

Datasheet

Gigabit Ethernet SFP Transceiver



General

Small Form Factor Pluggable (SFP) is an exchangeable transceiver module which is used in compatible active devices. It is smaller than any of the currently available form factors and offers the highest density per line interface.

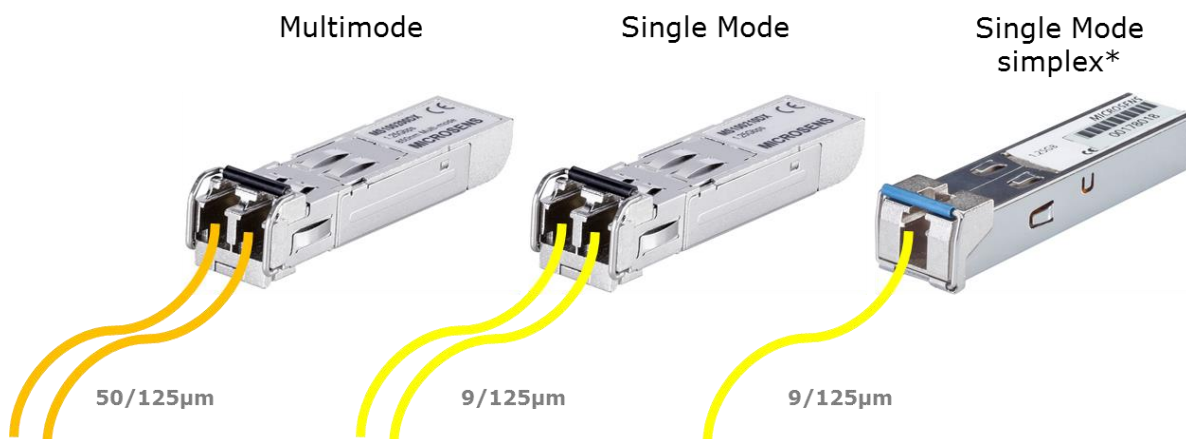
A large proportion of today's active network products are already equipped with slots for modular optical transceivers. This gives the user the greatest possible flexibility in network configuration. Due to the special design, the installation can also be carried out during operation (hot swap).

The SFP is selected depending on the cable type (multimode, single mode, simplex, twisted pair) and the bandwidth used.

The Multi Source Agreement (MSA) and SFF-8472 guarantee the standardized design and benefits of the SFP transceivers in terms of design and optional digital diagnostic function.

The SFPs with a maximum bandwidth of up to 1.25Gbit/s support Gigabit Ethernet as well as Gigabit Fiber Channel.

Transceiver Type / Cable Type



* Attention: for simplex (fiber-optic or bi-directional communication), make sure that the appropriate wavelengths are used (TX/RX transmit and receive direction) and that the transceivers are used in pairs (A<->B).

Technical Specifications

	MS100200	MS100200D	MS100200DX	MS100210	MS100210D	MS100210DX
Type:	SFP	SFP	SFP	SFP	SFP	SFP
Connection	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex
Interface	Multi-mode	Multi-mode	Multi-mode	Single-mode	Single-mode	Single-mode
Digital Diagnostic Interface	-	intern	intern	-	intern	intern
Distance (typ.) (in km)	0,55	0,55	0,55	10	10	10
Operating Temperature Range (in °C)	0..+70	0..+70	-40..+85	0..+70	0..+70	-40..+85
Bandwidth (in MBit/s)	1063.. 1250	1063.. 1250	1063.. 1250	1063.. 1250	1063.. 1250	1063.. 1250
Wavelength TX (typ.) (in nm)	850	850	850	1310	1310	1310
Wavelength RX (typ.) (in nm)	850	850	850	1310	1310	1310
Wavelength Range TX (in nm)	830.. 860	830.. 860	830.. 860	1270.. 1355	1270.. 1355	1270.. 1355
Wavelength Range RX (in nm)	770.. 860	770.. 860	770.. 860	1260.. 1610	1260.. 1610	1260.. 1610
Powerbudget (in dB)	8,5	8,5	8,5	10,5	12	12
Transmit MIN/MAX (in dBm)	-9,5 / -4	-9,5 / -4	-9,5 / -4	-9,5 / -3	-9 / -3	-9 / -3
Receiver MIN/MAX ov (in dBm)	-18 / 0	-18 / 0	-18 / 0	-20 / -3	-21 / -3	-21 / -3
Extinction Ratio (in dB)	9	9	9	9	9	9
Protocols	Gigabit Ethernet, Gigabit Fiber Channel					

