

Fast Ethernet Bridge 10/100Base-TX/100Base-FX

MICROSENS

General

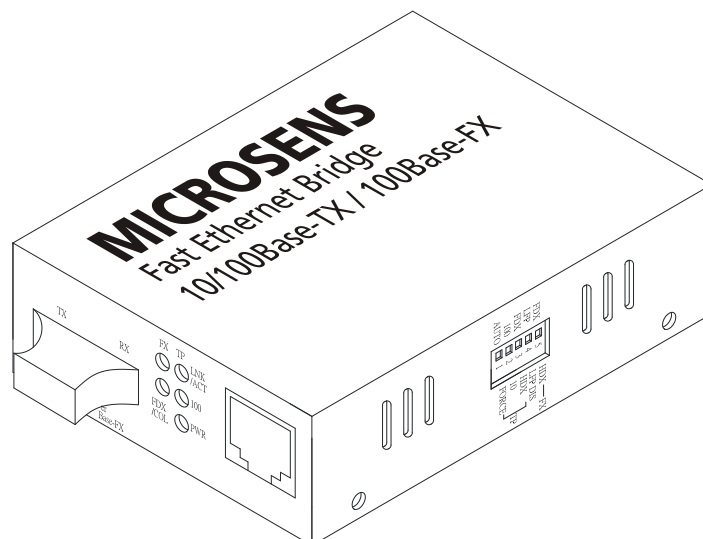
The new Mini Bridge of MICROSENS offers an easy and cost effective integration of 10 Mbit/s Ethernet equipment into modern fiber based Fast Ethernet networks. In addition to the media conversion a speed adjustment is done.

This adjustment includes the 10 and 100 Mbit/s speeds as well as half and full duplex modes. Existing length restrictions for half duplex Ethernet (5 km) and Fast Ethernet segments (412 m) are eliminated by the bridge (segment splitting).

Beside the multimode version there are several single mode versions developed for „Fiber To The Home“ (FTTH) projects. With the standard 10/100Base-TX interface, the end-user can use internet services, Video on Demand and VoIP applications.

Features

- Compact desktop chassis
- Segment splitting and speed adaptation
- Auto-Negotiation 10/100Base-TX
- Half- and full duplex mode manually configurable
- Multimode max. 2 km, ST-/SC-connector
- Single mode versions up to 125 km
- Optional simplex fiber operation (WDM)
- Power Selector (DC power supply or optional self powering cable USB)



Technical data

Type	Fast Ethernet Bridge to connect Twisted-Pair- (10/100Base-TX) and FO (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,	
Max. TP cable length	100 m	
Data rate	100 Mbps	
LED displays	<i>Power</i>	Standby
	<i>FX-Link</i>	FO Link
	<i>FX-FDX</i>	FO Half-/Full duplex
	<i>TX-Link</i>	Twisted Pair-Link
	<i>TX100</i>	Twisted Pair 10/100 Mbit
Power supply	5 V DC / max. 1500 mA ext. power supply or optional self powering cable USB (Power Selector)	
Dimensions	94 x 70.3 x 26.2 mm (B x T x H)	
Operating temperature	0°C to 55°C	
Storage temperature	-20°C to 80°C	
Relative humidity	5% to 80% non condensing.	

Optical parameters

Multimode version	<i>min. FO range:</i>	2 km (Full duplex)
	<i>min. optical power:</i>	-19 dBm
	<i>min. optical sensitivity:</i>	-31 dBm
	<i>Wave-length:</i>	1300 nm
	<i>Connector:</i>	SC (MS400160) ST (MS400161)
Single mode version	<i>min. distance:</i>	15 km (full duplex)
	<i>min. power:</i>	-11,5 dBm
	<i>min. sensitivity:</i>	-31 dBm
	<i>wavelength</i>	1300 nm
	<i>connector:</i>	SC-duplex (MS400162,MS410644/513) ST-duplex (MS400163,MS410645/514)
	<i>min. distance:</i>	40 km (full duplex)
	<i>min. power:</i>	-3 dBm
	<i>min. sensitivity:</i>	-38 dBm
	<i>wavelength</i>	1300 nm
	<i>connector:</i>	SC-duplex (MS410646/523)

