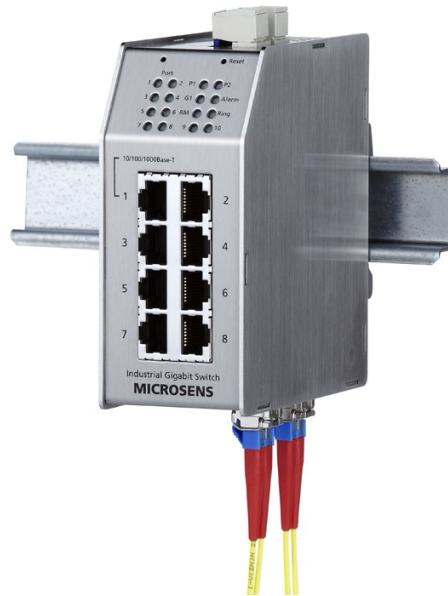


Product Overview

Gigabit Ethernet 10 port Industrial Switch with Ring redundancy



Description

The 10 port Gigabit Switch is equipped with two 1000Base-SX/LX Gigabit Ethernet fiber optic interfaces and therefore allows the implementation of a fault tolerant optical ring. In case of failure the MICROSENS patented technology assures the reconfiguration of the connection within less than 20 ms.

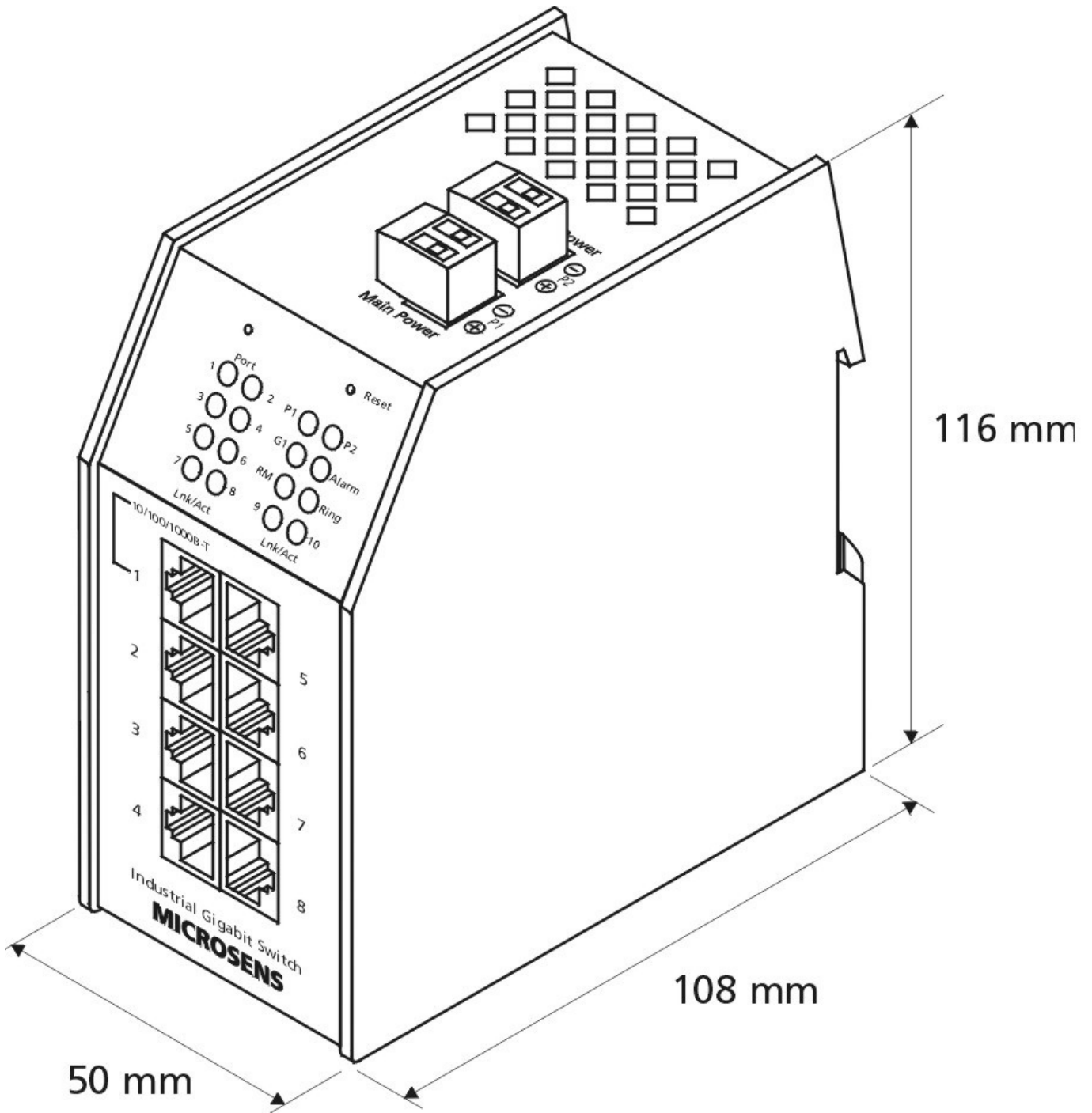
The Industrial Switch is offering 8 copper ports for the connection of Ethernet terminals like control systems, consoles or further network users. The Gigabit Switch can be configured and monitored by the MICROSENS NMP Management Software, a PC based management tool and, optionally, SNMP. The implementation of data prioritization (QoS) and VLANs according to IEEE Std. 802.1Q/p are forming a relevant part of the Industrial Switch.

Optionally, the Gigabit switch is also available with a third Gigabit fiber port (1000Base-SX or LX optional as SFP version).

