Product Overview

MICROSENS

Gigabit Ethernet Micro Switch 6 Port Generation 6

Description

The 6 port GBE Micro Switch Generation 6 constitutes an extension of the Gigabit Ethernet Micro Switch. In addition to the 1000Base-X fiber optic uplink, for linking to the central distributor, this switch has an additional RJ-45 downlink 10/100/1000Base-T.

This additional connection is positioned at the rear of the switch and is also covered after the installation. This additional connection can, amongst other things, be used for cascading other Micro Switches in order to obtain additional connection capacities. The interconnection of two switches via the TP port offers to increase the reliability of the network. If one fiber connection is interrupted the neighbouring switch handles the data traffic via RSTP.
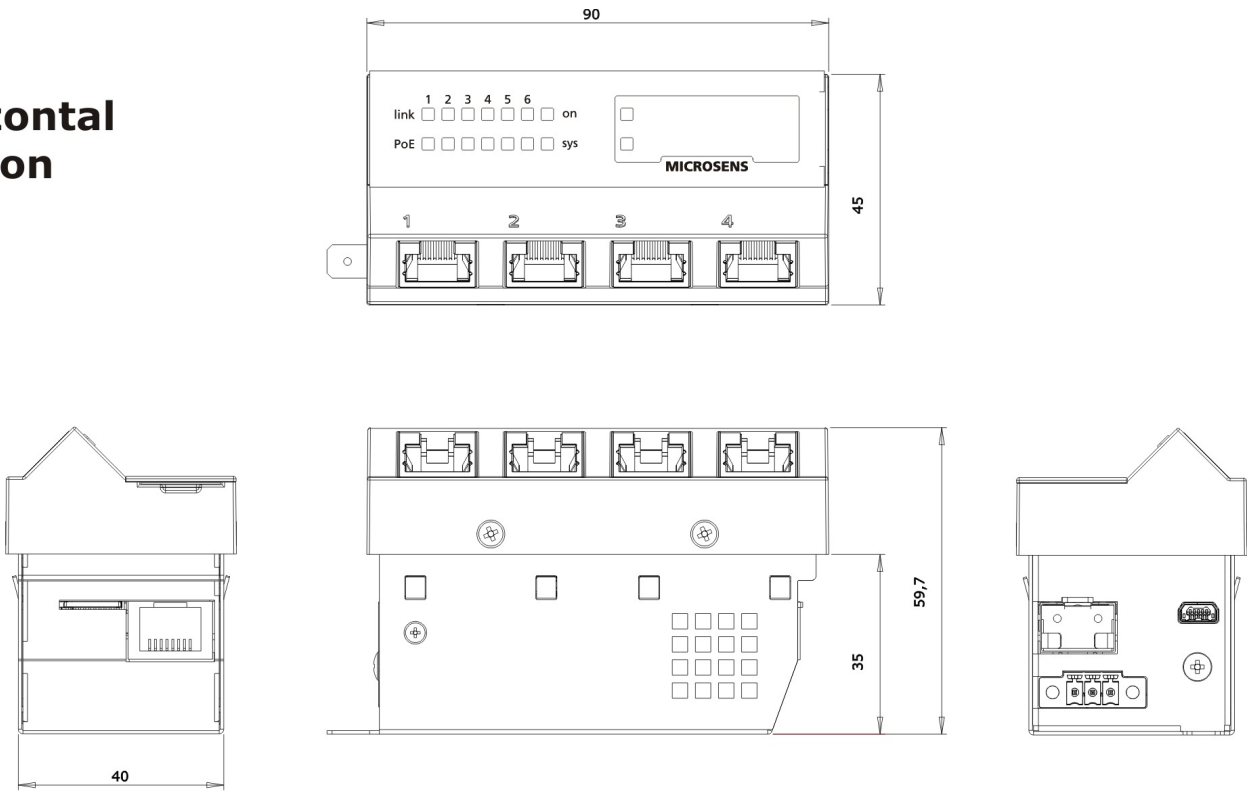
A powerful Linux-OS offers additional services and feature for future use. The use of memory-card shortens maintenance and service windows. Intelligent power management monitors the active current consumption of connected end equipment. The switches are powered by an external 230V AC.
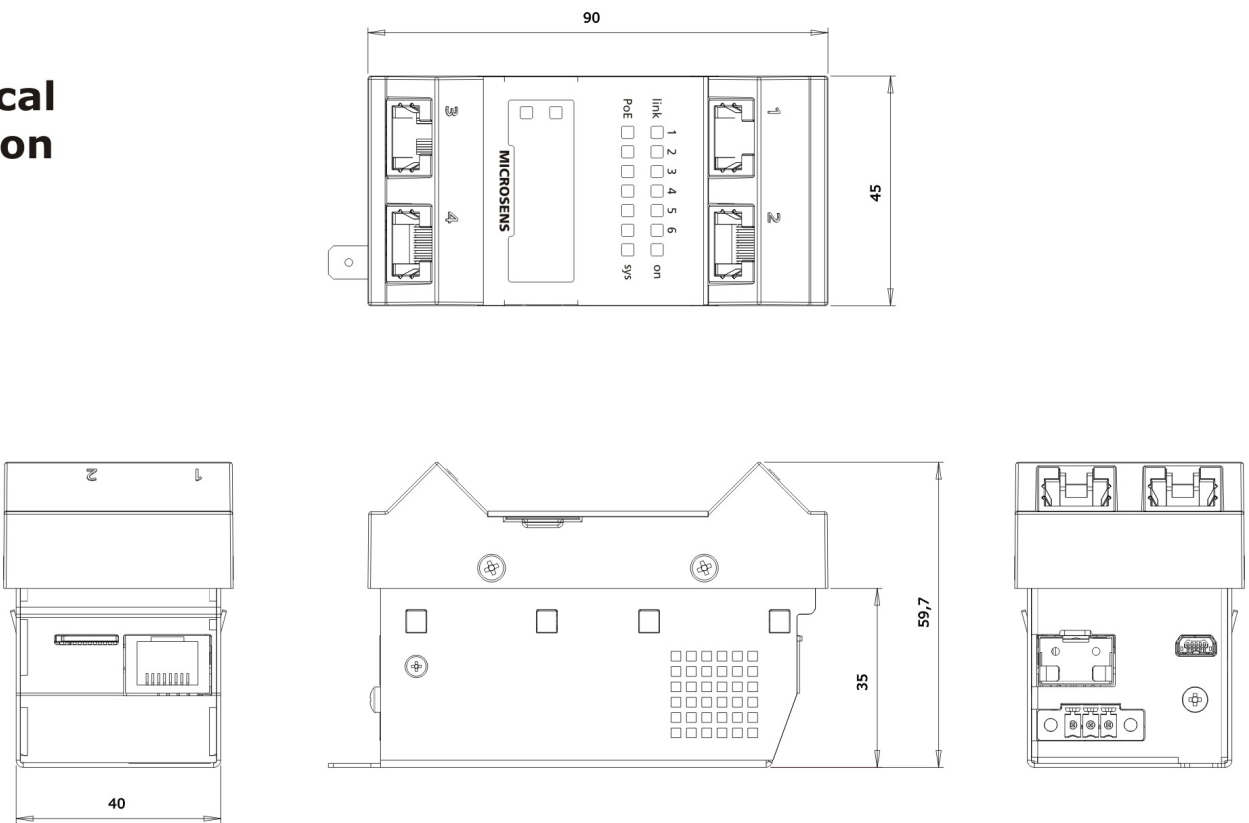
Properties

- High performance, full Gigabit Ethernet design
- Energy efficiency by modern chipsets
- RJ-45 downlink-port for hidden connection of Ethernet devices (10/100/1000T)
- Comfortable administration (Web-, Telnet-, SNMP-interface and NMP-Software)
- High security through VLANs, 802.1X, SSH, HTTPS, accounting etc.
- Fast, tool-free mounting by snap-in installation
- Optional SFP-uplink with dual speed 100/1000 Mbps
- MicroSD Memory-Card
- Extension-Port for future use

