

Datasheet

10-Port GbE Industrial Profi Line Ring Switch opt. with PoE



■ Made
■ in
■ Germany

Features

Ethernet ports 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 the 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.

Special models with specific certifications (separate data sheet)

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A special version of the switch ("B-version") is certified especially for applications in railway (EN50121) and substations (IEC61850).

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	-20..+60 °C
Operation (only B/X-Models)	-40..+75 °C
Humidity	5 ..90%, non condensing
Storage	-40..+85 °C

Local Ports (Twisted Pair)

Quantity	8, from which 1x Combo (only for SFP-Version)
Type	7x 10/100TX Fast Ethernet, 1x 10/100/1000Base-T (Combo – only for SFP-Version)
Connection	RJ-45 Socket, shielded
Cabletype	Twisted-Pair cable, Cat. 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-Version)	Power Sourcing Equipment (PSE) IEEE 802.3af

Uplinks (FO)

Quantity	3, from which 1x Combo (only for SFP-Version)
Type	Gigabit Ethernet SFP 3x 100/1000Base-X (DS) SC Multimode (850nm) 2x 1000Base-SX SC Singlemode (1310nm) 2x 1000Base-LX
Cable type	Multimode 62,5 or 50/125 µm Single Mode 9/125 µm

Power-over-Ethernet (only PM-Version)

Type	8x PSE
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Output	max. 15,4W/Port, total max. 65W
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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
Other	Alarm (Al) <i>off</i> Relay contact not activated (normal) <i>orange</i> Relay contact not activated Ring Konfig (Rg) <i>off</i> Ringmode not active <i>green</i> Ringmode active <i>orange</i> Ring-Error Ring Master (RM) <i>green</i> Ring configuration active, Switch as master conf.

Storage Media Card (nur SMC-Version)

Type	Removable SD-Card
Part number	MS140890X-4GB

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 <ul style="list-style-type: none"> ▪ 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

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

Standards

CE	2004/108/EC (EMV) 2006/95/EG (Low voltage)
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 (only B-Version)	EN 50121-4:2006
Shock resistance (only B-Version)	EN 50125-3:2003
Pwr. Substation (only B-Version)	IEC61850-3:2002 IEEE1613:2003 (class 1)

Reliability

MTBF	400.000h
Methode	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

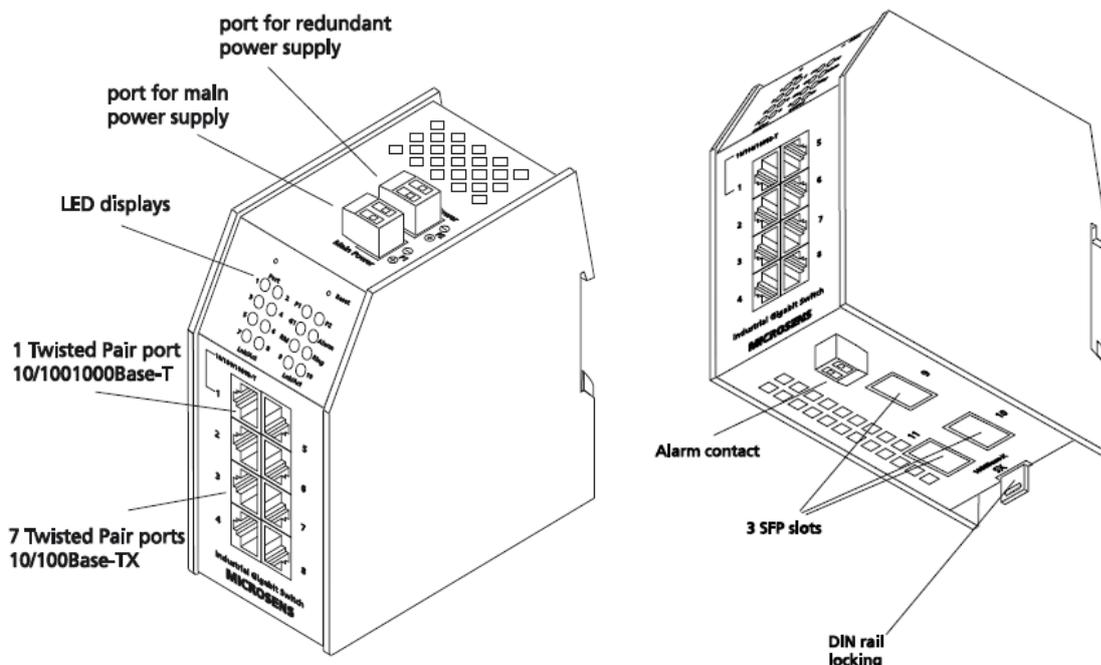
The IEEE standards and RFCs supported by the Industrial Profi Line Switch can also be found here „[Firmware Features](#)“.

