

Data Sheet

12-Port 10G Desktop FTTO Switch PoE++



10G Uplinks (IEEE 802.3ae)

3x 1/10G uplink for maximum performance and flexibility in the FTTO network



1/2.5/5/10G Downlink (IEEE 802.3bz, IEEE 802.3an)

Multi Gigabit port optimised for camera and Wi-Fi 6 network operation



PoE++ PSE Local Port (IEEE 802.3bt)

140W power budget (1x Port up to 60W, 8x Ports up to 30W)



IT Security

MICROSENS SECURE feature set for a high level of IT security



Fanless Design

No noise emission at the workplace



MICROSENS NMP integrated

Integrated in MICROSENS NMP for clear administration and simple group configurations



Standardised Network Redundancy (ERPS nach G.8032v2)^[1]

Feature set for special redundancy topologies in the FTTO network

Hardware Description

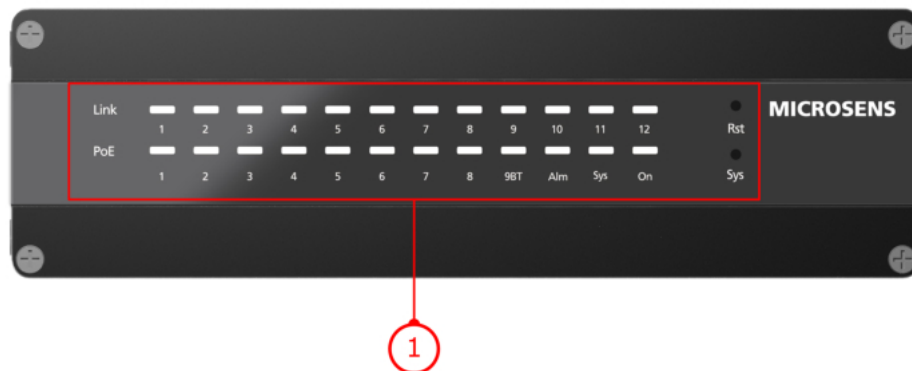


Figure 1. Front

- ① LED Board

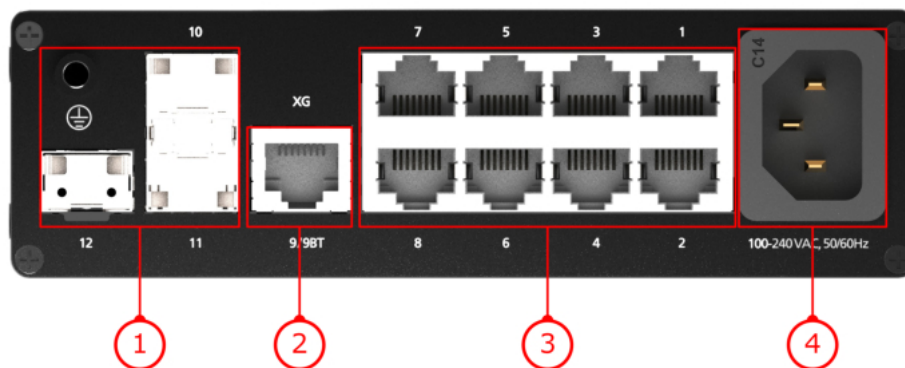


Figure 2. Rear

- ① SFP+ slots
- ② Twisted Pair Port Multigigabit PoE++
- ③ Twisted Pair Ports Gigabit PoE+
- ④ C14 Power Connector 230VAC

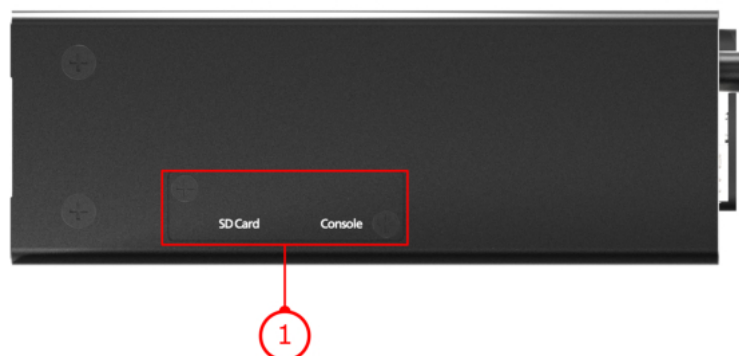


Figure 3. Right

- ① microSD Slot (covered) and USB-C Console Port (covered)



The layout shown corresponds to the planned hardware interfaces, but adjustments may still be necessary due to current housing plans.

