

Datasheet

10-Port GbE Industrial Profi Line Ring Switch (Optionally with PoE) with special certification



 Made
 in
 Germany

Features

Version with special certifications

The B-version of the 10 Port GbE-switch is certified for applications in railway (EN50121) and substations (IEC61850).

Ethernetports for demanding environments

The Industrial Profi Line Ring Switch with Gigabit fiber optic ports is the compact, robust and flexible answer to the ever increasing requirement for Ethernet ports in demanding environments.

Robust

Modern, IP-based applications such as networks for large-area WiFi coverage or video surveillance systems become reliable, fail-safe and remotely manageable with this switch. The 10-port GbE ring switch meets the high demands on robustness, fail-safety and offers a wide range of functionalities.

Reliable

In addition to a star-shaped or daisy chained topology (typ. bus), the switch can also be integrated into a ring topology, which is able to switch over within milliseconds if a segment fails and keeps the communication upright.

The powerful software is optimized for a ring topology, it prevents an Ethernet loop. Two independently integrated power supplies allow redundant power supply in DC voltage which is typical in a DIN-rail system (depending on the version typ. 24VDC / 48VDC).

PoE

A dedicated version with PoE function (according to IEEE802.3af) offers the necessary equipment for a PoE end device in a power supply-less solution.

Technical Details

Gigabit Ethernet Switch

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

Environment

Operation	-40..+75 °C
Humidity	5 ..90%, non condensing
Storage	-40..+85 °C

Local Ports (Twisted Pair)

Quantity	8, of which 1x Combo
Type	7x 10/100TX Fast Ethernet, 1x 10/100/1000Base-T (Combo)
Connection	RJ-45 Socket, shielded
Cable type	Twisted-Pair Cable, category 5e, Impedance 100 Ohm, Length max. 100 m
Flow Control	Pause Frames (IEEE 802.3x), configurable
Pin assignment	Auto MDI/MDI-X, Auto Polarity
Power-over-Ethernet (only PM-Models)	Power Sourcing Equipment (PSE) IEEE 802.3af

Uplinks (FO)

Quantity	3, of which 1x Combo
Type	Gigabit Ethernet SFP 3x 100/1000Base-X (DS)
Cable type	Multimode 62,5 or 50/125 µm Single Mode 9/125 µm

Power-over-Ethernet (only PM-Models)

Type	8x PSE
Output	max. 15,4W/Port, Total max. 65W

Displays

Link	Local Ports 1..8 <i>blinking</i> Data transfer <i>green</i> Activated Uplink Ports 9..10 <i>blinking</i> Data transfer <i>green</i> Activated
Power	P 1..2 <i>green</i> Voltage ok <i>orange</i> Voltage too low
Others	Alarm (Al) <i>off</i> Relay contact not activated (normal) <i>orange</i> Relay contact activated Ring Config (Rg) <i>off</i> Ringmode inactive <i>green</i> Ringmode active <i>orange</i> Ring-Error Ring Master (RM) <i>green</i> Ring configuration active, Switch as master conf. .

Control panel

Reset-Button	Reset the switch, restore the last saved configuration IP configuration for management
Factory-Button	Resetting the configuration to factory settings, can be switched off IP-Configuration without reset for management

Alarm contact

Connection	three-pin, potential-free alarm contact
Display	Alarm-LED (see displays)
Event	Activates after failure of a supply voltage ▪ Ring interruption (only for ring operation)

Technical Details

Power supply (24VDC)

Input	24VDC
Power input	typ. 8W
Connection	2x 2-pin. Screw connection (+/-)
Grounding	via DIN rail / grounding screw

Power supply (48VDC – PM-Version)

Input	48VDC
Power input	typ. 8W (Without PoE) max. 65W (incl. PoE)
Connection	2x 2-pin. Screw connection (+/-)
Grounding	via DIN rail / grounding screw

Mechanical

Dimensions	50x116x108mm (WxHxD)
Weight	748g
Cooling	Passive, fanless
Protection class	IP30

Standards

CE	2004/108/EC (EMV) 2006/95/EG (Niederspannung)
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Mounting	DIN EN 50 022
Safety	EN 60950-1:2006
Interference	EN 55022:2006 / A1:2007
Interference resistance	EN 55024:1998 / A1:2001 / A2:2003
Industrial applications	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 EN 61000-6-4:2007
EMV / Interference immunity	EN 50121-4:2006
Shock resistance	EN 50125-3:2003
Pwr. Substation	IEC61850-3:2002 IEEE1613:2003 (class 1)

Reliability

MTBF	400.000h
Method	calculated, MIL HDBK-217F

Features Networkmanagement

You can find a current overview of all network features in our document „[Firmware Features](#)“.

The document is available at www.microsens.de on the relevant product page in the download center.

