Media Converter 12 Port 10Base-FL/10Base-T

TELCO / RJ-45 / Single mode 1300 nm

MS416703
MS416706

MICROSENS

Features

The MICROSENS 12 Port Ethernet Media Converter enables the direct repeaterless connection of twisted pair and fiber optical segments in an Ethernet network.

The compact design

It is designed as 19" unit with a mounting height of 1 HU.
All 12 and/or 6 converters and a 230V ac power supply are mounted in the unit.

Main applications are especially in the low-cost conversion of several TP ports in network distribution centers. The flat design permits a high port density in a distribution rack.

Full duplex

The converter supports half as well as full duplex connections. In full-duplex operation it can transfer and receive data simultaneously. The effective data rate increases to 20 Mbps.

Link-Transparency

The Link status of the segment is transmitted by the converter ('Link-Through'), it means that in case of a link failure on the optical side, so no link on the twisted pair side is generated (and vice versa).

Option TELCO / RJ-45

The converter is available both with twelve RJ45 jacks or one TELCO connector on the 10Base-T side.

1300 nm Single mode

The converter is designed with optics for the operation with single mode fibers 1300 nm (ST-connection).

Technical Specifications

Type	The MICROSENS 12 Port Ethernet Media Converter enables the direct repeaterless connection of twisted pair and fiber optical segments in an Ethernet network
Fibre type	Single mode 9/125 µm duplex, ST-connectors
Cable type	Shielded Twisted Pair Kabel, 100 Ohm, Category 5
Data rate	10 Mbps
Opt. power	-24 dBm (min.)
Sensitivity	-32 dBm (min.)
LED displays	4 status / activity indications per port
Power supply	230 V AC, 50 Hz, max. 15 VA
Operating temperature	0°C to 55°C
Storage temperature	-20°C to 80°C
Rel. humidity	5% to 80% non condensing
Dimensions	483 x 32 x 245 mm (w x h x d)

Versions

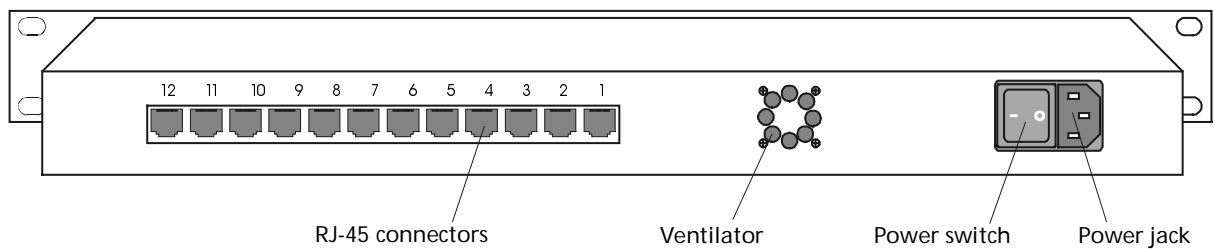| Art.-No	Description	Connectors
MS416706	12 Port Media Converter 10Base-FL/10Base-T RJ-45 / 1300 nm Single mode	24x ST 12x RJ-45 1x power jack
MS416703	12 Port Media Converter 10Base-FL/10Base-T TELCO / 1300 nm Single mode	24x ST 1x TELCO 1x power jack