Properties

- Gigabit Ethernet 10 Port Switch, 7x 10/100Base-TX, 1x10/100/1000-T, 2x 1000Base-SX/LX
- 2 Fiber ports for building fault tolerant fiber rings
- Manageable with Device Manager, SNMP optional
- Full VLAN functionality / data prioritization according to IEEE 802.1q
- Reconfiguration time < 20 ms
- Optional with SFP slots
- Robust casing in industrial design with integrated holder for 35 mm DIN rail

Dimensions



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-Addresses	8,192 addresses, automatic learning and aging
VLANs	Tagging IEEE 802.3ac Prioritisation IEEE 802.1p VLAN IDs 0..4095 Static and dynamic VLAN table
Quality of Service	4 hardware-queues per port prioritisation according to: * IPv4/IPV6 * VLAN priority IEEE 802.1p * port queue weighting strict or weighted, configurable"
Management	CLI: telnet Web: http SNMPv1, SNMPv2c Microsens NMP-Software

Uplink (Pluggable Transceiver)

Number of Ports	3 (MS650869M 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
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

Local Ports (Twisted-Pair)

Number of Ports	8
Type	1x Gigabit Ethernet, triple speed 10/100/1000Base-T 7 x Fast Ethernet, dual speed 10/100Base-TX
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

Uplink (Fixed Optical Transceiver)

Number of Ports	2 (MS650851M, MS650852M)
	3 (MS650861M, MS650862M)
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 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
Receiver Sensitivity	Multimode 850nm: -18 dBm (max. 0 dBm) Single Mode 1310nm 10 km: -20 dBm (max. -3 dBm)
Flow Control	Pause frames (IEEE 802.3x), configurable

Power Supply (DC)

Input Voltage	2x 24 VDC (redundant ports)
Power Consumption	8 W (typ.)
Fuse	1 A
Connector	screw terminals

Mechanical

Dimensions	50 mm x 108 mm x 116 mm (w x d x h)
Mounting	DIN rail
Protection class	IP 30

Additional Features

Software	<ul style="list-style-type: none">- MICROSENS Ring-Protocol- Port Monitor- CDP v1, v2
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Display

Power	P1 Green: Main Power Supply active Orange: Main Power Supply missing P2 Green: Backup Power Supply active Orange: Backup Power Supply missing
Link	Port 1-8 Link (on) and activity (flashing) of the TP ports Port 9-10 Link (on) and activity (flashing) of the fiber ports
Status	G1 Green: Copper port 1 with Gigabit Ethernet speed Orange: Third SFP fiber port active, copper port 1 without function (optional) Ring: Switch configured for ring mode RM: Ring Master (only in ring mode and if) Alarm: Fiber link interrupted or Power Supply problem

Environment

Operating Temperature	-20..60°C -40..75°C (X-Versions)
Storage Temperature	-40°..85°C
Relative Humidity	5% to 90% non condensing

Standards Compliance

IEEE (Ethernet)	802.3i 10Base-T 802.3u 100Base-T 802.3z 1000Base-X 802.3ab 1000Base-T 802.3x Flow Control 802.3ac VLAN Tagging 802.1D Spanning Tree 802.1Q Tagged VLANs 802.1p Packet Prioritisation 802.1w Rapid Spanning Tree 802.1X Network Access Control
RFC	IPv4: <ul style="list-style-type: none">- RFC 791 (IPv4)- RFC 826 (ARP)- RFC 792 (ICMP)- RFC 2131 (DHCP)- RFC 2474/3260 (IPv4 DiffServ/IPv6 Traffic Class)- RFC 4541 (IGMP) <ul style="list-style-type: none">- RFC 1769 (SNTP)- 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)

Reliability

MTBF	400,000 h
Method	calculated, MIL-HDBK-217F

Order Information

Description	Article Number
10 port Gigabit Ethernet Industrial Switch with Ring redundancy 1x 10/100/1000Base-T, 7x 10/100Base-TX, 2x 1000Base-SX, SC Multimode 850 nm	MS650851M
10 port Gigabit Ethernet Industrial Switch with Ring redundancy 1x 10/100/1000Base-T, 7x 10/100Base-TX, 2x 1000Base-LX, SC Single mode 1310 nm	MS650852M
10 port Gigabit Ethernet Industrial Switch with Ring redundancy 1x 10/100/1000Base-T, 7x 10/100Base-TX, 3x 1000Base-SX, SC Multimode 850 nm	MS650861M
10 port Gigabit Ethernet Industrial Switch with Ring redundancy 1x 10/100/1000Base-T, 7x 10/100Base-TX, 3x 1000Base-LX, SC Single mode 1310 nm	MS650862M
10 port Gigabit Ethernet Industrial Switch with Ring redundancy 1x 10/100/1000Base-T, 7x 10/100Base-TX, 3x 1000Base-X, SFP slot	MS650869M-V2
Industrial Gigabit Ethernet Switch, 1x 10/100/1000Base-T or 1000Base-X (auto detect), 7x10/100Base-TX, 3x SFP Ports, Redundant-Uplink with Ultra Fast Ring Recovery, extended temperature range	MS650869MX-V2

Accessories

Description	Article Number
End clamp for DIN rail 35mm, 2 screws, width: 10 mm, color: aluminium	MS140806
Hat-rail power supply 24 Watt 24 V / 1,0 A, wide range input 85-264 VAC, 85..375 VDC	MS700420
Hat-rail power supply 60 Watt 24 V / 2,5 A, wide range input 85-264 VAC, 85..375 VDC	MS700421
Hat-rail power supply 120 Watt 24 V / 5,0 A, wide range input 85-264 VAC, 85..375 VDC	MS700422
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

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