

## Product Overview

### Ethernet/Fast Ethernet Media Converter in industrial design



## Description

In addition to being deployed in local networks, Ethernet is spreading increasingly across production environments. Modern machine control systems and industrial plants are already equipped with 10/100Base-TX interfaces.

Production environments can also benefit from flexible media conversion by employing fibre optics as they are insensitive against electromagnetic interference and do not suffer from galvanic separation, enable longer transmission distances, and are highly reliable. However, deployment of fibre optics for such as active hubs, switches, and media converters in office environments is fundamentally different from the deployment in production environments where fast initialisation, high robustness and availability, as well as fail safe operation are required. For this extremely demanding environment, MICROSENS has developed special media converters in industrial designs.

The existing product range of Ethernet (10Base-FL/10Base-T) and Fast Ethernet (100Base-FX/100Base-TX) media converters has been complemented with new media converters for serial interfaces in production environments and RS-232/V.24, RS-422/V.11 and RS-485 copper/fibre optics converters.

## Properties

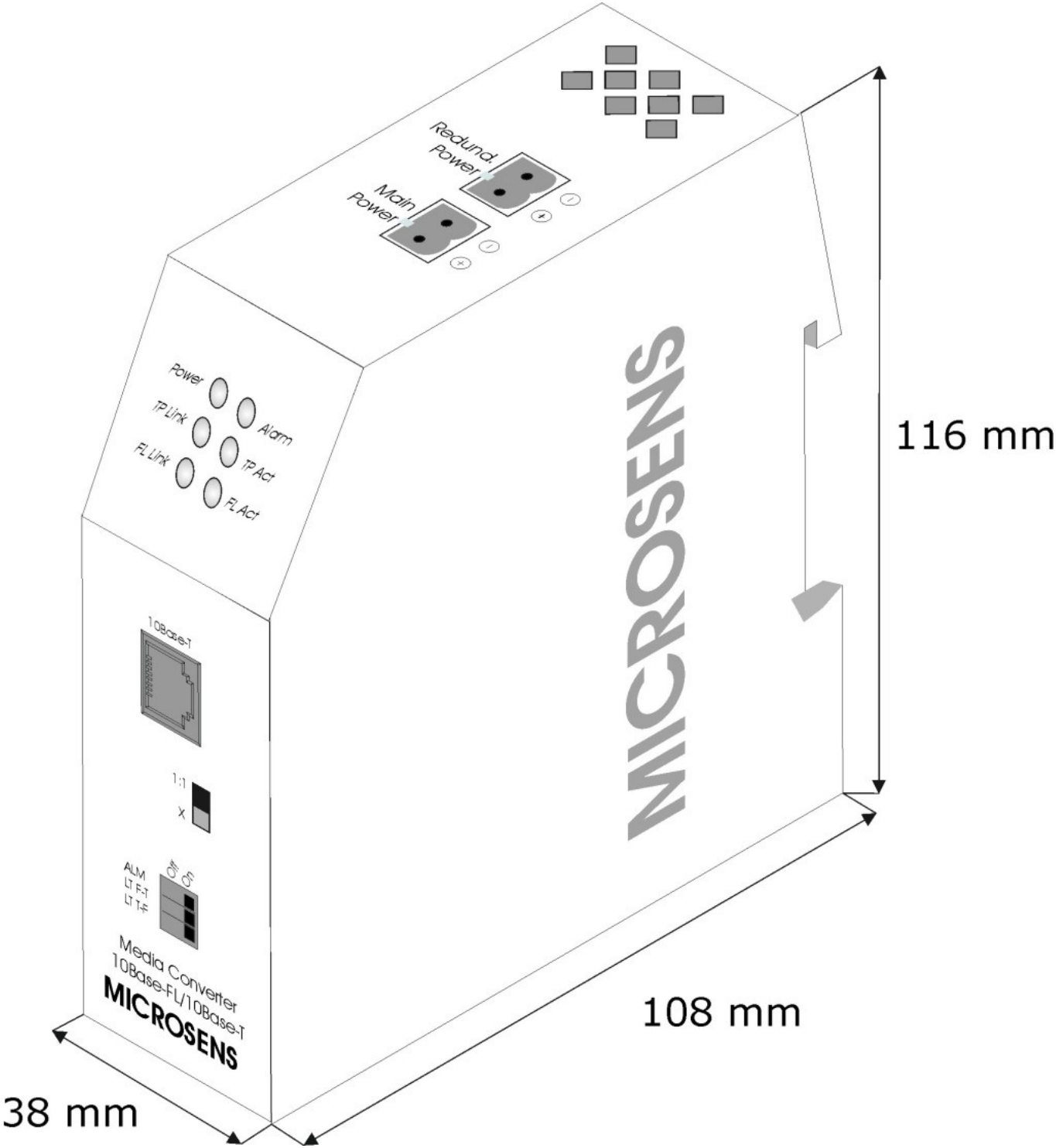
- Robust media converter for Fast Ethernet (100 Mbps) and Ethernet (10 Mbps)
- Transparent conversion of the data
- External alarm contacts
- Connection for redundant power supply
- Effective overvoltage protection

An integrated mounting device allows the direct installation on 35mm hat rails.

