

SFP-Transceiver for Polymer Optical Fiber (POF)

1 General

The SFP-Transceiver is a component to connect POF cable directly to a switch, router ect. with an optical data transfer rate of 125MBit/s (Fast-Ethernet) at 650nm optical wavelength.

It fits perfectly into the widely used SFP slots in switches run in SFP-MSA₁, described mode. The electrical interface of the transceiver corresponds to all data and recommendations mentioned in SFP-MSA₂.



Fig. 1 SFP-Transceiver with POF cable

2 Applications

Due to the high possible data rate, the very good optical characteristics and very simple termination of the POF cable without connectors this transceiver can be used in various optical networks as:

- Industry facilities
- Home networks
- Hotels, Retirement homes ect.
- Office buildings

5 Features

- Transceiver 650nm, 125MBit/s
- Easy handling
- RPOpto clamp duplex
- Suitable for POF
- Cable diameter 1.5mm
- Power consumption 0.46W
- Link length up to 70m
- SFP-Transceiver without ID identification

3 Odering information

Item	Product number
SFP-Transceiver 650nm	905TR650KDFP1

6 Accessories

Item	Product number
RPsimple-Cut	910SW00101
POF duplex cable	903IP00102152

4 Dimensioned drawing

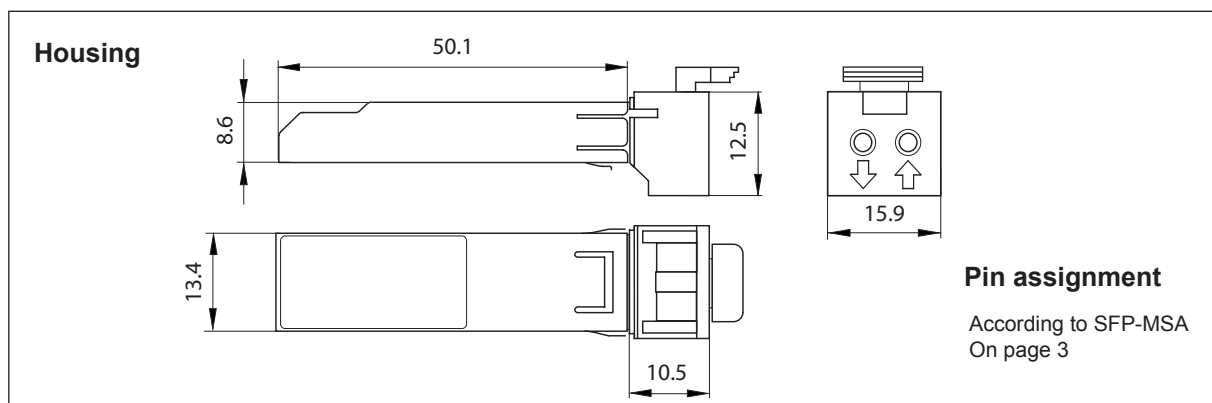


Fig. 2 Dimensions SFP-Transceiver

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7 Maximum ratings

Stresses beyond those listed under „Maximum Ratings“ may cause permanent damage to the electronic component. The maximum ratings represent the stress limits of the electronic component. Operation of the electronic component at these values is not recommended over an extended period as this may adversely affect the reliability of the component.

Parameter	Min.	Typ.	Max.	Unit	Advise
Operating voltage		3.30		V	3.3V+/-5% acc. SFP-MSA
Power Input		140	170	mA	
Power consumption		0.46		W	
Data rate		125		MBit/s	nominal, 100 Base FX
Operating temperature	-20		70	°C	³⁾

8 Technical data transmitter

Parameter	Min.	Typ.	Max.	Unit	Advise
Peak wavelength		654		nm	
Spectral energy distribution		24		nm	
Power output into 1mm fiber	-4.0	-2.0		dBm	acc. 1m POF @ +25°C
	5.0	-2.8		dBm	acc. 1m POF @ +70°C
Optical rise time		2.2	2.5	ns	Level 20% / 80 %
Optical fall time		2.3	2.6	ns	Level 20% / 80 %

9 Technical data receiver

Parameter	Min.	Typ.	Max.	Einheit	Hinweis
Sensitivity		-19		dBm	@650nm
	-17				@650nm, 70m POF,+70C°
SD ON threshold	-17	-19		dBm	
SD Hystereses		3		dB	
SD OFF threshold	-20	-22		dBm	
Switching time, electrical output, t_r, t_f			2.0	ns	PECL



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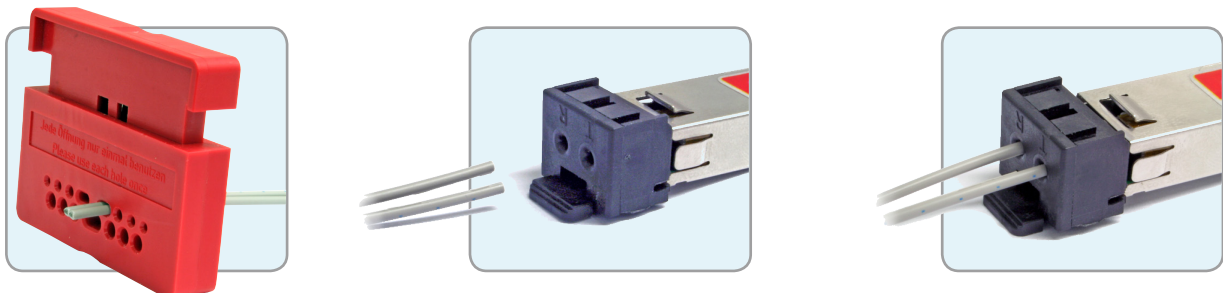
10 Specifics

The connection of the POF is easy done without connector with the RPopto clamp. The output performance of the optical transmitter is constant over a wide temperature range. The receiver is equipped with an electronical dispersion compensation feature. Thus guarantees a safe transfer up to 70m and also a reliable error-free optical connection⁴.
 SFP-Transceiver can be plugged and unplugged in operation (hot plug).

11 POF, optical budget and range

The typical optical power budget is 17dB. Using 70m long standard POF duplex cable (Type A4a.2 with 180dB/km attenuation) the loss margin is about 4.4 dB.

12 Application



In order achieve a good transfer performance the POF should have plain and clean fiber surfaces. With the tool „RPsimple cut“ you get a good cut in an easy and simple way (no polishing).

- 1 Small Form-factor Pluggable (SFP) Transceiver MultiSource Agreement (MSA), Cooperation Agreement, Stand 14.09.2000
- 2 Definitions and recommendations of SFP-MSA are not mentioned seperately in the technical data of the transceiver.
- Expanded functions as TxDis, TxFLT, dianostic functions as well as changes and additions from the SFF-8472-specification effective June 2004 are not supported from the transceiver.
- 3 The complete transceiver not yet tested below 0°C, the data are based partly on information given by the manufactures of the components of the transceiver.
- 4 Dispersion of the optical signal due to characteristics of POF. The notification for an error-free connection, a LED, is located in the device, in which the transceiver is inserted. Usual notation: Link, Optical Link, LNK, Optical, FX-SD

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