<i>min. distance:</i>	80 km (full duplex)
<i>min. power:</i>	-5 dBm
<i>min. sensitivity:</i>	-37 dBm
<i>wavelength</i>	1550 nm
<i>connector:</i>	SC-duplex (MS410518)
<i>min. distance:</i>	125 km (full duplex)
<i>min. power:</i>	1,8 dBm
<i>min. sensitivity:</i>	-37 dBm
<i>wavelength</i>	1550 nm
<i>connector:</i>	SC-duplex (MS410519) <i>min. FO</i>

Single mode WDM	<i>min. FO range:</i>	20 km (Full duplex)
	<i>min. optical budget:</i>	10 dBm
	<i>Wave-length:</i>	1300 nm/1550 nm
	<i>Connector (simplex):</i>	SC (MS400162A/MS400162B)

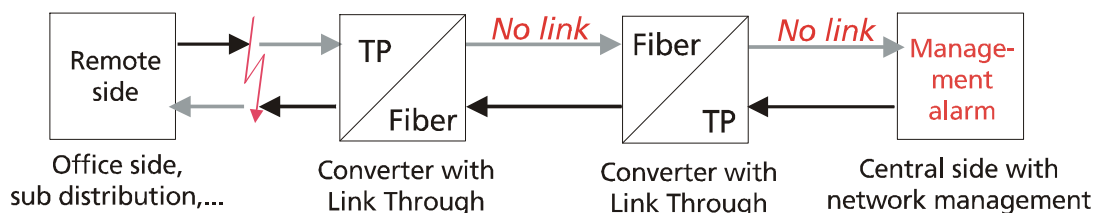
Range reduction

In half duplex mode fiber optic transmission range is 412 m.

Link transparency

This Fast Ethernet bridge supports Link Through (LT) function in TX/FX converter application. The link status on one port is propagated to the other port to notice the remote nodes. If TP port is unplugged, this converter stops transmission on fiber port.

This causes the remote fiber node link to fail. The LEDs show a failure on both, TP and fiber ports. If fiber link fails, this converter restarts autonegotiation on TP port but always stays in the link failure state. This causes the remote TP node link to fail. The LEDs also show the link failure on both, TP and fiber port.



Link Through function only takes effect when switch 4 is set to activated.

Warning: The Link Through function works only when these bridges are used in a pair and both have the link through activated. Furthermore both link through bridges should be supplied by the same manufacturer. Connections coming from old link through bridges or bridges without link through will cease the link through function.

Power supply

The bridge is supplied with an external AC power supply 5 V DC/ max. 1500 mA. Because of warranty reasons it is only allowed to use the original MICROSENS power supply.

Optionally the bridge can be powered by any USB port. For USB power mode a special USB cable is included in the package. With this cable the bridge can be connected to a PC USB port or a USB hub

Configuration

With 5 DIP-switches it is possible to set configuration of main features of the bridge. With switch 1 one can activate or deactivate autonegotiation protocol on copper port. When autonegotiation is deactivated switches 2 and 3 select speed (10 or 100 Mbit/s) and mode (full or half duplex) .

Fiber optic port speed is always 100Mbit (switch 5 selects half/full duplex mode) . Switch 4 can activate or deactivate Link Through function.

Order information

Article no.	Description	Connectors
MS400160	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, 1310 nm Multimode, 2 km	2 x SC 1 x RJ-45
MS400161	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, 1310 nm Multimode, 2 km	2 x ST 1 x RJ-45
MS400162	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, 1310 nm Single mode, 15 km	2 x SC 1 x RJ-45
MS400162A MS400162B	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, WDM, 1310/1550 nm Single mode simplex	SC simplex 1 x RJ-45
MS400163	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, 1310 nm Single mode, 15 km	2 x ST 1 x RJ-45
MS400164	Fast Ethernet Bridge 10/100Base-TX/100Base-FX, 1310 nm Single mode, 40 km	2 x SC 1 x RJ-45
MS400168	Mini Bridge 1x10/100Base-TX, 1x100Base-FX, Single Mode 1550nm min. 80km	2x SC 1 x RJ-45
MS400169	Mini Bridge 1x10/100Base-TX, 1x100Base-FX, Single Mode 1550nm min. 125km	2x SC 1 x RJ-45

To set up WDM transmission, MS400162A must be used in pair with MS400162B, or optionally with other device (look out for wavelength).

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