MICROSENS	Operating- and Installation-manual for RS-232 Industrial media converter	03.12.02 DH v001

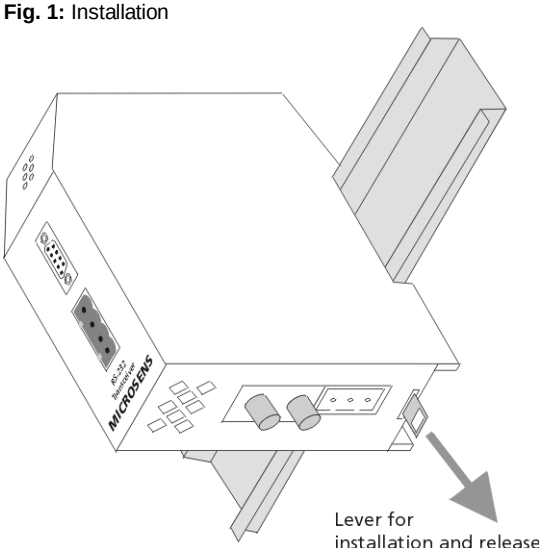
1. General Features

The industrial products distinguish themselves by their robust design. All electrical interfaces are galvanic isolated and protected against over voltage. In spite of this it is necessary to put them proper into operation. Please read the manual completely before starting.
This device is working in full duplex mode to establish point to point connections.

2. Installation

The converter has a solid metal chassis with an integrated holder for DIN rails. For the mounting it is possible to use DIN rails according DIN EN 50 022. The fixation of the device is done by a snap bolt. On the bottom of the device there is a small lever. By pulling this lever the converter can be released from the DIN rail.
If multiple devices are mounted in line, a minimum space of 20 mm should be kept between the devices, to ensure a sufficient heat dissipation.

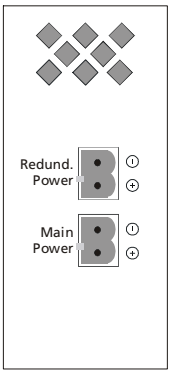
Fig. 1: Installation



3. Power supply

The power supply can be done by two separated screw terminals in the top of the device (see fig. 2). The range of the input voltage is 18 to 60 V DC and is suitable for the connection to standardized 24 V or 48 V power supply systems.
These power inputs are protected against over voltage. The status of the power supplies is indicated by the Power LED.

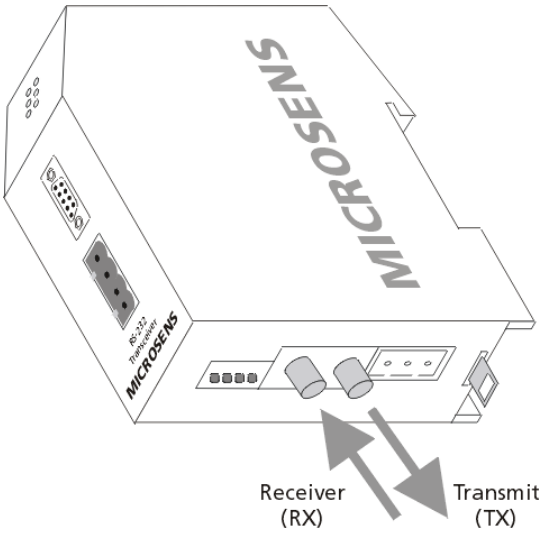
Fig. 2: Connection of the power supply



4. Connection of the fiber port

The fiber port of the converter is located at the bottom of the device. The connection is done with a duplex fiber (multimode) with ST- or SC-connectors. During the installation the transmit port (TX) of the converter must be connected to the receiver (RX) of the device at the opposite side and vice versa.
The logical connection is not static, that mean the connection is only active when data is transmitted. To test the data transfer it is possible to activate "Loobacks". For the fiber side there is the RLoop (Remote-Loop, refer chapter 6 - configuration) DIP switch.

Fig. 3: Connection fiber port



5. Connection of the copper port

This connection is done on the front side of the device. There are two different options for the connection. For the operation it is only allowed to use one of these ports, that means that the parallel use of both is not possible!
For a standard connection the SUB-D9 port can be used. The pinout of this port is described in fig.4. For the field connection the pins of this port are also available on the screw terminal. The description of the pinout at this screw terminal is printed on the device, tight beside the terminal.
To test the connection it is also possible to do a loopback on this side. For this loop there the DIP switch LLoop (Local Loop, refer chapter 6 – configuration) has to be activated.

6. Configuration

On the bottom of the device there are two DIP switches located which can be used for the configuration..

RLoop: Remote-Loop, allows to test the fiber connection. If this switch is activated all data received on the fiber TX port is also transmitted on the fiber (TX) port. In this configuration the alarm relay contact also releases, because there is no data transmission between fiber and copper port.

LLoop: Local-Loop, allows to test the copper connection. If this switch is activated all data received on the copper side is also transmitted on the copper side. In this configuration the alarm relay contact also releases, because there is no data transmission between fiber and copper port.

7. Relay Contact

This contact is released if the local or remote loop is activated, because the device is not ready for operation in this status. Only if the test functions are deactivated again the relay contact changes into the idle state again.
Because the RS-232 transceiver has a dynamic connection (connection active only during data transmission) there is no link monitoring done by the alarm relay contact.

8. LED-displays

The correct operation is confirmed by the integrated LEDs. The function of these LEDs are described in fig. 6.

9. Safety notes

DANGER! - Optical components may radiate laser light.

WARNING: Infrared radiation as used for data transmission within the fiber optic area which, although invisible to the human eye, can nevertheless cause damage.

To avoid damage to the eyes:

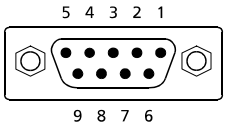
- Never look straight into the output of fiber optic components – danger of blinding!
- Cover all unused optical connections with caps.
- Commission the transmission link only after completing all connections.

The active laser components used with this product comply with the provisions of Laser Class 1.

DANGER! – Conductive parts from Power- and Telecommunication networks can transport dangerous voltage.

To avoid electrical shocks, all installations must be confirm to the required safety standards if the region where they are used.

Fig. 4: Pinout SUB-D9 connector



Pin	Direction	Signal	Description
1	-	-	Unused
2	Output	RxD	Receive data
3	Input	TxD	Transmit data
4	-	-	Unused
5	-	GND	Ground
6	-	-	Unused
7	-	-	Unused
8	-	-	Unused
9	-	-	Unused

Fig. 5: Configuration switches

Switch	Relay Cont.	Description
LLoop	ON: activated	Test of the copper connection. The device is **not** ready for operation!
RLoop	ON: activated	Test of the fiber connection. The device is **not** ready for operation!

Fig. 6: Description on the LED displays

LED	Function
PWR	Power supply O.K., ready for operation.
Alarm	Relay Contact released, Device **not** ready for operation!!
FO Xmt	Fiber optic transmit Data transmitted on the fiber port
FO Rcv	Fiber optic receive Data received on the fiber port
TxD	Transmit Data Data transmitted on the copper port
RxD	Receive Data Data transmitted on the copper port