Fast Ethernet Media Converter 100Base-FX/100Base-TX

MICROSENS

General

The MICROSENS media converter allows the direct coupling of twisted pair cable (100Base-TX) and multimode or single mode fiber (100Base-FX) in an Ethernet network (IEEE802.3u). In due to this direct coupling it is possible to extend existing twisted pair cables over the limit of 100 m.

The link status of the segment is forwarded by the integrated "Link Through" function, that means in case of missing link on the fiber segment no link is generated on the copper side.

Colour coded LEDs inform about the status of the converter and can be used for network diagnostics..

Technical Data

Type	Ethernet media converter for coupling of Twisted pair (100Base-TX) and fiber (100Base-FX) segments	
Fiber type	Multimode 62,5/125 or 50/125µm, Single mode 9/125µm, duplex	
Cable type	Shielded twisted pair cable, 100 Ohm, Category 5, Pinout of RJ45 connector per switch crossable	
Max. cablelength	100 m	
Datarate	100 Mbit/s	
LED displays	*Power*	Ready for operation
	FX-Link	Fiber link
	FX-Receive	Data received on fiber
	TX-Link	Twisted pair link
	TX-Receive	Data received on twisted pair
	Link-Error	No fiber link, no twisted pair link generated
Power supply	5 V DC / max. 1500 mA via external power supply Connector 2.1 mm jack plug, optional screw connector	
Dimensions	83 x 60 x 21 mm (w x d x h)	
Operating temp.	0°C to 55°C	
Storage temp.	-20°C to 80°C	
Rel. humidity	5% to 80% non condensing	

Optical Parameter

Mulitmode version	*min. distance:*	2 km (full duplex)
	min. power:	-18 dBm
	min. sensitivity:	-31 dBm
	wavelength	1300 nm
	connector:	SC-duplex (MS410640/511)
		ST-duplex (MS410641/512/539)
Single mode version	*min. distance:*	15 km (full duplex)
	min. power:	-11,5 dBm
	min. sensitivity:	-31 dBm
	wavelength	1300 nm
	connector:	SC-duplex (MS410644/513)
		ST-duplex (MS410645/514)
	min. distance:	40 km (full duplex)
	min. power:	-3 dBm
	min. sensitivity:	-38 dBm
	wavelength	1300 nm
	connector:	SC-duplex (MS410646/523)
	min. distance:	80 km (full duplex)
	min. power:	-5 dBm
	min. sensitivity:	-37 dBm
	wavelength	1550 nm
	connector:	SC-duplex (MS410518)
	min. distance:	125 km (full duplex)
	min. power:	1,8 dBm
	min. sensitivity:	-37 dBm
	wavelength	1550 nm
	connector:	SC-duplex (MS410519)