Connectors
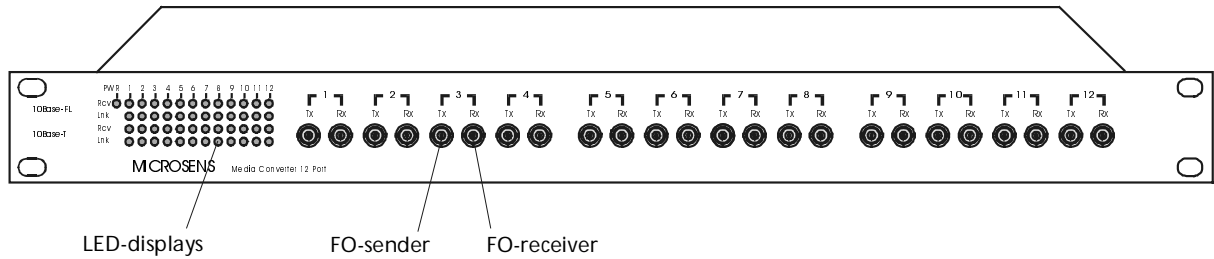
Connectors on the front side
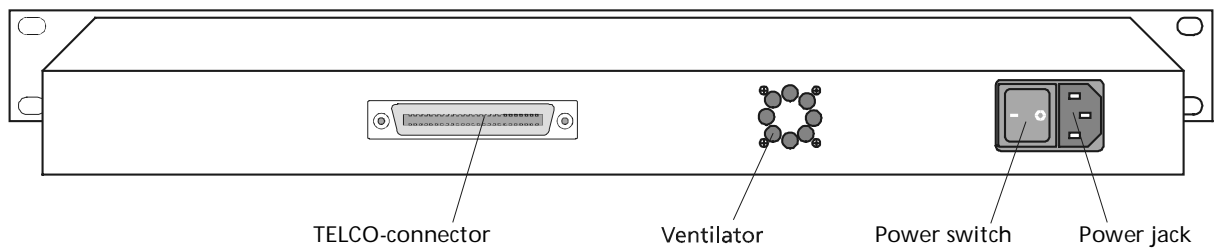
Connections on the back side (TELCO Version)

Connections on the back side (RJ-45 Version)
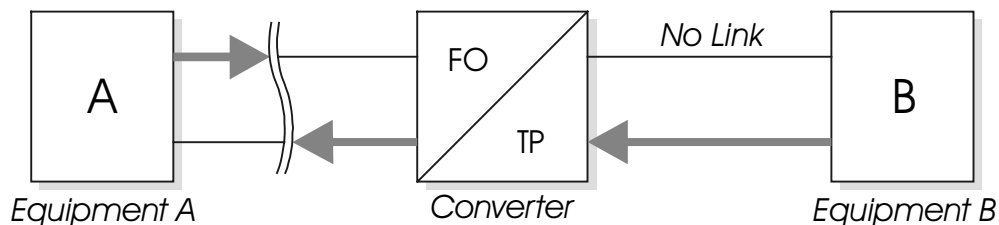
Link-Transparency

The converter transports LINK signal through ("link-Thru"), e.i. if no link is received on the FO side, no link is sent on the TP side (and vice versa).

The converter 'see' the state of the opposite side via the combined equipment. Status information of the net management is not corrupted by the converter.

a) Normal state: Link-signal into both directions

A — Link — FO / TP — Link — B

Equipment A   Converter   Equipment B
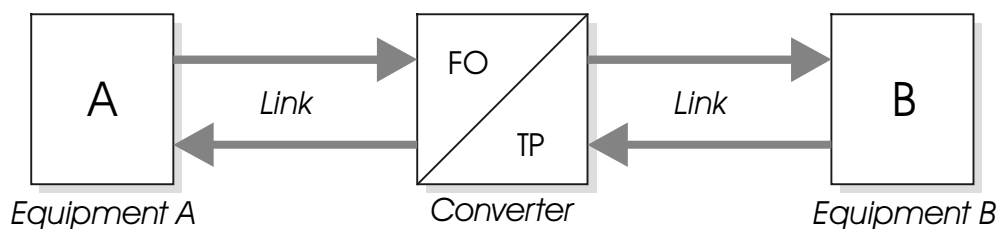
B) Error: interruption of the transmission

A — No Link — FO / TP — B

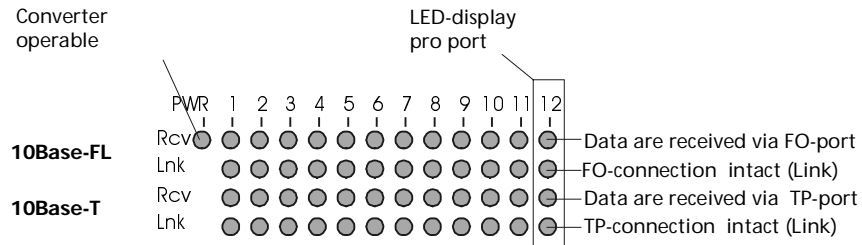Equipment A   Converter   Equipment B

Length reduction

The converter has a signal delay of a maximum 15 bit times. So, the reduction of the segment length can be ignored.
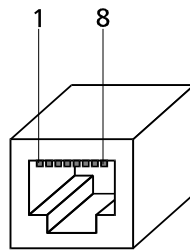
LED-displays

In total 49 LEDs announce the status of the converter. For each port four LEDs signal the link status and the port activities.

