

# Manageable 6 Port Desktop Switch with PoE (5x10/100Base-TX) and fiber uplink (1x100Base-FX) **MICROSENS**

## General

The MICROSENS Desktop Switch enables the connection of 5 end devices via twisted pair cable, from which four also can be supplied with PoE. The additional fiber port allows the direct connection to a fiber optics segment.

### Power-over-Ethernet integrated

With the Power-over-Ethernet (PoE) standard IEEE802.3af it is possible to supply data and power to the connected end device over the twisted-pair cable. An additional power supply for the end device is not necessary.

### Comprehensive Management

The integrated management agent allows the complete configuration, monitoring and administration of all devices in the network with a powerful software packet, the **MICROSENS Device Manager**. Additional features such as VLAN, Data Prioritization (QoS) and Power-over-Ethernet can be assigned individually.

The firmware update enables to use additional features (e.g. Authentication, SNMP, Telnet, etc), without changing the hardware.

## Features

- Fan-less Fast Ethernet mini switch
- Integrated network management agent via PC-Tool, Web, SNMP- and Telnet-Interface
- 6 ports: 1x fiber optics-uplink 100Base-FX, half/full- duplex mode, 4x RJ-45 10/100Base-TX half/full- duplex mode with PoE, 1x 10/100Base-TX down-link
- Full autonegotiation functionality of the twisted pair ports for the detection of the speed 10/100 Mbps and half/full duplex mode
- Layer 2 non-blocking switching, store-and-forward, 2048 MAC addresses, 1 MBit RAM
- Configuration of each port for speed (10/100 Mb), half/full-duplex mode and autonegotiation (on/off), Auto MDI/MDI-X
- Data prioritisation (Class of Service, CoS) via 4 chaining, port based prioritisation, packet based prioritisation IEEE802.1p/Q (VLAN-Tag), IP TOS-field (DiffServ. Codepoints)
- Port based VLANs according IEEE802.1Q

## View

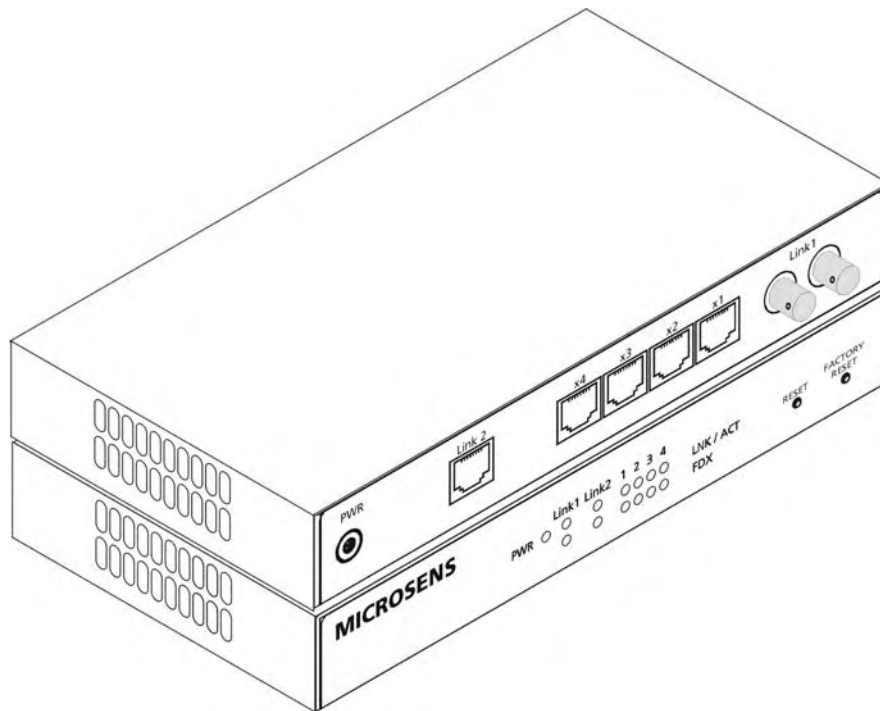


Fig. 1: Front and back side

## Performance Overview

### Management:

Integrated high-performance processor 32 bit, firmware-update via TFTP or Device Manager software