Dimensions

Horizontal Version

Vertical Version

Specifications

General

Type	Gigabit Ethernet Switch Layer 2+, IEEE 802.3 compliant
Performance	Store-and-forward, Full wire-speed, non-blocking on all ports
MAC-Adresses	8,192 addresses, automatic learning and aging
Jumbo Frames	max. 10,240 bytes
VLANs	Tagging IEEE 802.3ac Priorisation IEEE 802.1p VLAN IDs 0..4095 256 VLANs Static and dynamic VLAN table
Management	CLI: telnet, ssh Web: http, https SNMPv1, SNMPv2c, SNMPv3 Microsens NMP-Software

Local Ports (other)

Number of Ports	1
Type	RS-232
Connector	Mini USB

Uplink (Fixed Optical Transceiver)

Number of Ports	1
Type	Gigabit Ethernet Multimode: 1000Base-SX Single Mode: 1000Base-LX
Connector	ST or SC duplex
Fiber Cable Type	Multimode: 50 or 62.5/125 µm fiber Single Mode: 9/125 µm fiber
Distance	Multimode: 550 m Single Mode: 10 km, 20 km (optional) actual distance may depend on fiber performance
Output Optical Power	Multimode 850nm: -9,5..-4 dBm Single Mode 1310nm 10 km: -9,5..-3 dBm Single Mode 1310nm 20 km: -9,5..+3 dBm
Receiver Sensitivity	Multimode 850nm: -18 dBm (max. 0 dBm) Single Mode 1310nm 10 km: -20 dBm (max. -3 dBm) Single Mode 1310nm 20 km: -23 dBm (max. -3 dBm)
Flow Control	Pause frames (IEEE 802.3x), configurable

Local Ports (Twisted-Pair)

Number of Ports	4
Type	Gigabit Ethernet, triple speed 10/100/1000Base-T
Connector	RJ-45 jack, shielded
Cable Type	Twisted-Pair cable, min. category 5e, impedance 100 Ohm, length max. 100 m
Flow Control	Pause frames (IEEE 802.3x), configurable
Pinout	Auto MDI/MDI-X, auto polarity

Uplink (Pluggable Transceiver)

Number of Ports	1 (MS440209M-G6 & MS440219M-G6 only)
Type	Fast/Gigabit Ethernet, 100/1000Base-X
Connector	SFP-Slot
Flow Control	Pause frames (IEEE 802.3x), configurable

Uplink (Twisted-Pair)

Number of Ports	1 (MS450186M-G6 & MS450187M-G6 only)
Type	Gigabit Ethernet, triple speed 10/100/1000Base-T
Connector	RJ-45 jack, shielded
Cable Type	Twisted-Pair cable, category 5e, impedance 100 Ohm, length max. 100 m
Flow Control	Pause frames (IEEE 802.3x), configurable
Pinout	Auto MDI/MDI-X, auto polarity

Downlink (Twisted-Pair)

Number of Ports	1
Type	Gigabit Ethernet, triple speed 10/100/1000Base-T
Connector	RJ-45 jack, shielded
Cable Type	Twisted-Pair cable, min. category 5e, impedance 100 Ohm, length max. 100 m
Flow Control	Pause frames (IEEE 802.3x), configurable
Pinout	Auto MDI/MDI-X, auto polarity

Control Panel

Reset Button	Reset of device, last saved configuration is reloaded
Config Button	Pressed separately: Request IP-configuration for management agent. Pressed and hold: Factory reset option with or without IP settings

Environment

Operating Temperature	0..40 °C
Storage Temperature	-20..85 °C
Relative Humidity	10..90%, non condensing