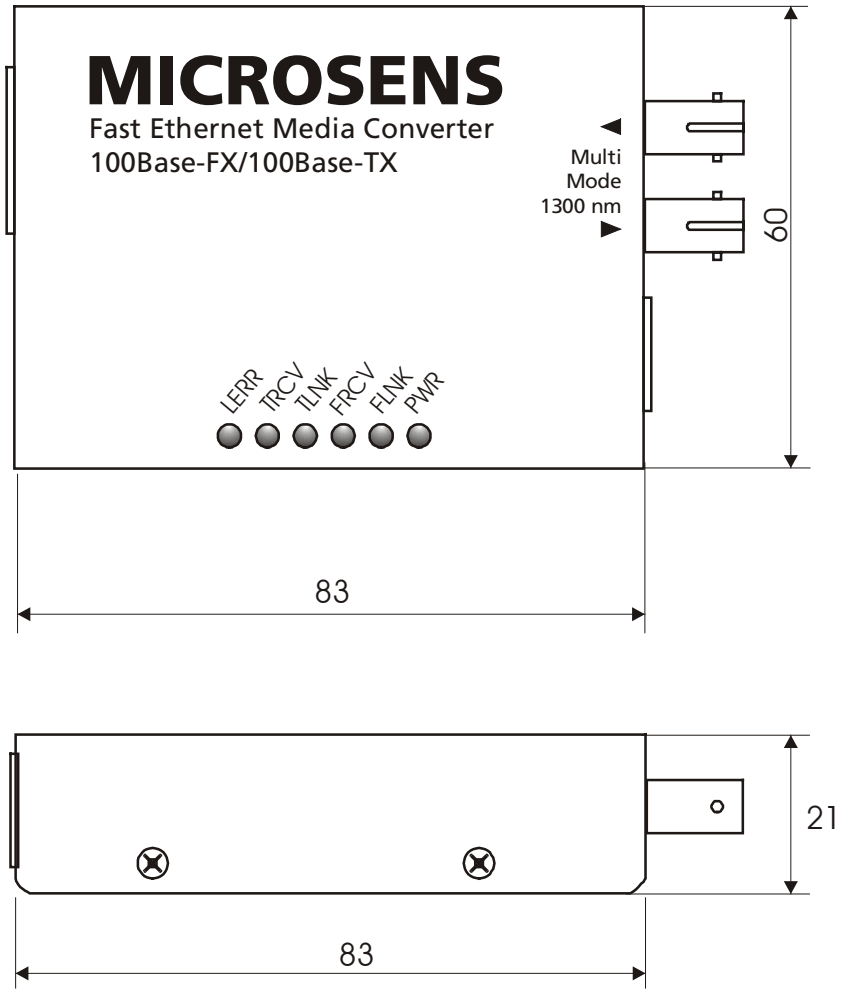
Length reduction

Half duplex segment
The converter has a signal delay of max. 25 bit times. Through this, the maximum segment length of 412 m is reduced about 25 m for fiber and about 30 m for twisted pair cable. This reduction has also to be considered at single mode fiber.

Full duplex segment
In full duplex segments the signal delay has no influence on the maximum segment length.

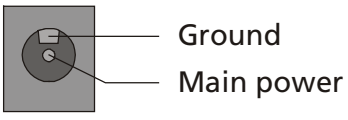
Chassis

The chassis consists of black powder coated steel sheet. The following figure shows the converter in original size.

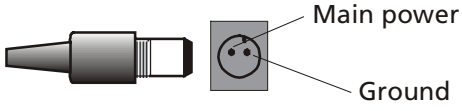


Power supply

The power supply is done via an external power supply 5 V DC / max 1500 mA. Beside the standard 2.1 mm jack plug connector the user can get a screw connector for the power supply. Because of warranty reasons only MICROSENS power supplies can be used.



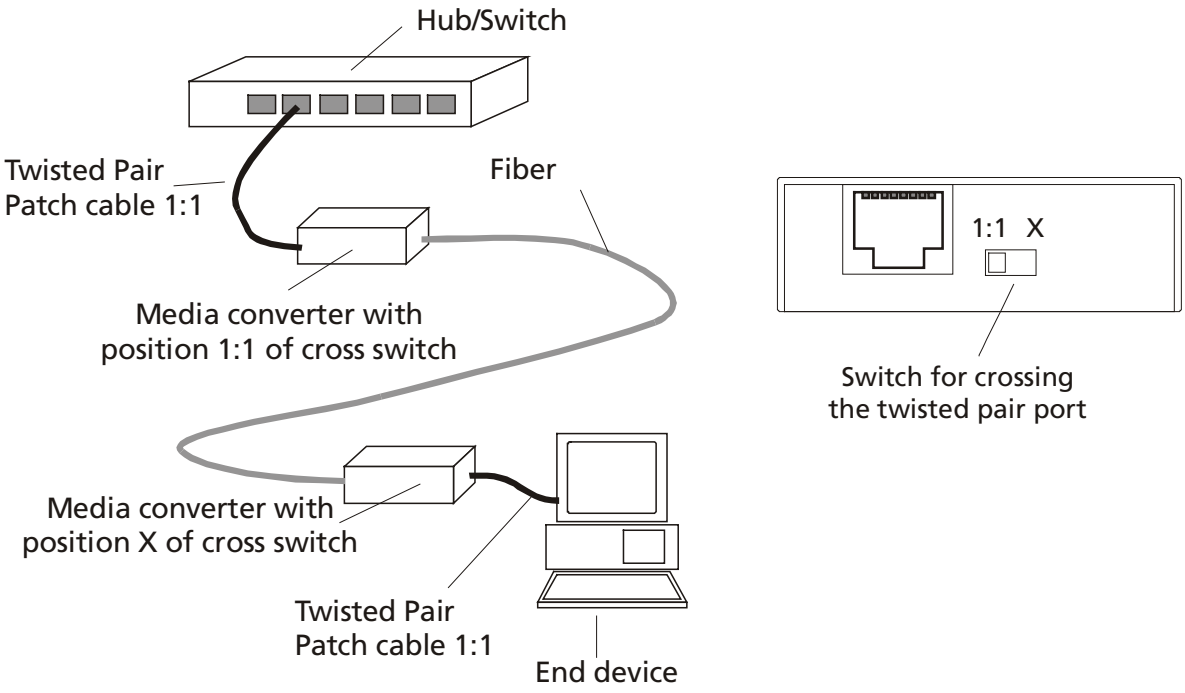
Version with jack plug connector (standard)



