

## Data Sheet

### 10 Gigabit Ethernet L2/L3 Switch – 19" 1U

#### Overview

MICROSENS offers a new 19" switch with 24 Gigabit Ethernet SFP ports and 4 10G SFP+ fiber uplink ports. Additionally the device provides 8 10/100/1000Base-T RJ-45 ports which are shared with SFP slots.

The switch has extensive Layer 2 and Layer 3 management functions, such as VLANs, IGMP Snooping, QoS, RSTP or Layer 3 routing. It can be easily managed via a WEB GUI, CLI or SNMP.

#### PROPERTIES

- 24x 1000Base-X SFP slots
- 8x 10/100/1000Base-T RJ-45 ports (shared with SFP slots)
- 4x 1/10G SFP+ slots
- WEB, CLI and SNMP management interface
- Extensive Layer 2 and Layer 3 features
- Redundant and modular 100...240 VAC power supply
- Intended for 19" mounting

## Software Features

### System Management

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- WEB GUI (http)
- CLI (Telnet, console)
- SNMP v1/v2/v3
- SNMP traps
- Central management platform (NMP)
- IP interface configuration per VLAN
- MAC address table
- Syslog
- Configuration upload/download
- Firmware upgrade
- Factory Default Reset
- System reboot
- User right settings
- System status, history and traffic statistics

### Port Configuration

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- Port enable/disable
- Individual port name
- Speed and full/half duplex settings
- Flow control
- Jumbo Frames
- Rate limiting
- Port isolation

### Power-over-Ethernet PoE/PoE+

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- IEEE 802.3af PoE (max. 15 W/Port)
- IEEE 802.3at PoE+ (max. 30 W/Port)
- Enabling or disabling PoE per port
- Port priority settings
- Limitation of total PoE power

### DHCP

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- DHCP Client/Server/Relay/Repeater
- DHCP Snooping

### IP Routing

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- Static Routing
- RIP v1/v2 (IPv4), OSPF v1/v2
- ISIS (IPv4), BGP (IPv4)
- Static ARP add, delete, burn-in –time setup/check

- Static ND add, delete, burn-in –time setup/check
- VRRP v1/v2/v3 (Virtual Redundant Route Protocol)
- PIM
- Support duplex transfer check mechanism

### Virtual LANs (VLANs)

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- 4k VLANs
- Access and trunk mode
- Q-in-Q double tagging
- GVRP

### Quality of Service (QoS)

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- Layer 1 priority (port-based)
- Layer 2 priority based on 802.1Q VLAN tags
- Layer 3 priority based on 802.1p (DSCP)
- 8 priority levels (4 queues)
- Strict priority or WRR (Weighted Round Robin)

### Link Aggregation

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- Up to 5 groups
- Static Link Aggregation

### IP Multicast

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- IGMP Snooping
- MLD Snooping

### Reliability

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- Spanning Tree (STP) according to IEEE 802.1D
- Rapid Spanning Tree (RSTP) according to IEEE 802.1w
- Multiple Spanning Tree (MSTP)
- Fast Ring protocol

### Security

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- RADIUS client (802.1X)
- IP-, port-, MAC-, or VLAN-based binding combinations
- Access Control List (ACL)
- Time range management

## Technical Specifications

### Switch

<b>Type</b>	10 Gigabit Ethernet L2/L3 Switch – 19" 1U, PoE+ PSE IEEE 802.3 compliant
<b>Performance</b>	Store-and-forward
<b>Switching Capacity</b>	128 Gbps (non-blocking)
<b>Packet Forwarding Rate</b>	95.2 Mpps
<b>Packet Buffer</b>	12 Mbit
<b>MAC addresses</b>	16 k, automatic learning and aging
<b>Jumbo Frames</b>	9 kBytes

### Twisted-Pair Ports

<b>Number</b>	8 (shared with SFP slots)
<b>Type</b>	Gigabit Ethernet, Triple Speed 10/100/1000Base-T
<b>Connector</b>	RJ-45 port, shielded
<b>Cable type</b>	Twisted-Pair cable, Category 5e, impedance 100 Ohm, length max. 100 m
<b>Flow Control</b>	Pause Frames (IEEE 802.3x), configurable
<b>Pin out</b>	Auto MDI/MDI-X, Auto Polarity

### Fiber Ports (SFP slots)

<b>Number</b>	24
<b>Type</b>	1000Base-X SFP slot, support of SFP digital diagnostics function
<b>Connector</b>	LC (SFP transceiver)
<b>Flow Control</b>	Pause Frames (IEEE 802.3x), configurable

### Fiber Ports (SFP+ slots)

<b>Number</b>	4
<b>Type</b>	1/10GBase-X SFP+ slot, support of SFP digital diagnostics function
<b>Connector</b>	LC (SFP+ transceiver)
<b>Flow Control</b>	Pause Frames (IEEE 802.3x), configurable

### CLI Console

<b>Type</b>	RS-232
<b>Connector</b>	RJ-45

### OoB Port

<b>Type</b>	10/100Base-TX
<b>Connector</b>	RJ-45

### LEDs

<b>Port LEDs</b>	Link/activity
<b>Device LED</b>	Power

### Power Supply

<b>Type</b>	2 slots for power modules (one module included in the delivery)
<b>Input Voltage</b>	100..240 VAC
<b>Frequency</b>	50/60 Hz
<b>Power Consumption</b>	60 W
<b>Connector</b>	Cold device plug

### Environmental Conditions

<b>Temperature</b>	Operation	-10..+50 °C
	Storage	-40..+85 °C
<b>Humidity</b>	5..95%, non-condensing	