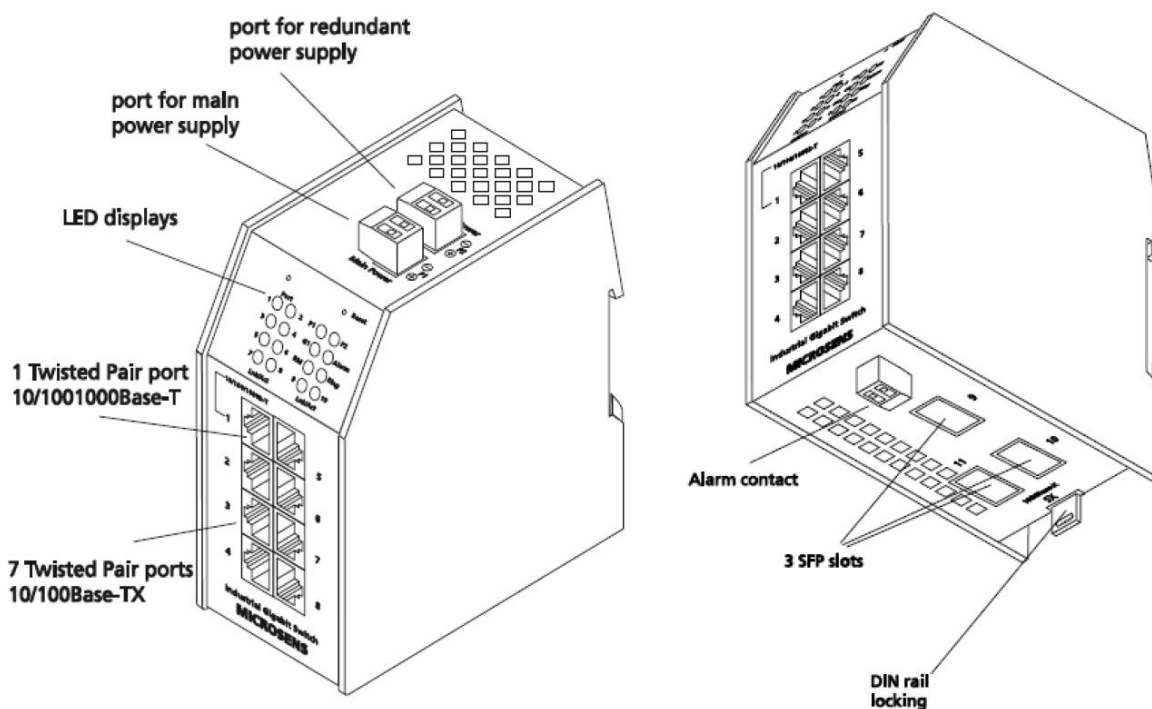
IEEE- / RFC-Standards

The IEEE standards and RFCs supported by the Industrial Profi Line Switch can also be found here „[Firmware Features](#)“.

Quality – Made in Germany

In order to guarantee a consistently high quality of the Switch, all versions are manufactured in Hamm, Germany. Here, all devices are subjected to a so-called burn-in test, which guarantees the reliability of the switch in long-term operation. For this purpose, the switches are tested for a longer period of time in permanent operation (approx. 48 h) under high load to check their functionality. In this way, we are able to detect early failures even before delivery.

Connections



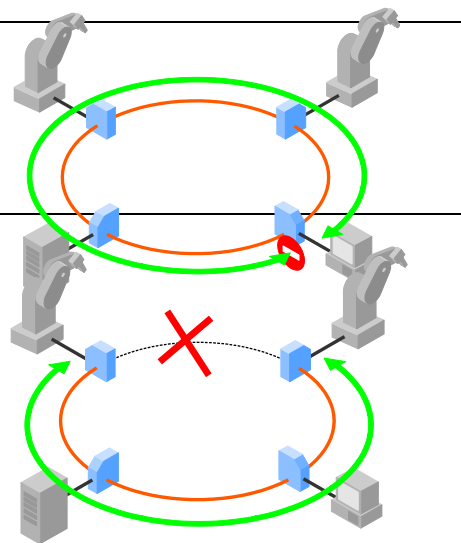
MICROSENS Ring-Topologie

Normal operation

- Switches are configured for ring operation
- One switch is assigned as ring master
- Logical interruption of the ring by the ring master

Ring error

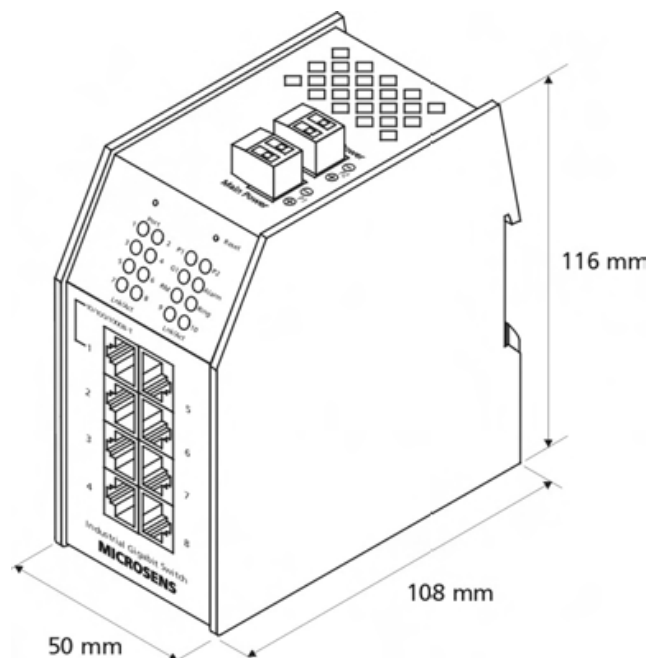
- Switches indicate segment failure via ethernet (fiber-uplink)
- Master receives this information via Ethernet and closes the loop.
- Switches re-learn the current network-topology (MAC-addresses)
- Network functionalities are re-established in less than 50 ms