Version with screw connector (optional)

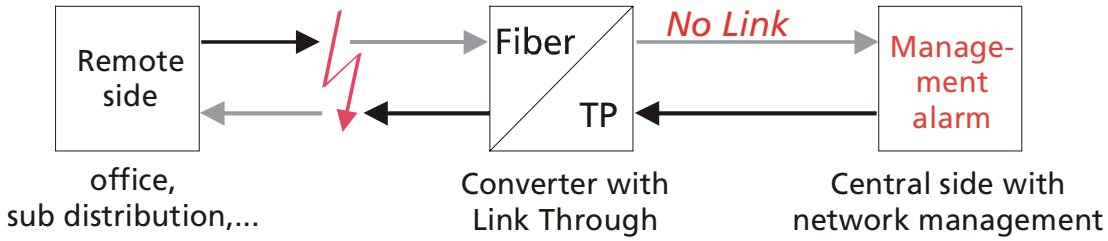
Connections

The connection of the converter to a hub/switch is done with an uncrossed cable. Because the port of the media converter can be crossed by the integrated cross switch, also end devices can be connected with an uncrossed cable.



Link Transparency

The converter has the integrated "Link Through" functionality to support the connection control. The connection status of the fiber segment is forwarded to the twisted pair segment. In due to this the twisted pair connection is switched off in a case of failure at the fiber segment.



Order Information

Part No.	Description	Connectors
MS410640	Media converter 100Base-FX/100Base-TX, 1300 nm multimode, 2 km, incl. power supply (Jack plug)	2 x SC, 1 x RJ45
MS410641	Media converter 100Base-FX/100Base-TX, 1300 nm multimode, 2 km, incl. power supply (Jack plug)	2 x ST, 1 x RJ45
MS410511	Media converter 100Base-FX/100Base-TX, 1300 nm multimode, 2 km, incl. power supply (Screw connector)	2 x SC, 1 x RJ45
MS410512	Media converter 100Base-FX/100Base-TX, 1300 nm multimode, 2 km, incl. power supply (Screw connector)	2 x ST, 1 x RJ45
MS410644	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 15 km, incl. power supply (Jack plug)	2 x SC, 1 x RJ45
MS410645	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 15 km, incl. power supply (Jack plug)	2 x ST, 1 x RJ45
MS410513	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 15 km, incl. power supply (Screw connector)	2 x SC, 1 x RJ45
MS410514	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 15 km, incl. power supply (Screw connector)	2 x ST, 1 x RJ45
MS410646	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 40 km, incl. power supply (Jack plug)	2 x SC, 1 x RJ45
MS410523	Media converter 100Base-FX/100Base-TX, 1300 nm single mode, 40 km, incl. power supply (Screw connector)	2 x SC, 1 x RJ45
MS410518	Media converter 100Base-FX/100Base-TX, 1550 nm single mode, 80 km, incl. power supply (Screw connector)	2 x SC, 1 x RJ45

Part No.	Description	Connectors
MS410519	Media converter 100Base-FX/100Base-TX, 1550 nm single mode, 125 km, incl. power supply (Screw connector)	2 x SC, 1 x RJ45