

Entry Line

MICROSENS

Industrial Fast Ethernet Bridging Converter 1x 10/100Base-TX, 1x 100Base-FX

General

The IP protocol has already left the in-house environment and is going to take all remaining communication areas. Industrial Ethernet already is an established idea, describing the reliable use of Ethernet components in harsh environments.

Because of the large number of these applications the market requires simple and also reliable and cost effective products. With the new Industrial Ethernet Entry Line MICROSENS fulfils these requirements. The products are very compact and include:

- 5 and 8 port Fast Ethernet Switches
- 8 Port Gigabit Ethernet Switch
- Switches with fiber-uplink
- Media Converter for Fast Ethernet and Gigabit Ethernet
- Device Server for the conversion of serial interfaces (RS-232/422/485) to IP.

All new devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New developments are focusing on increasing the port numbers and further implementation of Gigabit Ethernet.



Fig. 1: Entry Line Fast Ethernet Media Converter

Benefits

System Interface/Performance

- RJ-45 port support Auto MDI/MDI-X Function
- Auto Negotiation Speed, Half/Full Duplex
- Store-and-Forward Switching Architecture
- Link Trough Transparency

Power Supply

- Wide Range Redundant Power Design
- Power Polarity Reverse Protection
- Overload Current Removable Fuse Present
- Power-Fault-Alarm Relay Contact

Chassis/Installation

- IP-30 Protection
- DIN-Rail and Wall Mount Design

Safety

- Provides surge protection 3000 VDC for power line
- Supports 4000 VDC Ethernet ESD protection

Standard Compliance

IEEE Standards

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-TX/100Base-FX
- IEEE802.3x Flow Control and Back Pressure

Technical specifications

Type	Fast Ethernet Media Converter for industrial use
Fiber type	Multimode 62,5/125 ~ 50/125um, Single mode 9/125um, duplex
Cable type	Shielded Twisted Pair cable, 100 Ohm, Category 5, Pin out RJ45-ports auto crossing
Data rate	10 and 100 Mbps
LED displays	Per unit: Power1 (green), Power2 (green), Fault (red) Fiber Link: Link/Activity (green), Half/Full Duplex (yellow) TX: Link/Active (green), 10/100M (yellow)
DIP Switch	DIP Switch 1: ON: Enables Port /Power Alarm OFF: Disables Port /Power Alarm DIP Switch 2: ON: Enables LT (Link Through) OFF: Disables LT (Link Through) DIP Switch 3: ON: 100Base-FX Half-duplex mode OFF: 100Base-FX Full-duplex mode DIP Switch 4: ON: Converter Mode (100TX to 100FX) OFF: Switching Mode
Mounting	35 mm DIN-Rail, according DIN EN 50 022 and wall mount
Power supply	12 - 48 VDC / connections with screw terminals, redundant ports
Dimensions	30 x 95 x 140 mm (w x d x h)
Operating temperature	-10°C to 60°C
Storage temperature	-40°C to 85°C
Rel. humidity	5% to 95% non condensing
EMI	FCC Class A, CE EN61000-4-2, CE EN61000-4-3, CE EN-61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8, CE EN61000-4-11, CE EN61000-4-12, CE EN61000-6-2, CE EN61000-6-4
Safety	UL, cUL, CE/EN60950-1
Stability Testing	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)

Twisted Pair Connections

The integrated auto-crossing function of the Twisted-Pair ports makes the use of crossed patch cables unnecessary. The converter automatically detects the pin out of the connected cable and adapts the port accordingly. For all connections standard 1:1 Twisted Pair cables can be used.

The Autonegotiation mechanism detects automatically the speed and transmission mode (full or half duplex) between connected ports. A manual configuration is possible by the DIP switches.

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.

Mounting

The Industrial converter supports two mounting methods: Wall & DIN-Rail.

Wall-mounting

The industrial converter can be wall-mounted by using the included mounting kit.

1. First, use the screws included in the package to combine the Industrial converter and metal mounting kit and remove the DIN-Rail adapter.

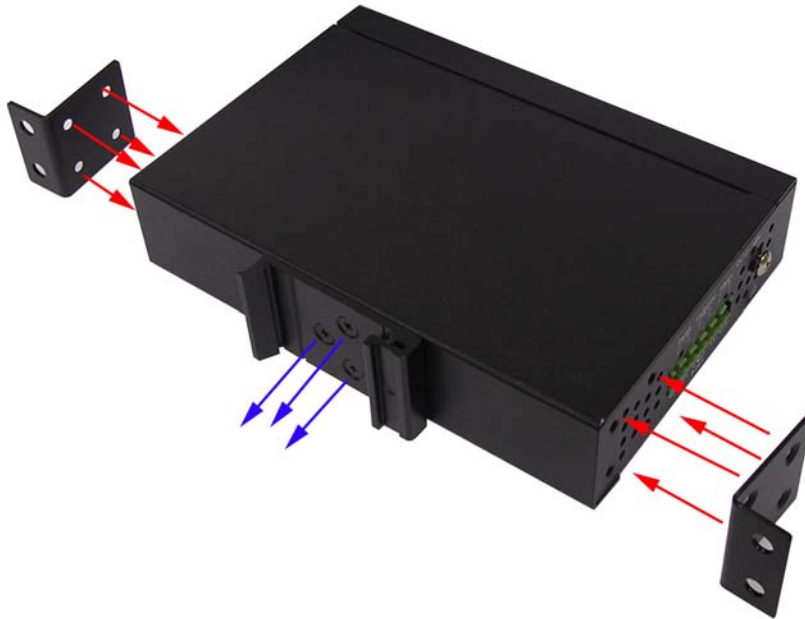


Fig. 2: DIN-Rail holder and Wall Brackets

2. Then fix the converter with some screws to the wall.

DIN-Rail Mounting

You can also mount Industrial converter on a standard DIN-Rail by below steps.