Configuration

- Switches can be configured for up to two independent rings
- Any port can be selected as ring port

Dimensions

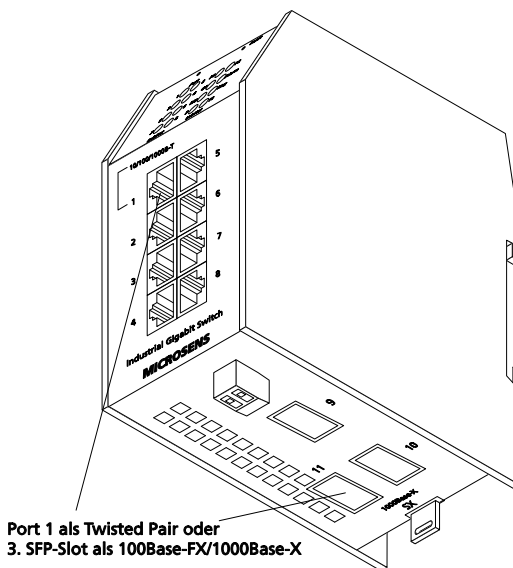


Third SFP-Port

The third SFP slot for a fiber connection is an alternative uplink to the 10/100/1000Base-T connection. This connector is located underneath the device, next to the standard SFP slots.

This port serves as an alternative uplink to the 10/100/1000Base-T port, and is automatically detected when used. An LED indicator shows the activity (whether 100Base-FX/1000Base-X or 10/100/1000Base-T port).

If both ports are in use, the priority is on the fiber optic port. Port 1 (10/100/1000Base-T) is then offline.



Alarm contact

Conection

The three-pin, potential-free alarm contact enables monitoring of the operating status via a connected external signal transmitter.

The contact of the alarm relay is positioned in the form of a 3-pin clamp underneath the device.

Assignment

The switch contact can be assigned as needed:

- NO = Normal Open
- NC = Normal Closed
- Com = Common connection

The signal status is confirmed by LED indicators (alarm LED).

Event

Alarm triggers when the supply voltage is interrupted.

If the switch is configured for ring operation, the interruption of an optical fiber link is also indicated.

Attention!


The maximum contact load capacity is 0.5 A at max. 60 V DC.

Not suitable for the direct connection of 230 VAC devices!

Order Information

Description	24VDC, non-PoE	48VDC, 8x PoE
Industrial Profi Line Switch with power substation and railway certification		
10-Port GbE Industrial Profi Line Switch CERT 1x 10/100/1000T bzw. 100/1000X (Combo), 2x 100/1000X, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC, IEC61850/EN50121-zert.	MS650869M-B	MS650869PM-48-B

Accessories

	Description	Art.-No.
	SFP Transceiver with extended temperature range -40..+85°C (more versions available on request)	
	GbE 850nm Multimode, 1000Base-SX, DDM, LC duplex	MS100200DX
	GbE 1310nm Singlemode, 1000Base-LX, DDM, LC duplex	MS100210DX
	FE 1310nm Multimode, 100Base-FX, DDM, LC duplex	MS100190DX
	FE 1310nm Singlemode, 100Base-FX, DDM, LC duplex	MS100191DX
	external power supplies for industrial use 24 VDC (spec. certification)	
	DIN-Power supply 24 VDC / 2,5 A, Wide range input 90..264 VAC / 85..200 VDC extended operating temperature range -40..+70°C EN50121	MS700482-24B
	external power supplies for industrial use with PoE 48VDC (special certification)	
	DIN-Power supply 48 VDC / 1,25 A, Wide range input 90..264 VAC / 85..200 VDC extended operating temperature range -40..+70°C EN50121	MS700482-48B
	Network management	
	NMP Professional – Network Management Plattform Software incl. one year update license	MS200160-1
	NMP Professional – additional update license for n years	MS200161-n
	NMP Server – Network Management Plattform Software incl. one year update license	MS200164-1
	NMP Server – additional update license for n years	MS200165-n
	NMP Server - additional client access licenses	MS200166-Cn

Service

	Description	Art.-No.
	Warranty extension after 24-month manufacturer's warranty**	
	Warranty extension 1 extra year	MSGV01
	Warranty extension 2 extra years	MSGV02
	Warranty extension 3 extra years	MSGV03
	Pre-configuration according to customer requirements	
	Pre-configuration according to customer requirements	MSKonfig

** The manufacturer's warranty is defined in the general terms and conditions (AGB (§9)) of MICROSENS GmbH & Co. KG.

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