Product Overview

MICROSENS

Gigabit Ethernet 13 Port Basic-Switch Profi Line Modular

Description

The new Profi Line Modular switches from MICROSENS offer top performance and flexibility in confined spaces.

The modular design of the Profi Line Modular switches enables expansions tailored to needs, which limits the initial investment to the minimum necessary.
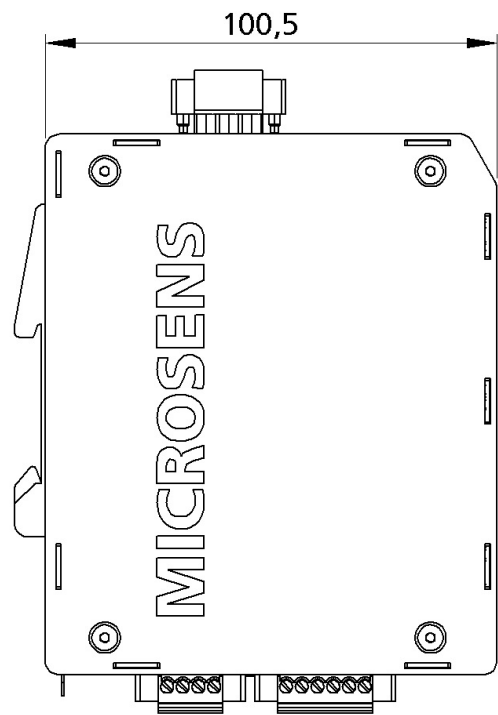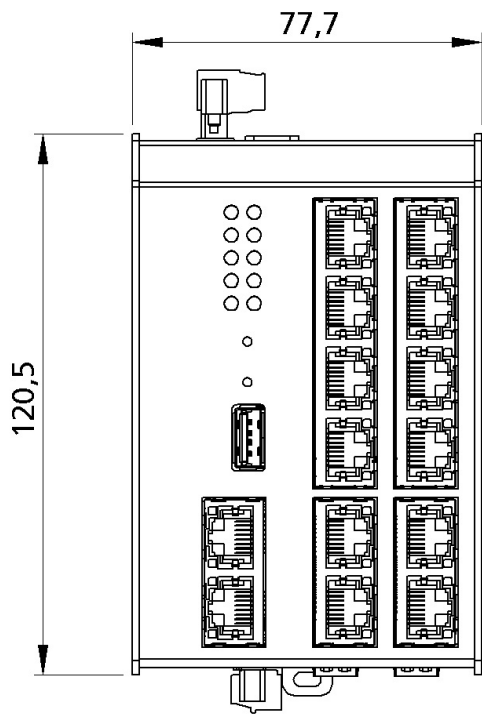
Even the basic switch module offers thirteen gigabit ports, of which four, as combo ports, can be expanded to fiber optic connections. Despite its space-saving design, it has two alarm inputs/outputs, for example for cabinet monitoring or integrating a sensor/actuator. The copper ports offer PoE/PoE+ with which the terminal devices connected can be supplied with electricity economically and without additional cabling work. The switches themselves can also work without their own power supply, supplied via PoE/PoE+ as powered devices.

For maximum scalability, expansion modules with six or twelve Gigabit Ethernet ports are available that can simply be connected on the side to match demand. The expansion modules also have gigabit combo ports with which an impressive number of fiber optic connections can be achieved economically and in relation to usage.

Properties

- Gigabit performance with Energy-Efficient Ethernet
- Power-over-Ethernet+ (802.3at),maximum of 30 W per port
- Extended temperature range
- Compact metal housing for DIN rail assembly
- Robust design, extension modules available
- Redundant power inputs
- Linux kernel, open standards, long-term availability
- SD card for firmware and configuration
- Fault tolerance with minimum recovery times

Dimensions

Specifications

General

Type	Gigabit Ethernet Switch Layer 2+, IEEE 802.3 compliant, fanless
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
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, ssh Web: http, https SNMPv1, SNMPv2c, SNMPv3 Microsens NMP-Software Serial Interface (RJ-45)

Uplink (Pluggable Transceiver)

Number of Ports	4 (Combo-Ports)
Type	Fast/Gigabit Ethernet, 100/1000Base-X
Connector	SFP-Slot
Flow Control	Pause frames (IEEE 802.3x), configurable

Display

Type	10 LEDs (RGB-LED)
Power	Local ports 1 to 9: green: PoE sourcing blue: PoE+ active orange: PoE standby red: PoE error
Link	Local ports 1 to 8: blinking: activity green: authorized/forwarding orange: blocked red: unauthorized
Status	Switch Status (S) green: device ready

Local Ports (Twisted-Pair)

Number of Ports	9 + 4(Combo-Ports)
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
Power-over-Ethernet	8x Power Sourcing Equipment (PSE) IEEE 802.3at and 802.3af class 0, max. 30 W, forced-mode (legacy-devices), max. 200 W total power 1x Powered Device (PD) IEEE 802.3at and 802.3af class 0, max. 30 W, forced-mode (legacy-devices)

Uplink (Fixed Optical Transceiver)

Number of Ports	4 (Combo-Ports)
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

Status
blinking: activity
green: authorized/forwarding
orange: blocked
red: unauthorized

Power Downlink (P)
green: PoE sourcing
blue: PoE+ active
orange: PoE standby
red: PoP error

Ring: Switch configured for
ring mode
RM: Ring Master (only in ring
mode)

Signal (in/out):
red: Alarm

Power Supply (DC)

Input Voltage	2x 44..57 VDC (54 VDC typ.), redundant Power For 802.at services 54VDC (min.) is required.
Power Consumption	Typ. 9 W (device only), max. 200 W (incl. PoE+)
Connector	2x 3 pin screw clamp, PE/-/+ AWG 16

Environment

Operating Temperature	-40..+75 °C
Storage Temperature	-40°..85°C
Relative Humidity	5% to 90% non condensing

Mechanical

Dimensions	120.5 mm x 77.7 mm x 100.5 mm (h x w x d)

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 802.3af PoE 802.3at PoE+ 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
Other	EN 50121-4:2006 (railway applications - electromagnetic compatibility) EN 50125-3:2003 (railway applications - environmental conditions) IEC 61850-3 (electrical substation automation) IEEE 1613 (electric power substations)

Reliability

MTBF	400.000 h
Method	calculated, MIL-HDBK-217F

Order Information

Description	Article Number
Profi Line Modular Basis-Module	
Modular Industrial Gigabit Ethernet Basic-Switch, 8x 10/100/1000T PoE+ (PSE), 1x 10/100/1000T PoE+ (PD), 4x Dual Media Ports: 100/1000X SFP-Slot or 10/100/1000T, integrated CPU, Serial Port, USB Port, SD Memory Card Slot, I/O: 2x in, 2x out, 2x power input 24..57 VDC	**MS652119PM**
Profi Line Modular Expansion Modules	
Profi Line Modular 6 Port Expansion Module, 4x 10/100/1000T PoE+ (PSE), 2x Dual Media Ports: 100/1000X SFP-Slot or 10/100/1000T	**MS652219PM**
Profi Line Modular 12 Port Expansion Module, 8x 10/100/1000T PoE+ (PSE), 4x Dual Media Ports: 100/1000X SFP-Slot or 10/100/1000T	**MS652419PM**