiver)	n/a
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	-40°C to +85°C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% up to 95%
MTBF	856 years, Telcordia SR-332
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-MX/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-MX/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-150164/en/conf/ui/state>

Name	M-SFP-MX/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver for: All switches with Gigabit Ethernet SFP slot
Delivery informations	
Availability	no longer available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver for: All switches with Gigabit Ethernet SFP slot
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-MX/LC
Order No.	942 035-001
Replaced by	M-SFP-MX/LC EEC
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 2 km, 0 - 8 dB Link Budget bei 1310 nm, A = 1 dB/km, B = 500 MHz x km
Multimode fiber (MM) 62.5/125 µm	0 - 1 km, 0 - 8 dB Link Budget bei 1310 nm, A = 1 dB/km, B = 500 MHz x km
Single mode fiber (SM) 9/125 µm	n/a
Single mode fiber (LH) 9/125 µm (long haul transceiver)	n/a
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
MTBF	n/a
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-MX/LC EEC - M-SFP-MX/LC EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-MX/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-402516/en/conf/uisstate>

Name	M-SFP-MX/LC EEC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver for: All switches with Gigabit Ethernet SFP slot.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver for: All switches with Gigabit Ethernet SFP slot.
Port type and quantity	1 x 1000BASE-LX with LC connector
Type	M-SFP-MX/LC EEC
Order No.	942 108-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 1,5 km, 0 - 12 dB Link Budget bei 1310 nm, A = 1 dB/km, B = 500 MHz x km
Multimode fiber (MM) 62.5/125 µm	0 - 0.5 km, 0 - 12 dB Link Budget bei 1310 nm, A = 1 dB/km, B = 500 MHz x km
Single mode fiber (SM) 9/125 µm	n/a
Single mode fiber (LH) 9/125 µm (long haul transceiver)	n/a
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	-40 °C to +70 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
MTBF	n/a
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min. 0.7g, 13.2 Hz - 100 Hz, 90 min. 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min. 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Scope of delivery and accessories	
Scope of delivery	SFP module



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Product information M-SFP-SX/LC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-SX/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38627/en/conf/ui/state>

Name	M-SFP-SX/LC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver for: MICE media modules, MM4-4TX/SFP and MM4-2TX/SFP, OpenRail RS30-Switches, MACH 4000, SmartLION and GigaLION.
Port type and quantity	1 x 1000BASE-SX with LC connector
Type	M-SFP-SX/LC
Order No.	943 014-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 550 m 0 - 7,5 dB link budget at 850 nm A = 3 dB/km, 3 dB reserve, B = 400 MHz x km
Multimode fiber (MM) 62.5/125 µm	0 - 275 m 0 - 7,5 dB link budget at 850 nm A = 3,2 dB/km, 3 dB reserve, B = 200 MHz x km
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-SX/LC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-38627/en/conf/ui/state>

Approvals

Safety of information technology equipment	cUL 60950-1
Shipbuilding	Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA
Scope of delivery and accessories	
Scope of delivery	SFP module

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Product information M-SFP-SX/LC EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-SX/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-40544/en/conf/uistate>

Name	M-SFP-SX/LC EEC
	
	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range
Delivery informations	
Availability	available
Product description	
Description	SFP Fiberoptic Gigabit Ethernet Transceiver, extended temperature range
Port type and quantity	1 x 1000BASE-SX with LC connector
Type	M-SFP-SX/LC EEC
Order No.	943 896-001
Network size - length of cable	
Multimode fiber (MM) 50/125 µm	0 - 550 m 0 - 7,5 dB link budget at 850 nm A = 3 dB/km, 3 dB reserve, B = 400 MHz x km
Multimode fiber (MM) 62.5/125 µm	0 - 275 m 0 - 7,5 dB link budget at 850 nm A = 3,2 dB/km, 3 dB reserve, B = 200 MHz x km
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	optical input and output power, transceiver temperature
Ambient conditions	
Operating temperature	-40 °C to +85 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
Mechanical construction	
Dimensions (W x H x D)	20 mm x 18 mm x 50 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of information technology equipment	cUL 60950-1
Shipbuilding	Germanischer Lloyd, ABS, BV, DNV, LR, KR, RINA



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Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-SX/LC EEC

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-40544/en/conf/uistate>

Scope of delivery and accessories

Scope of delivery	SFP module
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Product information M-SFP-TX/RJ45 - M-SFP-TX/RJ45

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-TX/RJ45

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-109824/en/conf/uisstate>

Name	M-SFP-TX/RJ45
	
	SFP TX Gigabit Ethernet Transceiver for Gigabit Ethernet slots, 1000 Mbit/s full duplex auto neg. fixed, cable crossing not supported
Delivery informations	
Availability	available
Product description	
Description	SFP TX Gigabit Ethernet Transceiver for Gigabit Ethernet slots, 1000 Mbit/s full duplex auto neg. fixed, cable crossing not supported
Port type and quantity	1 x 1000BASE-T with RJ45-socket
Type	M-SFP-TX/RJ45
Order No.	943 977-001
Network size - length of cable	
Twisted pair (TP)	0 m ... 100 m
Multimode fiber (MM) 50/125 µm	n/a
Multimode fiber (MM) 62.5/125 µm	n/a
Single mode fiber (SM) 9/125 µm	n/a
Single mode fiber (LH) 9/125 µm (long haul transceiver)	n/a
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Service	
Diagnostics	n/a
Ambient conditions	
Operating temperature	0 °C up to +60 °C
Storage/transport temperature	-40°C up to +85°C
Relative humidity (non-condensing)	10% up to 95%
MTBF	45 years, Telcordia GR-468-CORE
Mechanical construction	
Dimensions (W x H x D)	14 mm x 14 mm x 70 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of industrial control equipment	cUL 60950-1
Hazardous locations	n/a

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-SFP-TX/RJ45

<http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-109824/en/conf/ui/state>

Safety of information technology equipment	n/a
Shipbuilding	n/a
Scope of delivery and accessories	
Scope of delivery	SFP module
Accessories to order separately	n/a

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Product information M-FAST SFP-TX/RJ45 EEC

Industrial Ethernet: System Accessories: Fiberoptic Transceiver: SFP Gigabit-Ethernet Transceiver for media module: M-FAST SFP-TX/RJ45 EEC	
http://www.e-catalog.beldensolutions.com/link/57078-24455-24544-24535-24529-411428/en/conf/ui/state	
Name	M-FAST SFP-TX/RJ45 EEC
	SFP TX Fast Ethernet Transceiver, 100 Mbit/s full duplex auto neg. fixed, cable crossing not supported
Delivery informations	
Availability	available
Product description	
Description	SFP TX Fast Ethernet Transceiver, 100 Mbit/s full duplex auto neg. fixed, cable crossing not supported
Port type and quantity	1 x 100BASE-T with RJ45-socket
Type	M-FAST SFP-TX/RJ45 EEC
Order No.	942 098-002
Power requirements	
Operating voltage	power supply via the switch
Power consumption	1 W
Ambient conditions	
Operating temperature	-40 °C to +70 °C
Storage/transport temperature	-40°C to +85°C
Relative humidity (non-condensing)	10% to 95%
MTBF	67 years (Telcordia GR-468-CORE)
Mechanical construction	
Dimensions (W x H x D)	14 mm x 14 mm x 70 mm
Mounting	SFP slot
Weight	40 g
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min. 0.7g, 13.2 Hz - 100 Hz, 90 min. 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min. 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of industrial control equipment	cUL 60950-1
Scope of delivery and accessories	
Scope of delivery	SFP module

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