

MICROSENS

Optical Transceiver RS-485

Description and Installation



Order No. MS650321

General Instruction

The MICROSENS RS-485 transceiver facilitates the transmission of standard RS-485 signals over optical fiber.

The use of fiber optics increases the safety of the network, particularly in the industrial environment.

The transceiver allows the coverage of distances of many kilometers.

The transceiver is available with ST*- or SMA-connectors for multimode fibers.

The transceiver supports the various industrial bus systems i.e. Profibus, Bitbus, Interbus-S etc...

Technical Specifications

Type Fiberoptic transceiver for RS-485 (Half-duplex).

Connectors 1 x Sub-D port 9 pin
1 x ST* connector
1 x mains adapter socket 2.1 mm

Fiber type Multi mode fiber 50/125 or 62.5/125 μm , duplex with ST*- or SMA-connectors

max. Fiber length 2 km (62,5 μm fiber)

Wavelength 850 nm

Optical power 45 μW /-13,5 dBm (typ.)

Sensitivity 2 μW /-27 dBm (typ.)

Dynamic range 10,5 dB (typ.)

LED displays Power, Receive, Transmit

Power supply External power supply unit 9 V DC/ 3 VA

Operating temp. 0°C to 55°C

Storage temp. -20°C to 80°C

* ST is a registered trademark of AT&T

Connections

Figure 1 shows the position of the pins of the SUB-D jack of fiberoptical transceiver.

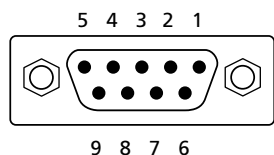


Figure 1: SUB-D connector (9 pins)

Pin	Direction	Description
1		Not connected
2		Not connected
3	Rx+/Tx+	Receiving/Sending pos. data
4		Not connected
5	GND	Ground
6	VCC	+5V (For active termination)
7		Not connected
8	Rx-/Tx	Receiving/Sending neg. data
9		Not connected

The inner conductor of the power supply jack (Figure 2) carries the positive current and the outer conductor is the ground connection.

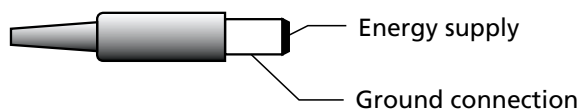


Figure 2: Connector

Tristate Recognition Adjustment

As a result of the fact that the transceiver operates in half-duplex mode, it is necessary to adjust the directional flow of the data of the interface driver, according to whether fiber optical or electrical data is being received.

Fiber optical data is transmitted directly to the electrical interface. If no FO data is received, the electrical driver must be deactivated again (Tristate condition), in order that other Bus users are able to send data.

The time-constant until this adjustment has occurred varies according to the Bus-protocol employed and the transmission rate. It must be less than the minimum interval between successive data-blocks and greater than that between successive zeros within a data-block.

In order to set the time constant the housing must be unscrewed and removed. The DIL-switch inside the housing is used to configure the transceiver.

DIL-Switch Layout

Pin	Name	Description
1	t1	Time constant factor 1
2	t2	Time constant factor 2
3	t3	Time constant factor 3
4	t4	Time constant factor 4
5	res1	For test purposes only (Always 'off')
6	res2	For test purposes only (Always 'off')

The switches 1 to 4 are intended for the adjustment of the time constant. In total there are 16 different possible settings.

t1	t2	t3	t4	Recognition time
on	on	on	on	5.6 μ s
-	on	on	on	100 μ s
on	-	on	on	200 μ s
-	-	on	on	300 μ s
on	on	-	on	400 μ s
-	on	-	on	500 μ s
on	-	-	on	600 μ s
-	-	-	on	700 μ s
on	on	on	-	800 μ s
-	on	on	-	900 μ s
on	-	on	-	1000 μ s
-	-	on	-	1100 μ s
on	on	-	-	1200 μ s
-	on	-	-	1300 μ s
on	-	-	-	1400 μ s

Because of the permanent development of our products, the right to make technical modifications is reserved to us.