

Installation Switch with PoE (5x10/100Base-TX) and fiber uplink (1x100Base-FX)

MICROSENS

General

The MICROSENS Installation Switch enables the connection of 5 end devices via twisted pair cable which also can be supplied with PoE. The 5th port is like the fiber port sideways at the switch and is e. g. to be suited for cascading further switches. The fiber port allows the direct connection to a fiber optic segment.

Easy Installation

Due to the tool-less snap-in mounting the installation of the switches is made very easy and fast. With this most compact system available on the market, the compatibility to the most common manufacturers of building installation systems is given.

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 10/100 Mbps Installation Switch according IEEE802.3 Layer 2 non-blocking switch, wire speed forwarding, store-and-forward, max. 2024 MAC addresses, auto learning and aging, Full Duplex Frame according IEEE802.3x
- Integrated network management agent via Device Manager Software, Web, SNMP- and Telnet-Interface
- 6 ports: 1x fiber optic-uplink 100Base-FX, half/full- duplex mode, 5x RJ-45 10/100Base-TX half/full- duplex mode with PoE
- 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 (Quality of Service, QoS) with 4 queues, port based prioritisation, packet based prioritisation IEEE802.1p/Q (VLAN-Tag), IP TOS-field (DiffServ. Codepoints)
- Port based VLANs according IEEE802.1Q

View

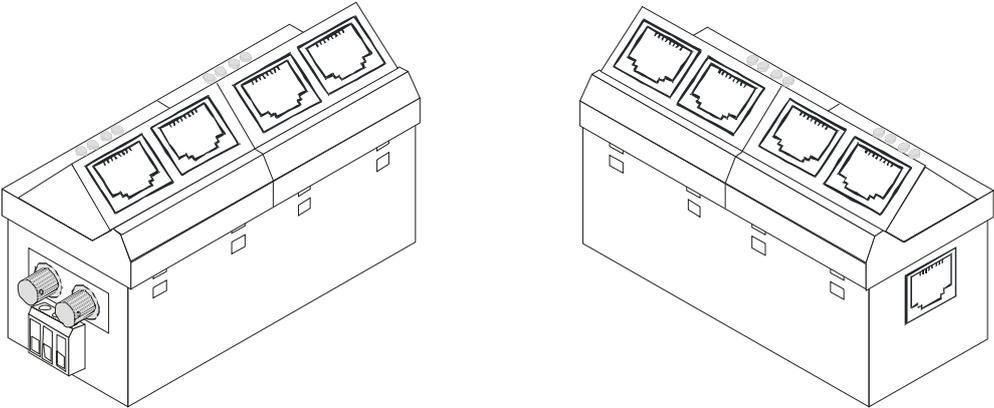


Fig. 1

Dimensions

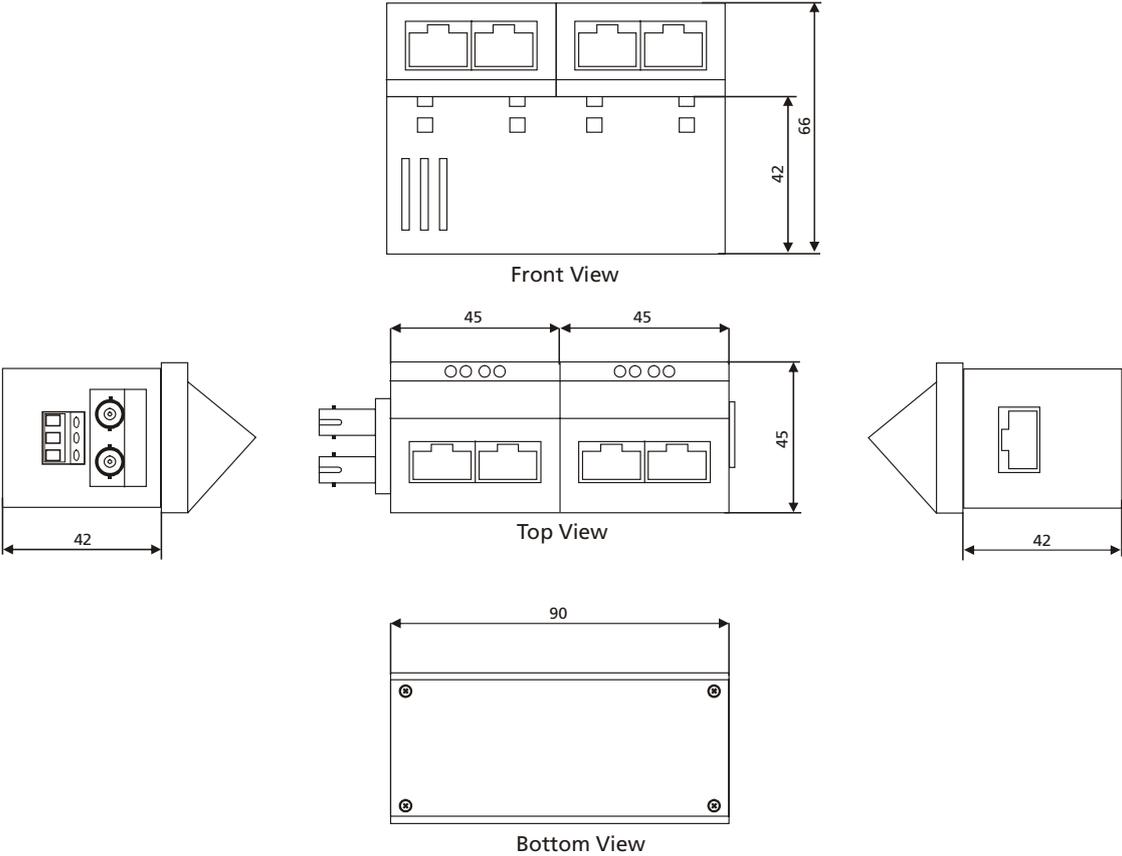


Fig. 2

Performance Overview

Management:

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

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

Network security:

Secure access with 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-addresses.

Voice-over-IP optimization:

Special switch design for VoIP-telephony in all ranges

Multi-user authentication per port, an authenticated VoIP-phone generates no security problem.

Power supply of the connected phone over PoE with enhanced power management and a 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.

Service independent quality of service by prioritisation on OSI Layer 3, 2 and 1 (IP DiffServ/TrafficClass, VLAN prioritisation and hardware).

Power-over-Ethernet:

Full implementation of the IEEE 802.3af standard

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

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

Extended power managementm integrated.

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 Supplies

The 48 V power supply is realized by an external power supply. The power supply unit is not included in the delivery. The switch can be supported via a central 48 V source or locally via 48 V power supplies. MICROSENS offers a wide range of different power supplies (see accessories).

Switch Reset

The switch is equipped with two reset push buttons (see fig. 2). With the first push button (RESET) the switch can manually reset 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 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

Type	Fast Ethernet Installation Switch with 100Base-FX uplink, 5x 10/100Base-TX with PoE		
Cable Type	Shielded-Twisted-Pair Cable, 100Ω, Category 5 with RJ45 plug		
Max. Cable Length	100 m (Twisted-Pair)		
Optical Fiber Fype	Multimode optical fiber 50 or 62.5/125 μm, duplex, with ST- or SC-connector, optional 9/125 μm single mode fiber		
Data Rate	TP: 10 or 100 Mbps Optical fiber: 100 Mbps		
LED Displays	<i>ON</i>	ready for operation	
	<i>LO</i>	on:	link on fiber port
		flashing:	data transmission via fiber port
	<i>FD</i>	off:	fiber connection half duplex
		flashing:	collisions in half duplex mode
		on:	fiber port full duplex
	<i>per TP-Port 1..5:</i>		
	<i>Ln</i>	on:	link on Port <i>n</i>
		flashing:	data transmission via port <i>n</i>
Power Supply	external power supply with 48V DC output (not included in delivery!)		
Operating Temperature	0°C to 50°C		
Storage Temperature	-20°C to 85°C		
Relative Humidity	5% to 80% non condensing		
PoE	Integrated controller according IEEE 802.3af, max. 15.4 W per port, overall max. 65 W		

Optical Parameters

Multimode Version	<i>min. distance:</i>	2 km (full duplex)
	<i>Output power:</i>	-19 dBm
	<i>Sensitivity:</i>	-31 dBm
	<i>Wavelength:</i>	1300 nm
Single Mode Versions	<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
MS450330PM-48	6 Port Installation Switch, horizontal mounting, 1x 100Base-FX, multimode 1310 nm ST, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x ST-duplex 1x 48 V DC
MS450331PM-48	6 Port Installation Switch, horizontal mounting 1x 100Base-FX, multimode 1310 nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x SC-duplex 1x 48 V DC
MS450332PM-48	6 Port Installation Switch, horizontal mounting 1x 100Base-FX, single mode 1310 nm ST, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x ST-duplex 1x 48 V DC
MS450333PM-48	6 Port Installation Switch, horizontal mounting 1x 100Base-FX, single mode 1310 nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x SC-duplex 1x 48 V DC
MS450340PM-48	6 Port Installation Switch, vertical mounting 1x 100Base-FX, multimode 1310 nm ST, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x ST-duplex 1x 48 V DC
MS450341PM-48	6 Port Installation Switch, vertical mounting 1x 100Base-FX, multimode 1310 nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x SC-duplex 1x 48 V DC
MS450342PM-48	6 Port Installation Switch, vertical mounting 1x 100Base-FX, single mode 1310 nm ST, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x ST-duplex 1x 48 V DC
MS450343PM-48	6 Port Installation Switch, vertical mounting 1x 100Base-FX, single mode 1310 nm SC, SNMP/Web/CLI Management, VLAN, QoS, PoE, 48V	5x RJ45 1x SC-duplex 1x 48 V DC

Accessories

Art.-No.	Description	Connectors
MS200150	Device Manager PC-Software V3.x MICROSENS Switch Management (CD-ROM)	
MS700675	Power supply, input: 230V, output: 48V/1,35A 65W for Power-over-Ethernet switch, power cord small unit	1x 230 V AC 1x 48 V DC
MS700674	Power supply, input: 230V, output: 48V/1,35A 60W for Power-over-Ethernet switch, power cord small unit	1x 230 V AC 1x 48 V DC

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