The DIN-Rail kit is screwed on the industrial converter at delivery. If the DIN-Rail kit is not screwed on the industrial converter, please screw the DIN-Rail kit on the converter first.

1. First, hang the Industrial converter to the DIN-Rail with angle of inclination.



Fig. 3: Installation to DIN-Rail Step 1

2. Then, lightly push the DIN-Rail into the track.



Fig. 4: Installation to DIN-Rail Step 2

3. Check if the DIN-Rail is tightened on the track or not.
4. To remove the industrial converter from the track, reverse steps above.

Power supply / Alarm Contact

The power supply is done by an external power supply with an output voltage of 12 - 48 V DC. The power supply unit is not included at delivery, but can be ordered separately (e.g. MS700420 24 V DC/24 W). The connection is done by the pluggable screw terminals on the top of the device. The connection of a redundant power supply can be done by the second screw terminal. In the following drawing the pin out of the power connector and the alarm contact is described.

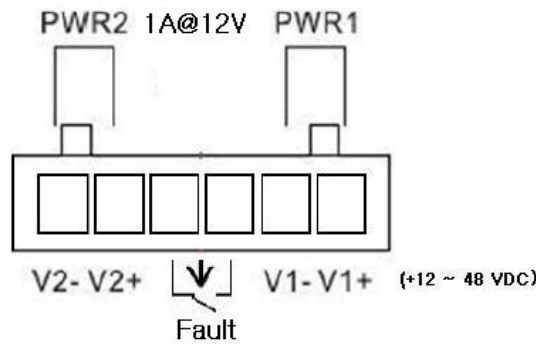


Fig. 5: Pin out Power Connector and Alarm Contact

The alarm contact is normally closed and opens if power input 1 or 2 fails.

Fiber Connections

The 1x 10/100TX + 1x 100FX Industrial Converter has the SC type fiber port using in multimode (2Km) or single mode (30Km). When you connect the fiber port to another one, please follow the below figure to connect it. Wrong connection will not allow the port to work normally.

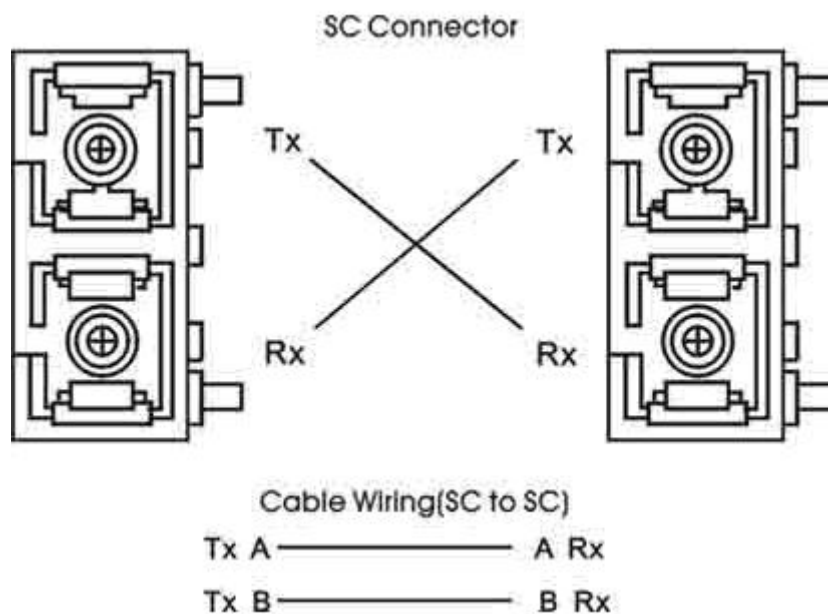


Fig. 6: Connecting the Fiber Ports

Safety Notes

WARNING: Infrared radiation as used for data transmission within the fiber optic, although invisible to the human eye, can nevertheless cause damage.

To avoid damage to the eyes:

- never look straight into the output of fiber optic components – danger of blinding!
- cover all unused optical connections with caps.
- commission the transmission link only after completing all connections.

The active laser components used with this product comply with the provisions of **Laser Class 1**.

DANGER: Conductive components of power and telecommunications networks can carry dangerously high voltage.

To avoid electric shock:

- Do not carry out installation or maintenance work during lightning storms.
- All electric installations must be carried out in accordance with local regulations.

Order Information

Art.-No.	Description	Connectors
MS655060	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX Multimode 1310nm SC	1x SC duplex 1x RJ-45
MS655062	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX Single Mode 1310nm SC	1x SC duplex 1x RJ-45

Accessories

Art.-No.	Description	Connectors
MS700420	DIN-Rail power supply 24 Watt 24 V / 1.0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	DIN-Rail power supply 60 Watt 24 V / 2.5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	DIN-Rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700434	DC/DC DIN-Rail power supply 24 Watt 24 V / 1.0 A, wide range input 18-75 V DC	In: 3-pin Out: 2-pin

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