Technical Specifications

Switch

Type	10G Ethernet L2/L3 Switch, IEEE 802.3 compliant, fanless
Performance	Store-and-forward, full wire-speed non-blocking on all ports
Switching Capacity	16 Gbps
Jumbo Frames	max. 10,240 Bytes
Flow Control	Pause Frames (IEEE 802.3x), configurable
MAC Addresses	16 k

Mechanical

Dimensions	145 mm x 122 mm x 45 mm (W x D x H, without connectors)
Weight	745 g
Mounting	Desk Optional adapters for 19" DIN rails and wall mounting in planning

LWL-Ports (Uplinks)

Number	3
Type	SFP/SFP+ Slots, 1/10GBase-X supports DDM functions (depending on the transceiver)
Connector	typ. LC (depending on the transceiver)

GbE TP-Ports (Userports)

Number	8
Type	Gigabit Ethernet, triple speed 10/100/1000Base-T
Connector	RJ-45
Power-over-Ethernet	8x PSE IEEE802.3af/at (Cl. 4) (of which 2x PoE Combo < - > Multigigabit TP port)

Multigigabit TP-Port (Userport)

Number	1
Type	10 Gigabit Ethernet, triple speed 1/2.5/5GBase-T
Connector	RJ-45
Power-over-Ethernet	8x PSE IEEE802.3af/at/bt Cl. 6 Combo (to 2x GbE TP ports)

Power Supply

Input	100...240 VAC
Connector	C14 (power cable 1.8m included in the scope of delivery)

Console Port (covered)

Connector	USB C
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Micro SD Card Slot

Card Format	Industrial microSD
Format	Product and manufacturer specific
Delivery / Use	optional

Environmental Condition

Temperature	Operation: 0..+40 °C Storage: -20..+85 °C
Humidity	10..90%, non condensing

Firmware Features

For information on the firmware specifications of the device, please refer to the "**Firmware Features**" document.