Technical Specifications

	MS100211	MS100211D	MS100211DX	MS100213D	MS100213DX	MS100214D	MS100214DX	MS100215D	MS100215DX
Type:	SFP	SFP	SFP	SFP	SFP	SFP	SFP	SFP	SFP
Connection	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex
Interface	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode
Digital Diagnostic interface (DDM)	-	internal	internal	internal	internal	internal	internal	internal	internal
Distance (typ.) (in km)			30	50	50	70	70	120	120
Operating Temperature range (in °C)	0..+70	0..+70	-40..+85	0..+70	-40..+85	0..+70	-40..+85	0..+70	-40..+85
Bandwidth (in MBit/s)			1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250
Wavelength TX (typ.) (in nm)	1310	1310	1310	1550	1550	1550	1550	1550	1550
Wavelength RX (typ.) (in nm)	1310	1310	1310	1550	1550	1550	1550	1550	1550
Wavelength Range TX (in nm)			1280..1340	1530..1570	1530..1570	1530..1570	1530..1570	1530..1570	1530..1570
Wavelength Range RX (in nm)			1260..1610	1260..1610	1260..1610	1260..1610	1260..1610	1260..1610	1260..1610
Powerbudget (in dB)			20	20	20	24	24	32	32
Transmit MIN/MAX (in dBm)			-4 / +3	-4 / +1	-4 / +1	0 / +5	0 / +5	0 / +5	0 / +5
Receiver MIN/MAX overload (in dBm)			-24 / -1	-24 / -1	-24 / -1	-24 / -1	-24 / -1	-32 / -8	-32 / -8
Extinction Ratio (in dB)			7	7	7	7	7	7	7
Protocolls	Gigabit Ethernet, Gigabit Fiber Channel								

	MS100221DXA	MS100221DXB	MS100222DXA	MS100222DXB	MS100223DXA	MS100223DXB	MS100224DXA	MS100224DXB	MS100225DXA	MS100225DXB
Type:	SFP	SFP	SFP	SFP	SFP	SFP	SFP	SFP	SFP	SFP
Connection	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex
Interface	Multi-mode	Multi-mode	Multi-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode	Single-mode
Digital Diagnostic Interface	Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal
Distance (typ.) (in km)	10	10	10	10	20	20	40	40	60	60
Operating Temperature range (in °C)	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85	-40..+85
Bandwidth (in MBit/s)	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250	1063..1250
Wavelength TX (typ.) (in nm)	1310	1550	1310	1490	1310	1490	1310	1550	1310	1550
Wavelength RX (typ.) (in nm)	1550	1310	1490	1310	1490	1310	1550	1310	1550	1310
Wavelength Range TX (in nm)	1270..1355	1530..1570	1260..1360	1480..1500	1260..1360	1480..1500	1290..1330	1530..1570	1290..1330	1530..1570
Wavelength Range RX (in nm)	1480..1580	1260..1360	1480..1500	1260..1360	1480..1500	1260..1360	1480..1580	1260..1360	1480..1580	1260..1360
Powerbudget (in dB)	12	12	12	12	15	15	20	20	24	23
Transmit MIN/MAX (in dBm)	-9 / -3	-9 / -3	-9 / -3	-9 / -3	-8 / -2	-8 / -2	-3 / +2	-3 / +2	0 / +5	-2 / +4
Receiver MIN/MAX overload (in dBm)	-21 / -3	-21 / -3	-21 / -3	-21 / -3	-23 / -2	-23 / -2	-23 / -1	-23 / -1	-24 / -1	-25 / -1
Extinction Ratio (in dB)	9	9	6	6	9	9	9	9	9	9
Protocolls	Gigabit Ethernet, Gigabit Fiber Channel									