Standards Compliance

CE Mark	2004/108/EC (EMC) 2006/95/EG (Low Voltage)
Safety	EN 60950-1:2011-1
Electromagnetic Emission	EN 55022:2011-12
Electromagnetic Immunity	EN 55024:2011-09
IEEE (Ethernet)	802.3i 10Base-T 802.3u 100Base-T 802.3z 1000Base-X 802.3ab 1000Base-T 802.3az Energy Efficient Ethernet 802.3x Flow Control 802.3ac VLAN Tagging 802.1AB LLDP 802.1D Spanning Tree 802.1Q Tagged VLANs 802.1p Packet Prioritisation 802.1w Rapid Spanning Tree 802.1X Network Access Control

Display

Link	Local ports 1 to 4: blinking: activity green: authorized/forwarding orange: blocked red: unauthorized
Status	Switch Status (S) green: device ready
	Status uplink (5) downlink (6) blinking: activity green: authorized/forwarding orange: blocked red: unauthorized
Type	14 LEDs LED-Modes (generally): dynamic: LED display static states and blink when data is present on a port static: LED display static states but do not blink with data quiet: Display is reduced to sys and on LED. Port LEDs remain off dark: All leds are off

Power Supply (AC)

Input Voltage	195..265 V AC (230 V AC typ.) 50..60 Hz (50 Hz typ.)
Power Consumption	Typ. 5.5 W
Connector	3 pin screw clamp, PE/N/L AWG 16
Ground Terminal (PE)	6.3 mm flat-pin plug

Mechanical

Dimensions	90 mm x 45 mm x 58 mm (l x w x d, without connectors) bevelled edge
Mounting depth	35 mm
Weight	320 g
Housing Color	Standard color: pure white (alternative colors on request)

Reliability

MTBF	100.000 h
Method	calculated, MIL-HDBK-217F

RFC	IPv4:
	- RFC 791 (IPv4)
	- RFC 826 (ARP)
	- RFC 792 (ICMP)
	- RFC 2131 (DHCP)
	- RFC 2474/3260 (IPv4 DiffServ/IPv6 Traffic Class)
	- RFC 4541 (IGMP)
	IPv6:
	- RFC 2460/2464/3484/3513 (IPv6)
	- RFC 2462 (Address Configuration)
	- RFC 2463 (ICMPv6)
	- RFC 2461 (Neighbor Discovery Protocol)
	- RFC 3315 (DHCPv6)
	- RFC 3810/4604 (MLD)
	- RFC 4330 (NTP)
	- RFC 1155/1156/1157 (SNMPv1)
	- RFC 1901/1905/1906 (SNMPv2)
	- RFC 3411/3412/3584 (SNMPv3)
	- RFC 2574/3414 (USM)
	- RFC 2575/3415 (VACM)
	- RFC 2865 (RADIUS)
	- RFC 2866 (Accounting)
	- RFC 2868 (Tunnel Attributes)
	- RFC 5424 (Syslog)

Additional Features

Software	- Dual Stack IPv4/IPv6
	- Port Monitor
	- CDP v1, v2

Packaging

Standard	1x Micro Switch
	1x MicroSD Card (extra part-no.)
	1x Power-plug
	1x Quick Installation Guide
	1x Set piktogramm-labels
Bulk	20x Micro Switch
	20x MicroSD Card (extra part-no.)
	20x Power-plug
	1x Quick Installation Guide
	20x Set piktogramm-labels