PoE Combo Mode Possibilities

Mode 1

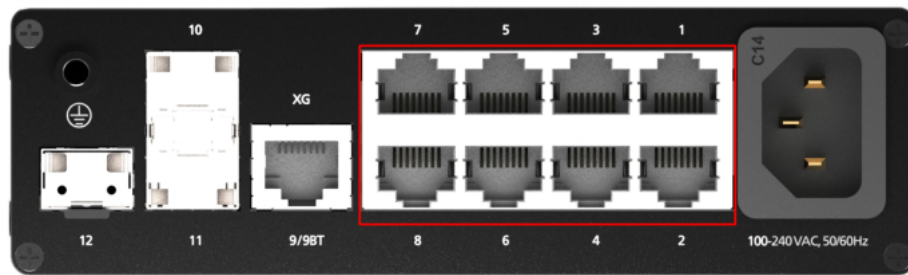


Figure 4. 8x GbE PoE+ Mode

Mode 2

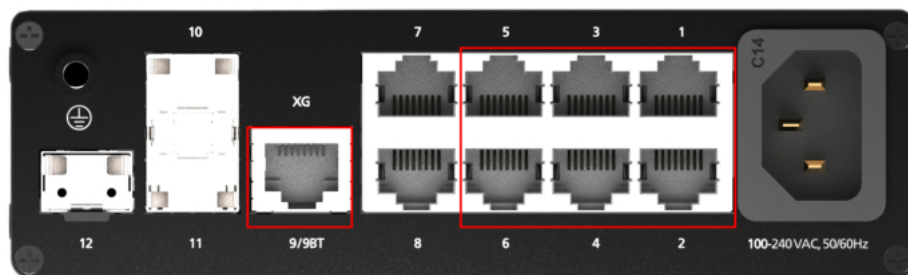
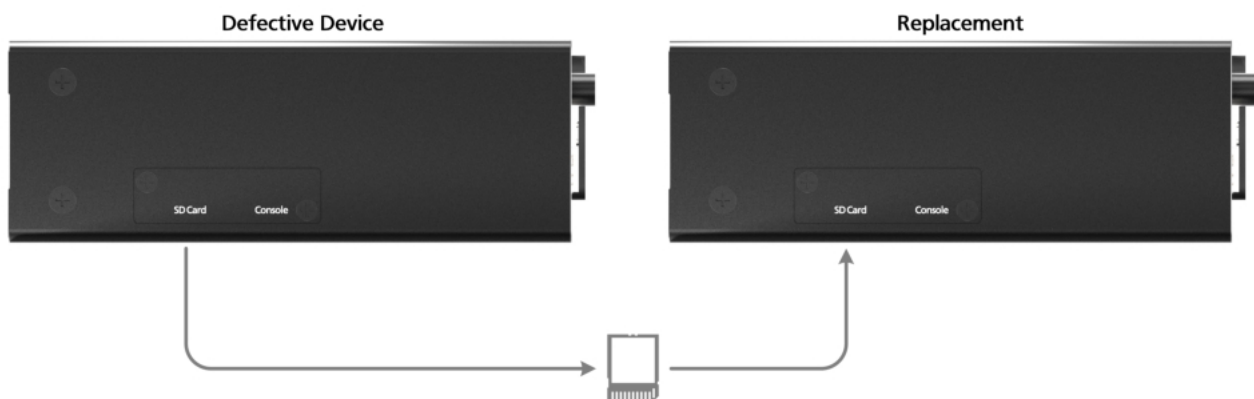


Figure 5. 6x GbE PoE+ + 1x 1/2.5/5G PoE++ Mode

Memory Card



microSD Memory Card

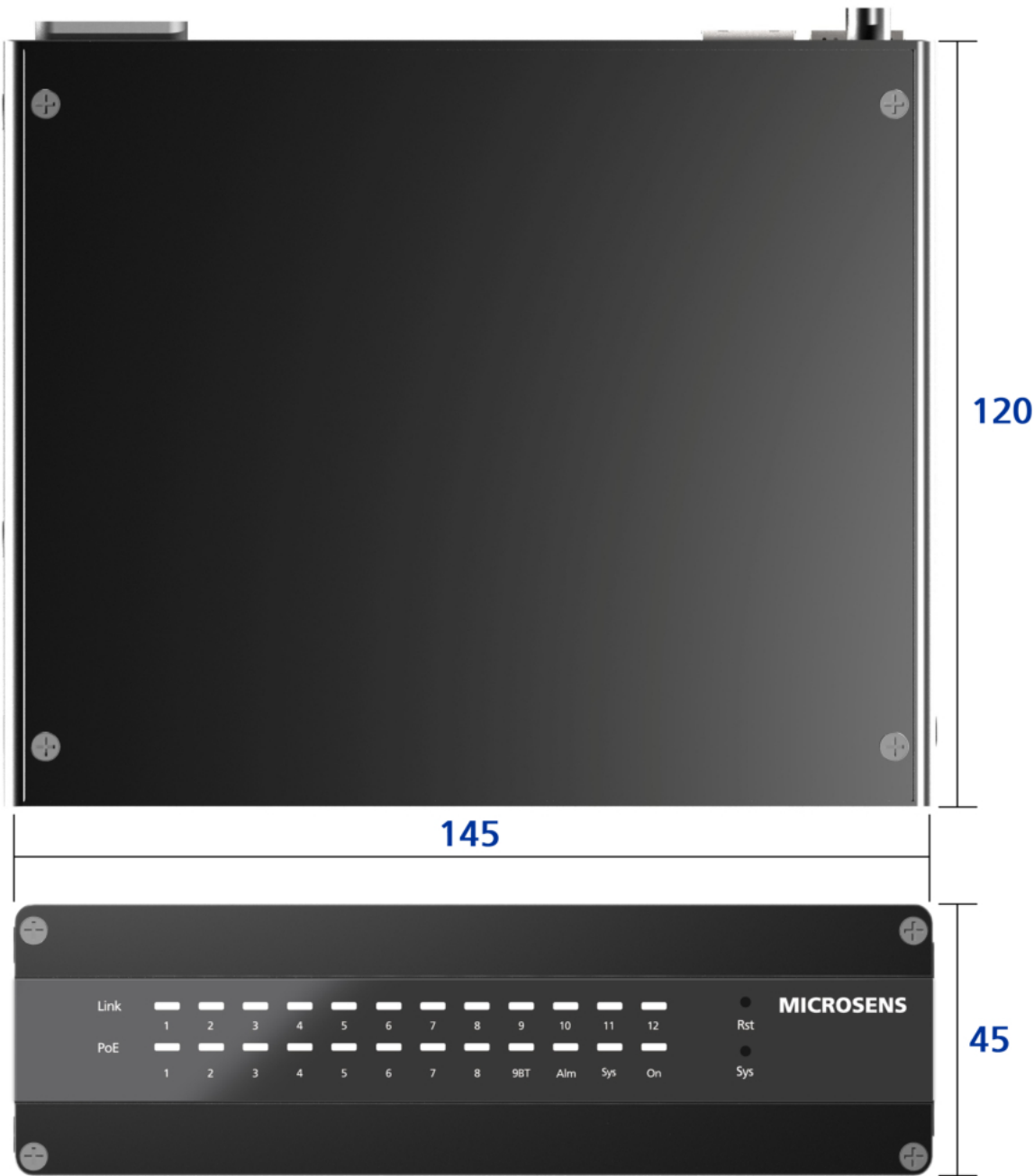
The microSD memory card is used for the permanent storage of configuration and firmware files. With this memory card it is possible to transfer a configuration to a new device in case of a device failure.

