

PSS SB SUB-D-FO1

Order Number: 311 053



1. Product Description:

The SafetyBUS p FO transceiver converts electrical signals of a SafetyBUS p interface into optical signals. The data transmission is bi-directional, data-transparent, and in half-duplex mode. SafetyBUS p systems with transmission rates up to 500 kBit/s are supported.

The SafetyBUS p FO transceiver can be used for SafetyBUS p devices that provide the supply voltage for the FO transceiver at the plug connector.

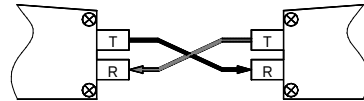
The SafetyBUS p FO transceiver is used with a 50/125µ or 62.5/125µ graded index glass fibre at a wavelength of 850 nm and ST connectors. The optical interface is not necessarily compatible to other FO systems, so the FO transceivers always should be used as a pair.

2. Installation:

Connect the SafetyBUS p FO transceiver to the male 9-pin Sub-D connector of the SafetyBUS p interface. Fasten the fixing screws finger tight. The supply voltage is fed over the SafetyBUS p interface, a maximum of two FO transceivers can be attached to each SafetyBUS p device. Star shaped structures are not permitted.

Connect the fibre optic cable to the ST connector and secure the connector by a quarter turn of the bayonet lock.

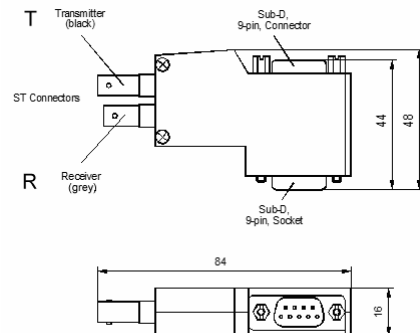
Info! Make sure that both fibres are crossed: The transmitter (T) is connected to the receiver (R), and vice versa.



CAUTION! Eye Protection: The FO transmitter is a laser with invisible radiation of Class 1M.

Class 1M lasers are only dangerous to human skin and eyes when the radiation is focused by optical instruments. According to the regulations for the prevention of accidents UVV VBG 93, lasers of Class 1M may be used without restrictions if looking directly into the laser beam is not intended.

3. Building Up and Measurements:



4. Length of the Main Line:

The maximum length of the main line (that means the distance between the bus subscribers) is reduced by FO lines. Each pair of FO transceivers reduces the maximum length of the main line by 35 m.

The following table shows the permitted length of the main lines as a function of the number of FO lines and the transmission rate.

Transmission Rate in kBit/s	Maximum Length of the Main Line in m			
	no FO Line	1 FO Line	2 FO Lines	n FO Lines
500	95	60	25	-
250	250	215	180	250 – (n x 35)
125	500	465	430	500 – (n x 35)
50	1450	1415	1380	1450 – (n x 35)
20	3500	3465	3430	3500 – (n x 35)

5. Connection Cable:

It is not recommend to connect an electrical cable in addition to one or two FO transceivers, as perfect operation is not guaranteed in special applications. If the application requires an electrical cable to be connected, the cable must be terminated at both ends by the characteristic impedance.

6. Technical Data:

Wavelength	850 nm
Fibre	50/125µ GI or 62,5/125µ GI
Optical Connector	ST (B-FOC)
Maximum Transmission Distance	4000 m (50/125µ) 3400 m (62,5/125µ)
Transfer Rate	10 kBit/s – 500 kBit/s
Operating Voltage	5 V DC (±5%), over Sub-D Connector
Current Consumption	70 mA max.
Pin Assignment	2 CAN-L, 7 CAN-H, 5 Shield, 3 OV/CAN-Gnd, 8 Vcc
PullUp, PullDown	390 Ω each
Terminating Resistor	no
Dimensions	84 x 48 x 16 mm
Operating Temperature	0 to +65 °C
Storage Temperature	-25 to +85 °C
Humidity	10 - 90 % (no condensing)
EMC	CE conform, in accordance with EMC guideline 89/336/EEC