Safety Note

Attention: visible and invisible light emitted by a fiber-optic component can cause permanent damage to your eyes!

To avoid damage to your eyes

- Never look directly into the outlets of fiber optic components - danger of blinding!
- Cover all unused optical connectors with plugs
- Commissioning of the transmission line only after completion of all connections

The active laser components used in this product comply with **laser class 1** regulations.

Order Information

Description	Art.-No.
SFP GbE Transceiver 1.25G SX Multimode 850nm, LC	MS100200
SFP GbE Transceiver 1.25G SX Multimode 850nm, DDM, LC	MS100200D
SFP GbE Transceiver 1.25G SX Multimode 850nm, DDM, LC, -40..+85°C	MS100200DX
SFP GbE Transceiver 1.25G LX SingleMode 1310nm, 10km	MS100210
SFP GbE Transceiver 1.25G LX SingleMode 1310nm, 10km, DDM, LC	MS100210D
SFP GbE Transceiver 1.25G LX SingleMode 1310nm, 10km, DDM, LC, -40..+85°C	MS100210DX
SFP GbE Transceiver 1.25G LHX SingleMode 1310nm, 25km, LC	MS100211
SFP GbE Transceiver LHX 1.25G SingleMode 1310nm, 25km, DDM, LC	MS100211D
SFP GbE Transceiver 1.25G LHX SingleMode 1310nm, 25km, DDM, LC, -40..+85°C	MS100211DX
SFP GbE Transceiver 1.25G EX SingleMode 1550nm, 50km, DDM, LC	MS100213D
SFP GbE Transceiver 1.25G EX SingleMode 1550nm, 50km, DDM, LC, -40..+85°C	MS100213DX
SFP GbE Transceiver 1.25G ZX SingleMode 1550nm, 80km, DDM, LC	MS100214D
SFP GbE Transceiver 1.25G ZX SingleMode 1550nm, 80km, DDM, LC, -40..+85°C	MS100214DX
SFP GbE Transceiver 1.25G EZX SingleMode 1550nm, 120km, DDM, LC	MS100215D
SFP GbE Transceiver 1.25G EZX SingleMode 1550nm, 120km, DDM, LC, -40..+85°C	MS100215DX

Order Information

Description	Art.-No.
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1310nm / RX1550nm, 10km, DDM, LC simplex, -40..+85°C	MS100221DXA
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1550nm / RX1310nm, 10km, DDM, LC simplex, -40..+85°C	MS100221DXB
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1310nm / RX1490nm, 10km, DDM, LC simplex, -40..+85°C	MS100222DXA
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1490nm / RX1310nm, 10km, DDM, LC simplex, -40..+85°C	MS100222DXB
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1310nm / RX1490nm, 20km, DDM, LC simplex, -40..+85°C	MS100223DXA
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1490nm / RX1310nm, 20km, DDM, LC simplex, -40..+85°C	MS100223DXB
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1310nm / RX1550nm, 40km, DDM, LC simplex, -40..+85°C	MS100224DXA
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1550nm / RX1310nm, 40km, DDM, LC simplex, -40..+85°C	MS100224DXB
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1310nm / RX1550nm, 60km, DDM, LC simplex, -40..+85°C	MS100225DXA
SFP GbE WDM-Transceiver 1.25G BX SingleMode TX1550nm / RX1310nm, 60km, DDM, LC simplex, -40..+85°C	MS100225DXB

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