Optionally it is possible to write an own MAC address to the microSD memory card. This one has priority compared to the MAC address in the switch.

This allows to provide an exact clone of the device by swapping the memory card.

- Change of memory card transfers the complete device status
- Industrial grade-long term stability
- Due to the MICROSENS-specific security formatting and thermal properties, only MICROSENS Industrial microSD cards are permitted

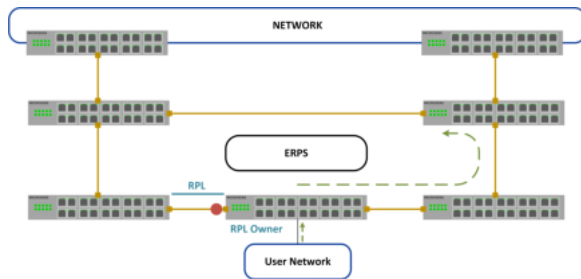
Dimensions



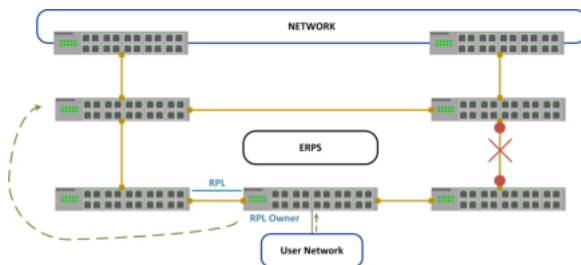
Ethernet Ring Protection Switching (ERPS acc. to ITU-T G.8032v2)

Single Ring ERPS

- Basic Setup: One ring of Ethernet switches.
- How It Works:
A single link is blocked to prevent loops.



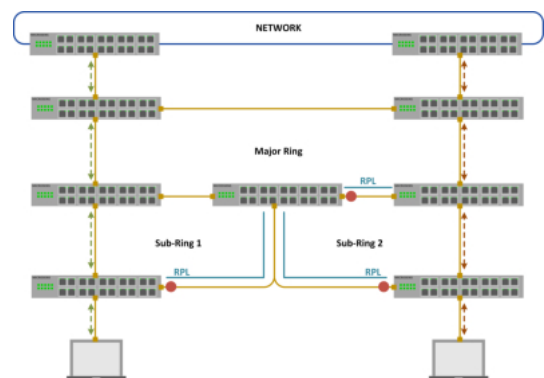
If a failure occurs, ERPS unblocks the backup path.