Pin assignment (RJ-45 Version)

The RJ45 connector has the assignment of a non-crossed 10Base-T port.

Pin	Direction	Signal
1	out	TD+
2	out	TD-
3	in	RD+
4,5	-	unused
6	in	RD-
7,8	-	unused

- It can be connected in 1:1 patch cable with a hub and / or switch bushing ..

- For the connection to a end device(e.g. PC card or transceiver) a crossed RJ-45 patch cable must be used.

Pin assignment (TELCO Version)

The TELCO connector (50 polarize, feminine) is reserved as follows:
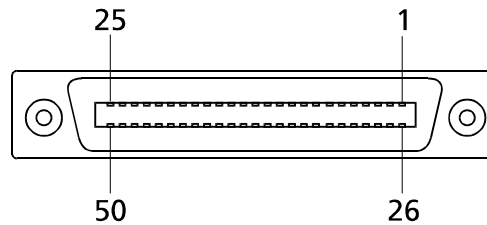
Pin	Direction	Signal
1,26	out	TD1+, TD1-
2,27	in	RD1+, RD1-
3,28	out	TD2+, TD2-
4,29	in	RD2+, RD2-
5,30	out	TD3+, TD3-
6,31	in	RD3+, RD3-
7,32	out	TD4+, TD4-
8,33	in	RD4+, RD4-
9,34	out	TD5+, TD5-
10,35	in	RD5+, RD5-
11,36	out	TD6+, TD6-
12,37	in	RD6+, RD6-
13,38	out	TD7+, TD7-
14,39	in	RD7+, RD7-
15,40	out	TD8+, TD8-
16,41	in	RD8+, RD8-
17,42	out	TD9+, TD9-
18,43	in	RD9+, RD9-
19,44	out	TD10+, TD10-
20,45	in	RD10+, RD10-
21,46	out	TD11+, TD11-
22,47	in	RD11+, RD11-
23,48	out	TD12+, TD12-
24,49	in	RD12+, RD12-

Connection / startup

The equipment is completely ready to use. For initiation, the converter is connected over 230 V power cable by the disconnected power switch with one / 50 Hz adapter connection. The power consum amounts to max.15 VA.
After activation of the power switch, only the Power-LED may light up (provided that no further acting equipment is connected to the net ports).

FO-Connection

FO segments are connected with the ST/SC connectors on the front of the equipment. The fiber optic cable from FO Sender must be connected to the fiber-optic receiver port (legend Rx), and the fiber optic cable from FO Receiver with FO Sender port (legend Tx). If the connection is right and every devices are active, the LED belonging to FO link port must light up on converter.

Caution
If TP connection is not installed at this time / or this is not active, the equipment connected via the FO route announces no link (LINK transparency).

TP- Connection (RJ-45)

TP segments are connected with RJ-45 connector via patch cable. If the converter is connected with a hub or switch (most cases), 1:1 standard patch cable can be used.

If end device ports are connected, crossed patch cable must be used (pair 1,2 to 3,6). If connection is correct and all equipment are active, the TP link LED witch belong to the port, must light up at the converter.

Caution
If FO connection is not installed at this time / or it is not active, the equipment connected via the TP port announces no link (LINK transparency).

TP- Connection (TELCO)

With a 1:1 TELCO cable all twelve ports of the converter can be connected with a corresponding port in a switch or hub.
If connection is correct and all equipment are active, twelve TP link LEDs must light up at the converter.

Caution
If FO connection is not installed at this time / or it is not active, the equipment connected to the TELCO cable announces no link (LINK transparency).