MICROSENS

Datasheet
Gigabit Ethernet Bridging Converter

General

This Gigabit Ethernet Bridge allows the interlinking of copper-based Ethernet networks via fiber optic connections.

Very long distances can be bridged by the fiber optic link, while at the same time providing an interference-free and galvanically isolated connection.
The integrated 10/100/1000 Mbit/s auto-negotiation function on the copper interface enables the connection of older networks with low data rates.

On the optical side, in addition to versions with integrated fiber optics (SC duplex) for multimode or single mode fibers, a version with SFP slot is available for a wide range of different SFPs. In addition to standard multimode and single mode SFPs for different distances, special fiber optic connections such as CWDM/DWDM can be operated or bidirectional simplex connections can be set up.

The link transparency and the RJ-45 connection can be configured via DIP switch. Colour-coded LEDs indicate the current status of the bridge and can be used for error detection in the network.

Technical Details

|	
Type	Gigabit Ethernet Bridging Converter
Connections	1x 1000Base-SX/LX/X (Connection depending on model) 1x 10/100/1000Base-T
Fiber type	Multimode 62,5/125 or 50/125µm, Singlemode 9/125µm, duplex
Cable type	Shielded Twisted Pair Cable, 100 Ohm, min. Category 5e
Jumbo Frames	9kB
Power Supply	external power supply (5 V DC), incl. in scope of delivery 100..240 VAC, 50/60Hz
Operating temp.	0..+50 °C
Storage temp.	-20..80 °C
Humidity	5% bis 90 % non condensing
Dimensions	70 x 26 x 94 mm (W x H x D)

Layout
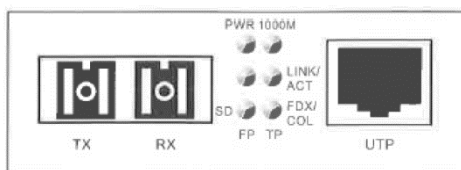
Fig.: front view
(MS400240 / MS400241)
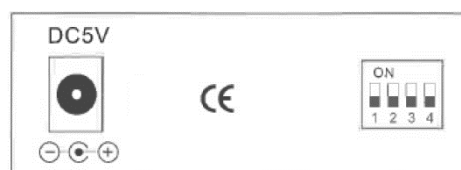
Fig.: Rear view

Optical Parameter

Multimode Model (MS400240)	max. Distance (typ.):	550 m (Vollduplex)
	min. Trans. output:	-8 dBm
	min. Sensitivity:	-19 dBm
	Wavelength	850 nm

| **Singlemode Model (MS400241)**	max. Distance (typ.):	10 km (Vollduplex)
	min. Trans. Output:	-8 dBm
	min. Sensitivity:	-24 dBm
	Wavelength	1310 nm

The optical parameters of the MS400249 model is dependent on the Gigabit Ethernet SFP transceiver used. This allows the creation of further and special parameters and thus routes (e.g. xWDM, simplex or 1550nm long distance routes).

Linktransparency

With the Link Fault Pass Through function, the applied signal status can be passed on transparently. For example, if no link is received on the fiber optic side, no link is generated on the RJ-45 side.
This means that devices connected via the bridge can 'see' the status of the opposite side. Status information from the network management is not distorted by the converter.

a) Normal operation - Link Signal in both directions
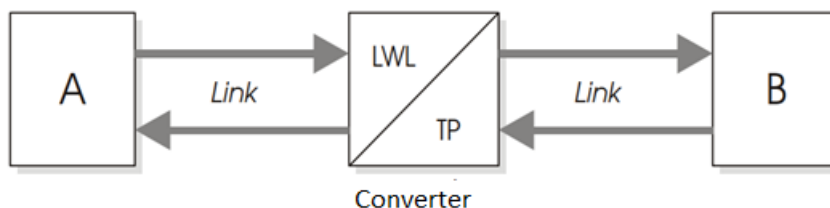
b) Error: interruption of a link
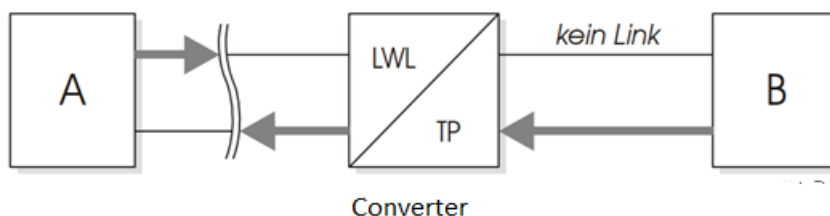
DIP-Switch Configuration

The Gigabit Ethernet Bridging Converter can be manually configured using DIP switches. At delivery all DIP switches are set to "off".

Configurable:
- Operating modes for Link Fault Pass Through (LFP) of both ports
- Operating modes for the RJ-45 connector

DIP-Switch	Status	Function
1	on	LFP on
	off	LFP off
2		*No function*
3	on	RJ-45 to 10MBit/s
	off	10/100/1000Base-T (Autoneg.)
4		*No function*

LED-Displays

LED	Status	Funktion
PWR	on	ready for operation
1000M	on	RJ-45 Connection with 1,000MBit/s
	off	RJ-45-Connection with 10/100MBit/s
LINK/ACT (FX)	on	Connection FO side
	blinking	Activity on the FO connection (data)
	off	no connection FO side
LINK/ACT (TX)	on	Connection RJ-45-side
	blinking	Activity on the RJ-45-Connection (Daten)
	off	No connection RJ-45-side
SD	on	FO signal detected
	off	FO signal not detected
FDX/COL (TX)	on	RJ-45-Connection Vollduplex
	off	RJ-45-Connection Halfduplex

Order information

Gigabit Ethernet Bridging Converter

	Description	Art.-No.
	GbE Desktop Bridging Converter MM 1x 1000SX SC/MM, 1x 10/100/1000T, ext. PS (110/230VAC)	**MS400240**
	GbE Desktop Bridging Converter SM 1x 1000LX SC/SM, 1x 10/100/1000T, ext. PS (110/230VAC)	**MS400241**
	GbE Desktop Bridging Converter SFP 1x 1000X SFP-Slot, 1x 10/100/1000T, ext. PS (110/230VAC)	**MS400249**
	Alternativ Version DIN-Rail	
	GbE Industrial Entry Line Bridge 1x 100/1000X SFP-Slot, 1x 10/100/1000T, DIN-Rail, -40..+75°C, 12..56VDC, 1x RC	**MS657099X**

Accessories for SFP Version

	Description	Art.-No.
	SFP Transceiver (other models available on request)	
	SFP Transceiver, Gigabit Ethernet 850 nm Multimode, 1000Base-SX, LC duplex	**MS100200**
	SFP Transceiver, Gigabit Ethernet 1310 nm Singlemode, 1000Base-LX, LC duplex	**MS100210**
	SFP Transceiver BiDi, Gigabit Ethernet TX: 1310 nm, RX: 1550 nm Singlemode, 1000Base-LX, LC duplex	**MS100221A**
	SFP Transceiver BiDi, Gigabit Ethernet TX: 1550 nm, RX: 1310 nm Singlemode, 1000Base-LX, LC duplex	**MS100221B**