Order Information

Description	Article Number
Horizontal Mounting	
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x1000Base-SX, ST Multimode 850nm, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230VAC power supply	**MS440200M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x1000Base-SX, SC Multimode 850nm, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230VAC power supply	**MS440201M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x1000Base-LX, SC Single mode 1310 nm, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230VAC power supply	**MS440202M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x1000Base-LX, ST Single mode 1310 nm, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230VAC power supply	**MS440203M-G6+**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x 100/1000Base-X SFP Port, Downlink: 1x 100/1000Base-X SFP Port, horizontal version, int. 230VAC power supply	**MS440207M-G6**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x 100/1000Base-X SFP Port, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230VAC power supply	**MS440209M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x10/100/1000Base-TX, Downlink: 1x10/100/1000Base-TX, horizontal version, int. 230 VAC power supply	**MS450186M-G6+**
Vertical Mounting	
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x1000Base-SX, ST Multimode 850nm, Downlink: 1x10/100/1000Base-T, vertical version, int. 230VAC power supply	**MS440210M-G6+**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x1000Base-SX, SC Multimode 850 nm, Downlink: 1x10/100/1000Base-T, vertical version, int. 230VAC power supply	**MS440211M-G6+**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x1000Base-LX, SC Single mode 1310 nm, Downlink: 1x10/100/1000Base-T, vertical version, int. 230VAC power supply	**MS440212M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x1000Base-SX, ST Single mode 1310 nm, Downlink: 1x10/100/1000Base-TX, vertical version, int. 230VAC power supply	**MS440213M-G6+**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x 100/1000Base-X SFP Port, Downlink: 1x 100/1000Base-X SFP Port, vertical version, int. 230VAC power supply	**MS440217M-G6**
GBE Micro Switch 4x10/100/1000Base-T, Uplink: 1x 100/1000Base-X SFP Port, Downlink: 1x10/100/1000Base-T, vertical version, int. 230VAC power supply	**MS440219M-G6+**
GBE Micro Switch 4x10/100/1000Base-TX, Uplink: 1x10/100/1000Base-TX, Downlink: 1x10/100/1000Base-TX, vertical version, 230 VDC power supply, int. 230VAC power supply	**MS450187M-G6+**

Accessories

Description	Article Number
Micro Storage Media Card 4GB for MICROSENS G6-Switches, incl. Firmware, -25..+85°C	**MS140894X-4G**
Labeling-Sheet (DIN-A4) with 80 labels for G6-Switches, suitable for laser-printers, perforated, 10 sheets per sheet. Form generaotr by NMP-Software	**MS140005**
Ackermann Installation set consisting of socket (208 mm length), device support, 1x 45 mm blind cover, 1x socket cover Scope of delivery: parts pre-assembled	**MS140027**
Two-component installation set for PUK, consisting of a device support and ½ blind cover in pure white	**MS140121**
Universal installation set for E2 mounting boxes consisting of adapter plate and cover frame (pure white)	**MS140029**
Installation set consisting of a cover frame (184 x 86 mm), mounting bracket, 1x blind cover Color: pure white	**MS140069**
Concealed wall socket triple, support plate, cover frame and blind cover Socket dimensions: 186 x 90 x 50	**MS140040UP3**
Hollow wall mountingbox, support plate, cover frame and blind cover (pure-white) Socket dimensions: 183 x 69 x 50 (mm)	**MS140040HW3**
Installation set consisting of cover frame (168 x 85 mm), front-locking device support, 1x blind cover Colour: pure white	**MS140040F2**
Installation set consisting of cover frame (168 x 85 mm), adapter plate and 2x device support, pre-assembled, Colour: pure white	**MS140040BR2**
SFP Gigabit Ethernet Transceiver 1000Base-SX, Multimode 850nm, digital Diagnostics, exten. temp.-range: -40..85°C	**MS100200DX**
SFP Gigabit Ethernet Transceiver 1000Base-LX, Single Mode 1310nm, digital Diagnostics, -40..85°C	**MS100210DX**
SFP Fast Ethernet Transceiver 100Base-FX, Multimode 1310nm, digital Diagnostics, -40..85°C	**MS100190DX**
SFP Fast Ethernet Transceiver 100Base-FX, Monomode 1310nm, digital Diagnostics, -40..85°C	**MS100191DX**
nmp Professional - MICROSENS Network Management Platform - java software and one year update license	**MS200160-1**
nmp Standard - MICROSENS Network Management Platform - java software and one year update license	**MS200162-1**
NMP Server - management software with 1 year update licence, incl. 5 clients	**MS200164-1**