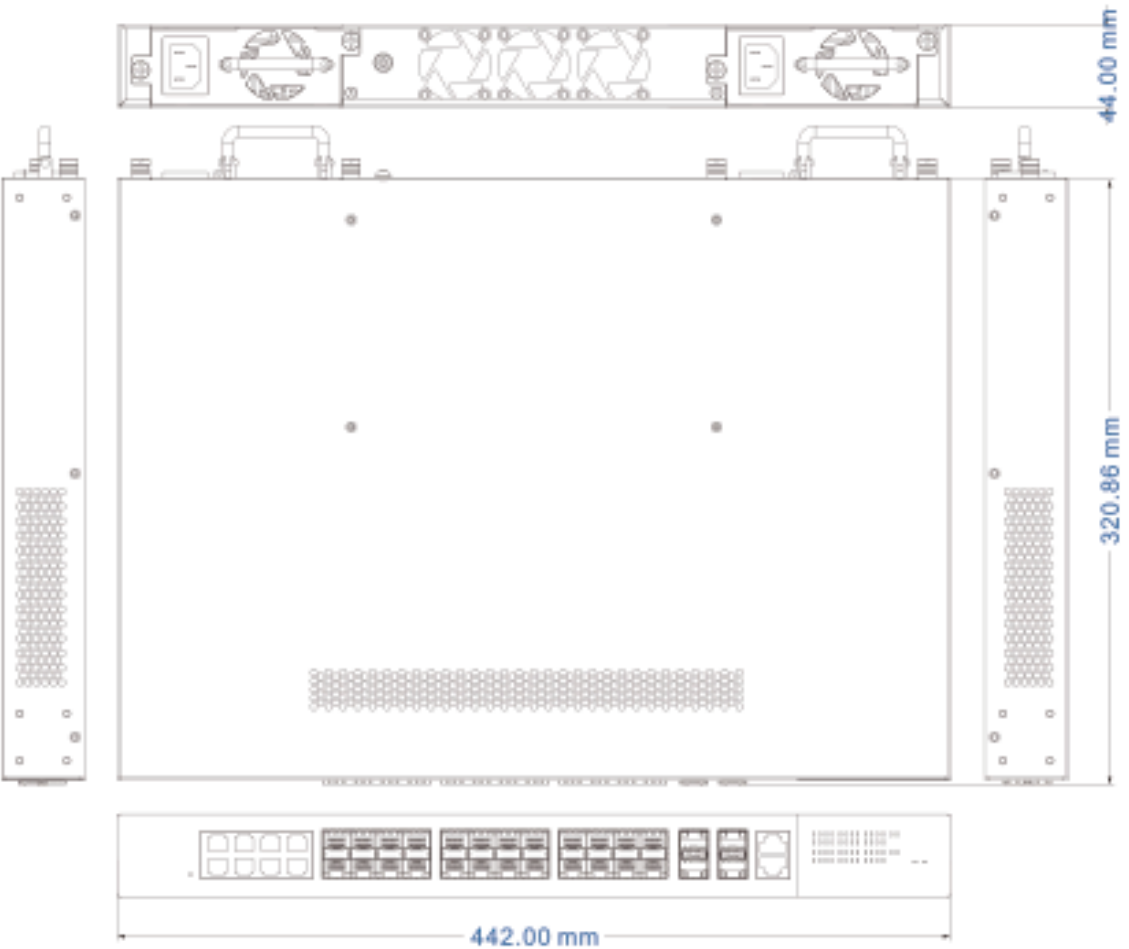
### Mechanic

<b>Dimensions (in mm)</b>	442 x 320 x 44.5 (L x W x H, without connectors)
<b>Weight</b>	Approx. 5.65 kg
<b>Mounting</b>	19" (1U)

### Standards

<b>CE</b>	2014/30/EU (EMC) 2014/35/EU (Low voltage) 2011/65/EU (RoHS)
<b>Safety</b>	EN 60950-1
<b>Emitted interference</b>	EN 55032:2015
<b>Immunity</b>	EN 55024:2010
<b>Surge Immunity</b>	6 kV (IEC61000-4-5)
<b>ESD Immunity</b>	6 kV contact discharge, 8 kV air discharge (IEC 6100-4-2)
<b>Ethernet</b>	IEEE 802.3 IEEE 802.3u (100Base-TX) IEEE 802.3ab (1000Base-T) IEEE 802.3z (1000Base-X) IEEE 802.3ae (10GBase-X) IEEE 802.3x (flow control)

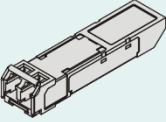
## Dimensions



## Order Information

	Description	Article No.:
	<b>10 Gigabit Ethernet L2/L3 Switch – 19” 1U</b>	
	10 Gigabit Ethernet L2/L3 Switch 19” 1U 4x 1/10GBase-X SFP+ slots, 24x 1000Base-X SFP slots, 8x 10/100/1000Base-T ports (shared with SFP slots), PSE console port, -10..50°C, power input 100..240 VAC	<b>MS400990M</b>

## Accessories

	Description	Article No.:
	<b>SFP and SFP+ Transceiver (xWDM on request)</b>	
	SFP Transceiver, Gigabit Ethernet, Digital Diagnostic 850 nm Multimode, 1000Base-SX, LC duplex	<b>MS100200DX</b>
	SFP Transceiver, Gigabit Ethernet, Digital Diagnostic 1310 nm Single mode, 1000Base-LX, LC duplex	<b>MS100210DX</b>
	SFP+ Transceiver, 10 Gigabit Ethernet, Digital Diagnostic, -40..85° C, 850 nm Multimode, 10GBase-SX, LC duplex, 300m	<b>MS100700DX</b>
	SFP+ Transceiver, 10 Gigabit Ethernet, Digital Diagnostic, -40..85° C, 1310 nm single mode, 10GBase-LX, LC duplex, 10 km	<b>MS100702DX</b>

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