Supporting all relevant protocols

- Device Manager central management platform, 2 user levels with password
- SNMP/traps. Up to 16 traps to 8 receiver, 2 user levels via communities
- Telnet, Cisco compatible syntax, 2 user levels with password
- HTTP (web based) graphically interface, 2 user levels with password
- TFTP central upload of firmware-updates
- SYSLOG storage of event logfiles on external SYSLOG server

### Central Management Platform - MICROSENS Device Manager 3.x Software:

#### **Efficient graphical user interface**

Simple and efficient handling of single devices, device groups or networks, automation of routine runs, e. g. devices detection, configuration and firmware-update.

Network safety:**Safety of access due to the authentication according IEEE Std. 802.1X**

Authentication of username and password by RADIUS server,

Independent authentication from up to 4 users and one port (Multi-User Authentication),

Alternatively authentication from up to 4 users per port on the basis of the MAC-adresses

Voice-over-IP optimization:**Special switch design for VoIP-telephony in all ranges**

Multi-User Authentication per port, an authenticated VoIP-phone presents no security leak

Power supply of the connected phone over PoE with enhanced power management and port for emergency call-phone, hybrid-VLAN mode for the simultaneously failure-free operation of a VoIP-phone and one PC at the same switch port

VoIP quality of service manufacturer independent guaranteed by configurable classification on OSI Layer 3, 2 and 1 (IP DiffServ/TrafficClass, VLAN prioritisation and hardware)

Power-over-Ethernet**Fully implementation of the IEEE 802.3af standard**

Full 15.4 W power on all ports, all classes (class 0..4) will be supported

Permanent monitoring of the electrical parameters and instantly power shut-down while exceeding the limit

Extended power management

Operation at power supplies with limited power

- Limitation of the maximum class per port
- Limitation of the maximum taken power per port
- Limitation of the maximum absorbed power of the whole device
- Port 1 always stays active for emergency operation (emergency call-phone)

## Power Supply

The power supply is done by an external power supply. The power supply unit is not included in the delivery. The connection is done with a special screw type connector. Because of the warranty regulations it is only allowed to use the delivered MICROSENS power supply.

The connection of the power supply is done with the following screw type connector (see fig. 2).

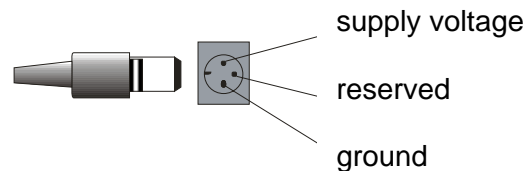


Fig. 2: Connection of the power supply

## Wall Mounting

The MICROSENS mini switch is designed as a desktop unit. With the delivered wall mounting bracket it is very easy to mount this desktop switch onto the wall.

For a better visibility the LED's are showing to the top. The cable connections are showing to the bottom side to ensure a kink free connection.

## Switch Reset

The switch is equipped with two reset push buttons (see fig. 2). With the first push button (RESET) the switch can manually resetted during the operation. Releasing the push button erases the memory and re-initialises all connections.

Resetting the installation switch does not affect the network management. Information like the TCP/IP address, switch configuration etc. is stored in a non-volatile memory.

The reset push button has an another function. Pressing the Reset push button for approximately 5 seconds will issue a management agent IP-request in case of the installation switch is network management enabled. In this way a new or first-time IP-address can be allocated.

With a second reset push button (FACTORY RESET) the settings of the switch for Cos, PoE, hardware configuration and VLAN will be restored to factory defaults. Thus the fault configurations, especially VLAN-settings which could lead to a non-reaching of the agent can be deleted. Network management parameters like e. g. the TCP/IP address are not affected.

