

# Media Converter Module (V2)

## 2 Port 100Base-FX/100Base-TX

**MICROSENS**

### Description

Fast Ethernet media converter for the direct repeaterless coupling of twisted pair and fiber figments in Fast Ethernet networks. Additional the converter has an optional bridge function (10/100Base-TX to 100Base-FX). If required the bridge mode is activated automatically (Auto-Change-Forward function).

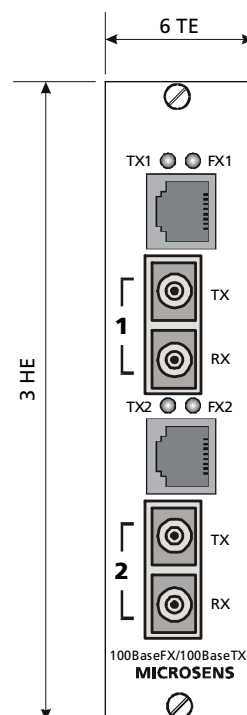
The converter is designed in the form of an insertion card which can be installed in the MICROSENS 19" chassis with a central power unit. A maximum of 18 converters and a power supply unit can be loaded in a case.

The product is particularly interesting for low-cost conversions of several TP ports onto Fiber optic and for the prolongation of TP segments.

The converter supports both half- and full-duplex transmissions.

The use of single mode optic fiber optic transmission makes it possible to cover distances up to 125 km in full-duplex mode.

### Dimensions



## Technical Specifications

<b>Type</b>	2 Port Fast-Ethernet media converter for the coupling of twisted pair (10/100Base-TX) and fiber (100Base-FX) for mounting into the MICROSENS chassis
<b>Fiber type</b>	Multimode 50 or 62,5/125µm optional single mode 9/125µm duplex with ST-/SC-connector
<b>Cable type</b>	Shielded Twisted Pair cable, 100 Ohm, Category 5
<b>Data rate</b>	LWL: 100 Mbps (100Base-FX) TP: 10/100 Mbps (10/100Base-TX)
<b>Mode</b>	Automatic converter/bridge operation (Auto-Change-Forward function)
<b>Opt. power</b>	-19 dBm (1300 nm Multimode min.) -15 dBm (1300 nm single mode min., 15 km version) -5 dBm (1300 nm single mode min., 40 km version)
<b>Sensitivity</b>	-30 dBm (1300 nm Multimode) -31 dBm (1300 nm single mode, 15 km version) -35 dBm (1300 nm single mode, 40 km Version)
<b>Max. distance</b>	full duplex: 2 km (Multimode) 15..40 km (single mode) half duplex: approx. 360 m
<b>LED displays</b>	<i>TX1/2</i> on: TX-connection correct flashing: TX data received <i>FX1/2</i> on: FX-connection correct flashing: FX data received
<b>Power supply</b>	12 V DC / max. 400 mA via backplane
<b>Management</b>	via management module MS416020-B, Firmware V2.1Rev0055 or higher required
<b>Temperature</b>	0°C to 55°C (operation) / -20°C to 80°C (storage)
<b>rel. Humidity</b>	5% to 80% non condensing
<b>Dimensions</b>	3 HE x 6 TE (128 x 31 mm)

## Configuration

For the operation it is possible to configure the converter manually. The configuration can be done by two ways:

1. Mechanically via DIP switches (**DIP switch 8: OFF**)
2. Via software and the network management (DIP switch 8: ON).

Requirement for the configuration via management is the use of the management module (MS416020-B) with the firmware V2.1Rev0055 or higher. The settings of the other DIP switches have no effect then.

The settings made via the management are stored in the flash of the module and remain active even without the management module.

	No.	Description	Position	Function
Converter 1	1	100/10	OFF	Speed Port 1 100 Mbps
			ON	Speed Port 1 10 Mbps
	2	FD/HD	OFF	Full Duplex
			ON	Half Duplex
	3	AU/FOR	OFF	Autonegotiation (The settings of DIP switch 1 and 2 are having no function!)
			ON	Force Speed and Duplex Settings (Operation according to DIP switches 1 and 2)
Konverter 2	4	100/10	OFF	Speed Port 1 100 Mbps
			ON	Speed Port 1 10 Mbps
	5	FD/HD	OFF	Full Duplex
			ON	Half Duplex
	6	AU/FOR	OFF	Autonegotiation (The settings of DIP switch 4 and 5 are having no function!)
			ON	Force Speed and Duplex Settings (Operation according to DIP switches 4 and 5)
Global	7	-/LFPT	OFF	Link Fault Pass Through off
			ON	Link Fault Pass Through on
	8	MAN/SW	OFF	Configuration done via DIP switches
			ON	Configuration done via management module

In factory default settings are all DIP switches off, which are also the software settings. With these setting the TP ports are configured via autonegotiation.

## Length Reduction

### Half duplex segment

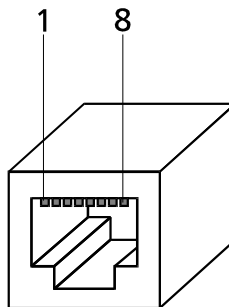
The converter has a maximum signal delay of 50 bit times. As a result, the maximum segment length of 412m is reduced by approx. 50 m for glass fiber.

### Full duplex segment

In Full duplex-segments, the signal delay of the converter has no influence on the maximum segment length.

## Pin out

The RJ45 connector has the assignment of a non-crossed TX port.



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

- The converter can be connected with a 1:1 patch cord to a hub and/or switch port.
- For the connection to an end device (e.g. PC card or transceiver) a crossed RJ45 patch cord must be used.

## Operation

This version of the converter is built in the form of an insertion card, which can be mounted in MICROSENS 19" modular system, with a central PSU. A maximum of 12 converters and the power supply can be mounted into a chassis.

The insertion cards are supplied with power via a central unit and over the backplane. Optionally a second power supply unit can be built-in for redundancy. In this case, 10 converter insertion modules may be used. In case of a partial equipping, the unloaded slots are masked with blank covers.

## Order Information

Art.-No.	Description	Ports
MS416231M-V2	Fast Ethernet media converter module 10/100Base-TX to 100Base-FX, 1300nm Multimode SC, max. 2km	2 x RJ-45 2 x SC-duplex
MS416230M-V2	Fast Ethernet media converter module 10/100Base-TX to 100Base-FX, 1300nm Multimode ST, max. 2km	2 x RJ-45 4 x ST
MS416235M-V2	Fast Ethernet media converter module 10/100Base-TX to 100Base-FX, 1300nm single mode SC, max. 15km	2 x RJ-45 4 x SC-duplex
MS416234M-V2	Fast Ethernet media converter module 10/100Base-TX to 100Base-FX, 1300nm single mode ST, max. 15km	2 x RJ-45 4 x ST
MS416236M-V2	Fast Ethernet media converter module 10/100Base-TX to 100Base-FX, 1300nm single mode SC, max. 40km	2 x RJ-45 4 x SC-duplex

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