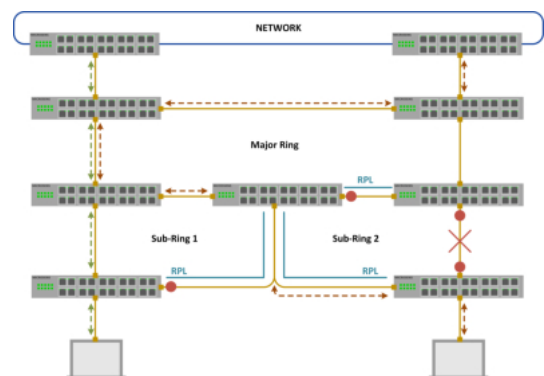
- Use Case: Smaller networks or setups where one ring is enough for redundancy.

Multi-Ring ERPS

- Advanced Setup: Multiple rings connected together.
- How It Works:
 - Different rings are linked through inter-connection nodes (specific switches that connect multiple rings).



- If a failure occurs in one ring, ERPS can reroute traffic through another ring.



- Use Case: Larger networks where traffic needs multiple backup paths for better reliability.

Ordering Information

	Description	Art.-No.
	12-Port 10G Dsktop Switch PoE++ 3x 1/10G-X SFP/SFP+-Slots, SNMP-managed, 8x 10/100/1000T PoE+, 1x 1/2.5/5G-T PoE++, microSD-Slot, Console Port USB-C, int. 230VAC	MS453607PM

Accessories

	Console Cable for Switches w. USB-C connector USB-C female to USB-A male, 2,0m	MS190412-02,0
	SFP Transceiver	
	LPC SFP+ 10G Transceiver SR Multimode 850nm, DDM, LC duplex, -40..+85°C	MS100700DX-V2
	LPC SFP+ 10G Transceiver LR SingleMode 1310nm, 10km, DDM, LC duplex, -40..+85°C	MS100702DX-V2
	LPC SFP+ 10G Transceiver LR SingleMode TX 1270nm, RX 1330nm, 10km, DDM, LC simplex, -40..+85°C	MS100702DXA-V2
	LPC SFP+ 10G Transceiver LR SingleMode TX 1330nm, RX 1270nm, 10km, DDM, LC simplex, -40..+85°C	MS100702DXB-V2
	Software for Management and Configuration of Networks	
	NMP Web+ Enterprise Base Installation, 1 x usage right for NMP Web+ Enterprise, incl. download and installation of updates, installation of server SW on max. 1 computer, electronic user manual included (.pdf)	MS200500
	NMP Web+ Professional Base Installation, 1 x usage right for NMP Web+ Professional, incl. download and installation of updates, installation of server SW on local computer, electronic user manual included (.pdf)	MS200501
	One year device license grants the right to administrate a MICROSENS device via NMP Web+ for one year	MS200509-01
	Two year device license grants the right to administrate a MICROSENS device via NMP Web+ for two years	MS200509-02
	Additional Software-Variants Additional variants of the device licenses are listed in the data sheet for NMP Web+; please refer to www.microsens.de	

Services

Description	Art.-No.
Warranty Extension following the 24-Month Manufacturer Warranty	
1 year warranty extension	MSGV01
2 year warranty extension	MSGV02
3 year warranty extension	MSGV03
Custom-made Pre-configuration	
Custom-made pre-configuration of a component	MSKonfig
Custom-made pre-configuration (configuration file already available)	MSKonfig-OK
Manufacturer Warranty is defined in General Terms and Conditions of Sale (§10) of MICROSENS GmbH & Co. KG	

Our General Terms and Conditions of Sale (GTCS) apply to all orders. Please refer to: https://www.microsens.com/fileadmin/files/downloads/Impressum/MICROSENS_AVB_EN.pdf

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[1] Will be available soon