The components are driven by a 24V DC power supply. A second mains terminal can be used for redundant power supply. The Ethernet converters have a switch for reversing the port input of the RJ-45 connector. Therefore, the 100Base-TX copper connection can be carried out via common 1:1 patch cables. In addition to the SUBD-9 connection, the serial converters also have parallel terminals for flexible bus installation. Floating contacts are another option. Messaging systems can be connected via special terminals in order to indicate connection failures and trigger certain actions.

The fibre optic connector is located on the underside of the device. This ensures protection of the optical transceiver against dust and contamination.

**Dimensions**



# Specifications

## General

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**Type** Ethernet / Fast Ethernet media converter for industrial use

## Local Ports (other)

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**Number of Ports** 1  
**Type** Alarm-Contact  
**Connector** 3 pin screw connector  
**Pinout** opened/closed (NO/NC)

## Display

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**Type** 6 LEDs  
**Power** green: Ready for operation  
**Link** FX-Link: Fiber link  
FX-Act: Data traffic on fiber  
TX-Link: Twisted Pair link  
TX-Act: Data traffic on Twisted Pair  
**Status** Alarm: Link interrupted

## Power Supply (DC)

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**Input Voltage** 18 - 36 V DC / max. 500 mA redundant connector  
**Connector** 2 x 2 pin screw clamp

## Mechanical

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**Dimensions** 38 mm x 108 mm x 116 mm (B x T x H)  
**Weight** 725 g  
**Mounting** DIN rail  
**Protection class** IP 30

## Local Ports (Twisted-Pair)

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**Number of Ports** 1  
**Type** Fast Ethernet, dual speed 10/100Base-TX  
**Connector** RJ-45 jack, shielded  
**Cable Type** Twisted-Pair cable, category 5e, impedance 100 Ohm, length max. 100 m

## Uplink (Fixed Optical Transceiver)

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**Number of Ports** 1  
**Type** Fast Ethernet  
Multimode: 100Base-FX  
Single Mode: 100Base-FX  
**Connector** ST or SC duplex  
**Fiber Cable Type** Multimode: 50 or 62.5/125 µm fiber  
Single Mode: 9/125 µm fiber, duplex  
**Distance** Multimode: 2000 m  
Single Mode: 15 km, 40 km, other distances on request actual distance may depend on fiber performance  
**Output Optical Power** Multimode 1310 nm: -19 dBm  
Single Mode 1300nm 15 km: -15 dB  
Single Mode 1300nm 40 km: -5 dB  
**Receiver Sensitivity** Multimode 1310 nm: -31 dBm  
Single Mode 1300nm 15 km: -31 dB  
Single Mode 1300nm 40 km: -34 dB

## Control Panel

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**DIP Switch** 4 DIP-Switches:  
- duplex mode (FD/HD)  
- advanced link monitor (on/off)  
- Link through TX (on/off)  
- Link through FX (on/off)

## Environment

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**Operating Temperature** -20..60°C  
**Storage Temperature** -20..80°C  
**Relative Humidity** 5..90% non condensing

## Reliability

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<b>MTBF</b>	500.000 h
<b>Method</b>	calculated, MIL-HDBK-217F

## Packaging

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<b>Standard</b>	1x Ethernet Media Converter 2x screw terminals 1x Quick Installation Guide
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## Standards Compliance

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<b>IEEE (Ethernet)</b>	802.3 10Base-T Ethernet 802.3u 100Base-TX/ FX
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## Additional Features

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<b>Software</b>	To avoid unnoticed interruption in Fiber or Ethernet segment the media converter have an integrated "Link Through" functionality which is forwarding the link status from one segment to the other.
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## Order Information

<b>Description</b>	<b>Article Number</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Multimode 1300 nm	<b>MS650420</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Multimode 1300 nm	<b>MS650421</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Single Mode 1310nm 15km	<b>MS650424</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Single Mode 1310nm 15km ST	<b>MS650425</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Single Mode 1310nm 40km SC	<b>MS650426</b>
Industrial Converter Fast Ethernet 100Base-FX/100Base-TX Single Mode 1310nm 40km ST	<b>MS650427</b>
Industrial Converter Ethernet 10Base-FL/10Base-T Multimode 850 nm (Link Through can not be switched off!)	<b>MS650400-T</b>
Industrial Converter Ethernet 10Base-FL/10Base-T Single Mode 1300 nm (Link Through can not be switched off!)	<b>MS650405-T</b>

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