## Technical Specifications

<b>Type</b>	Fast Ethernet mini switch with 100Base-FX uplink, 4x 10/100Base-TX with PoE, 10/100Base-TX down-link						
<b>Cable Type</b>	Shielded-Twisted-Pair Cable, 100Ω, Category 5 with RJ45 Plug						
<b>Max. Cable Length</b>	100 m (Twisted-Pair)						
<b>Optical Fiber Type</b>	Multimode optical fiber 50 or 62.5/125 μm, duplex, with ST- or SC-connector, optional 9/125 μm Single mode fiber						
<b>Data Transmission Rate</b>	TP: 10 or 100 Mbps Optical fiber: 100 Mbps						
<b>LED Indicators</b>	<table> <tr> <td><i>POWER</i></td> <td>green: stand by</td> </tr> <tr> <td><i>LINK/ACT</i></td> <td>green/luminous: Link on port green/flashing: Data transmission</td> </tr> <tr> <td><i>HDX/FDX</i></td> <td>off: Port with half duplex mode green: Port with full duplex mode</td> </tr> </table>	<i>POWER</i>	green: stand by	<i>LINK/ACT</i>	green/luminous: Link on port green/flashing: Data transmission	<i>HDX/FDX</i>	off: Port with half duplex mode green: Port with full duplex mode
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<i>HDX/FDX</i>	off: Port with half duplex mode green: Port with full duplex mode						
<b>Power Supply</b>	external power supply with 48V DC output (not included in delivery!)						
<b>Operating Temperature</b>	0°C to 50°C						
<b>Storage Temperature</b>	-20°C to 85°C						
<b>Relative Humidity</b>	5% to 80% non condensing						
<b>PoE</b>	Integrated controller according IEEE 802.3af, max. 15.4 W per port						

## Optical Parameters

<b>Multimode</b>	<i>min. distance:</i>	2 km (full duplex)
	<i>Output power:</i>	-19 dBm
	<i>Sensitivity:</i>	-31 dBm
	<i>Wavelength:</i>	1300 nm
<b>Single Mode</b>	<i>min. distance:</i>	15 km (full duplex)
	<i>Output power:</i>	-15 dBm
	<i>Sensitivity:</i>	-31 dBm
	<i>Wavelength:</i>	1300 nm
	<i>min. distance:</i>	40 km (full duplex)
	<i>Output power:</i>	-5 dBm
	<i>Sensitivity:</i>	-34 dBm
	<i>Wavelength:</i>	1300 nm

## Safety Notes

### **DANGER! Optical components can emit invisible laser radiation.**

**ATTENTION:** Infrared light as it is used for data transmission on optical fibres is not visible to the human eye, but nevertheless may cause severe damage.

In order to prevent any eye damage:

- Never look into the output of optical fibres or components - risk of severe eye damage!
- Apply protective caps to all unused optical ports.
- Do not start system operation prior to completing all wiring.

Active laser components employed in this system comply with laser safety class 1.

## Ordering Information

Art.-No.	Description	Connectors
MS453082PM-48	6 Port Desktop Switch with PoE 5x 10/100Base-TX, 1x 100Base-FX Multimode 1310nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE on 4 TX ports, 48V	5x RJ45 1x SC-duplex 1x 48V DC jack
MS453083PM-48	6 Port Desktop Switch with PoE 5 x 10/100Base-TX, 1 x 100Base-FX Single mode 1310nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE on 4 TX Ports, 48V	5x RJ45 1x SC-duplex 1x 48V DC jack

## Accessories

Art.-No.	Description	Connectors
MS200150	Device Manager PC-Software V3.x MICROSENS Switch Management (CD-ROM)	
MS700674B	Power supply 48 VDC/1,25 A 60 W, Output (DC): srewable connector, Input (230VAC): euro power cord	1x 230V AC 1x 48V DC
MS700675B	Power supply 48 VDC/1,25 A 65 W, Output (DC): srewable connector, Input (230VAC): euro power cord	1x 230V AC 1x 48V DC

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