Fast Ethernet
5 Port Mini Switch

MICROSENS

General

The MICROSENS mini switch offers the connection of four end devices via twisted pair cable. An additional fiber uplink port (100Base-FX) is for the connection to the central distribution.

The mini switch has a very compact design. Especially in the end device area the use of this mini switch is very cost effective, this makes him very useful for small workgroups.

The RJ-45 ports are selecting the speed of the connected device (10/100 autonegotiation) automatically. Due to its auto crossing function the switch recognizes the pin out of the TX port, which allows to use always standard patch cables.

The fiber optic uplink port for the connection to the central distribution is working with 100 Mbps and can be used in half or full duplex mode, depending on the requirements. Using single mode fiber it is possible to cover distances up to 100 km.

This desktop version can be mounted onto walls with the optional available wall mount bracket. Further models are designed for the installation into cable trunks and sub floor systems.

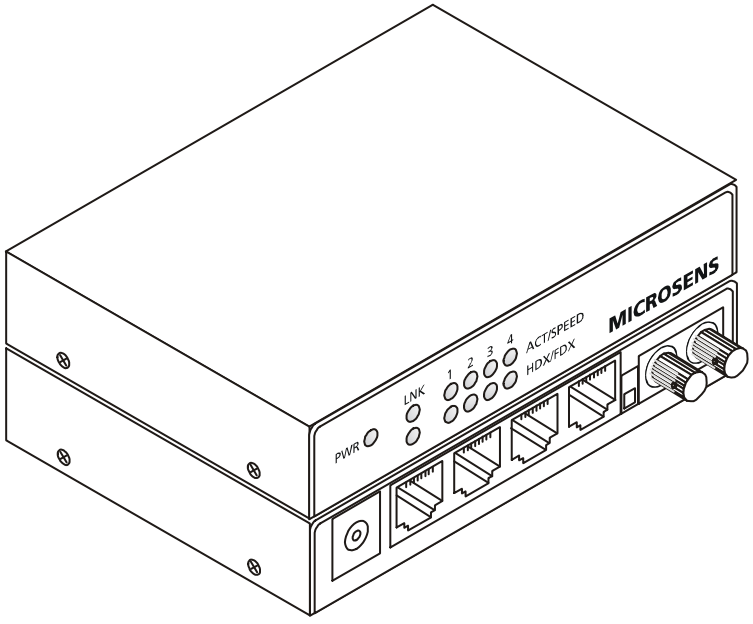


Fig.: Mini 5 Port Switch, front and – back view

Technical Specifications

Type	Fast Ethernet Mini Switch 4 x 10/100Base-TX with 100Base-FX Uplink	
Fiber type	Multimode 62,5/125 or 50/125µm, Single mode 9/125µm, duplex	
Cable type	Shielded Twisted Pair cable, 100 Ohm, Category 5, Pin out RJ45-port auto crossing	
Data rate	10 or 100 Mbps	
LED displays	*Power*	Ready for operation
	Link	Link status per Port
	Act	Data traffic per Port
	Speed	10 or 100 Mbps of the twisted pair ports
	FDX/HDX	Half- or full duplex transmission per Port
Installation	Desktop switch, wall mounting optional	
Power supply	External power supply, Voltage printed on the device (Power Supply included at delivery)	
Dimensions	114 x 21 x 80 mm (w x h x d)	
Operating temp.	0°C to 55°C	
Storage temp.	-20°C to 85°C	
Rel. humidity	5% to 80% non condensing.	

Optical Parameter

Multimode	*Min. distance:*	2 km (full duplex)
	Opt. power:	-18 dBm
	Sensitivity:	-31 dBm
	Wavelength:	1300 nm
Single mode	*Min. distance:*	15 km (full duplex)
	Opt. power:	- 15 dBm
	Sensitivity:	- 31 dBm
	Wavelength:	1300 nm
	Min. distance:	40 km (full duplex)
	Opt. power:	- 3 dBm
	Sensitivity:	- 38 dBm
	Wavelength:	1300 nm

Features

The switch has a non blocking architecture and is working with the store and forward procedure. For data storage the switch has an integrated memory of 1 Mbit.

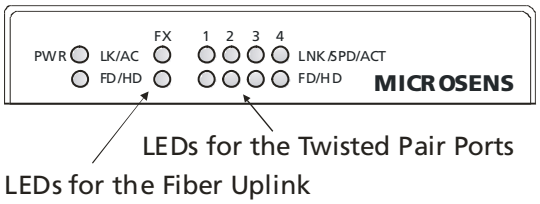
The MAC address handling is done by the integrated address management. The switch can store up to 1024 MAC addresses. A Mac address is stored after receiving a valid data packet. Five to ten minutes after receiving the last packet the related address is deleted (aging).

Connections

Due to the integrated auto crossing feature a separation of 1:1 and crossed patch cables is no longer necessary. The switch detects the pin out automatically and configures itself according. The offers to connect end devices and to cascade switches with the same patch cable.

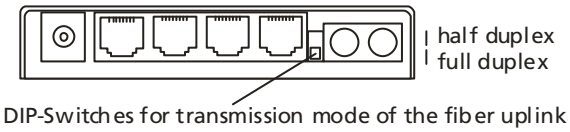
Transmission Speed

The twisted pair ports are configuring them selves to the maximum possible speed. The LEDs are showing the selected speed.



If the Act/Speed LEDs are lightning green, a Fast Ethernet (100 Mbps) connection is established. For an Ethernet (10 Mbps) connection theses LEDs are yellow. The fiber uplink is a pure 100Base-FX port. The link detection is indicated by a green LED.

The transmission in full duplex mode is indicated by the related LED. If the connection is established in half duplex mode the related LED is flashing. The transmission mode of the fiber uplink port is configured with the DIP switches. It has to be considered that distances over 412 m can be reached only in full duplex mode. To activate the full duplex mode the DIP switch must be in the top position.



Power Supply

The power supply is done by an external power supply. This power supply is included at delivery. Because of warranty reasons only the MICROSENS power supplies have to be used. Attention, in order to avoid damages the voltage shown on the switch and the power supply must be the same!

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.

With the optional available DIN rail holder it is possible to mount the switch on 35 mm hat rails.

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.

Order Information

Art.-No.	Description	Connectors
MS453071	5 Port Mini-Switch, 4x 10/100Base-TX, 1x 100Base-FX, Multimode 1300 nm	2x ST, 4x RJ-45, Power Supply
MS453072	5 Port Mini-Switch, 4x 10/100Base-TX, 1x 100Base-FX, Multimode 1300 nm	2x SC, 4x RJ-45, Power Supply
MS453073	5 Port Mini-Switch, 4x 10/100Base-TX, 1x 100Base-FX, single mode 1300 nm, min. 15 km	2x SC, 4x RJ-45, Power Supply
MS453075	5 Port Mini-Switch, 4x 10/100Base-TX, 1x 100Base-FX, single mode 1300 nm, min. 40 km	2x SC, 4x RJ-45, Power Supply
MS453073A MS453073B	5 Port Mini-Switch, 4x 10/100Base-TX, 1x 100Base-FX, WDM single mode simplex	1x SC, 4x RJ-45, Power Supply