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



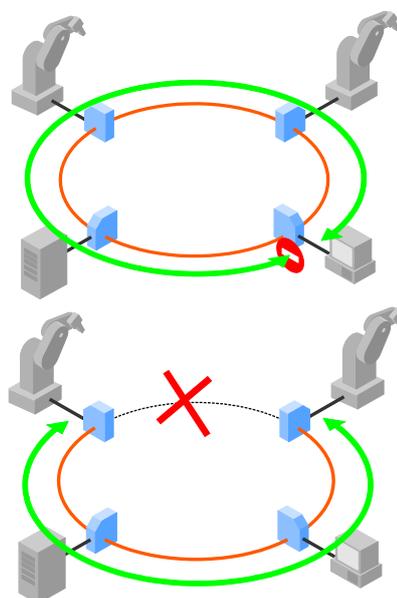
MICROSENS Ring-Topology

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

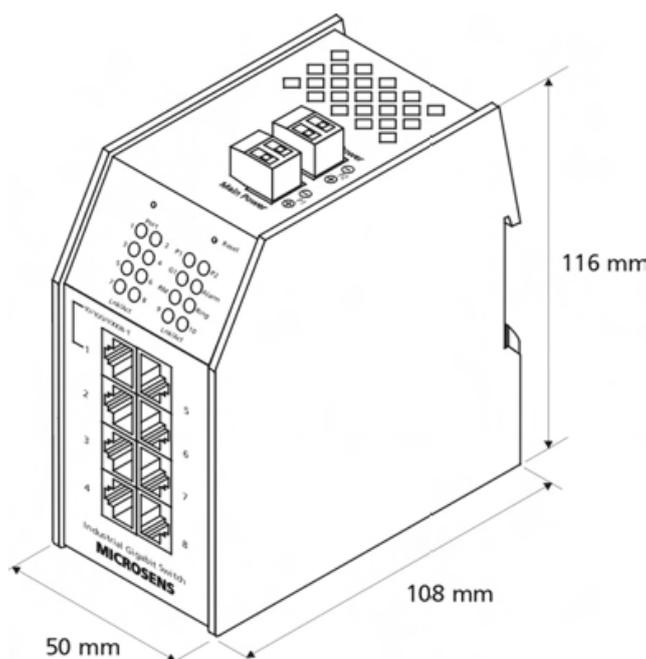
- Switches indicate segment failure via ethernet (fiber-uplink)
- Master receives this information via Ethernet and closes the loop.
- Switches re-learn the current network topology (MAC-addresses)
- Network functionalities are re-established in less than 50 ms



Configuration

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

Dimensions

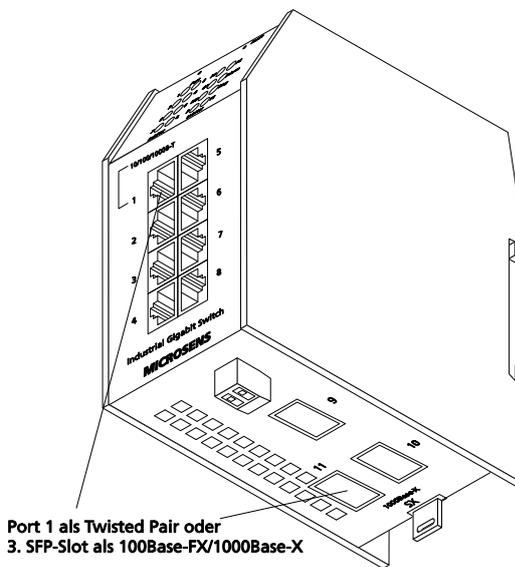


Third SFP port (SFP models only)

The third SFP slot for a fibre 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 fibre optic port. Port 1 (10/100/1000Base-T) is then offline.



Alarm Contact

Connection

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 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!

Memory Card („SMC“-Version only)

Function

The SD-card is used to permanently store the configuration of the switch. With the help of the memory card it is therefore possible to transfer an existing configuration to another device without having to use network management.

This function is particularly useful in the event of a device failure. The configuration can be transferred without further effort.

Requirement

The SD Card has to be installed in the industrial switch.

Only the original MICROSENS Card should be used. Only this guarantees long-term stability (extended temperature range).

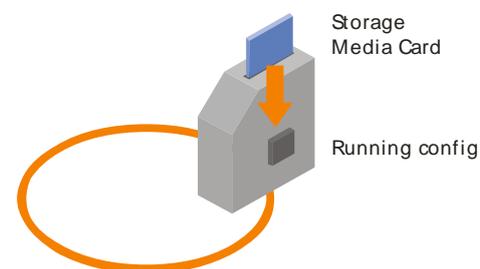
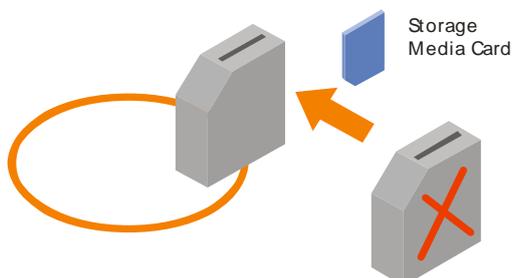
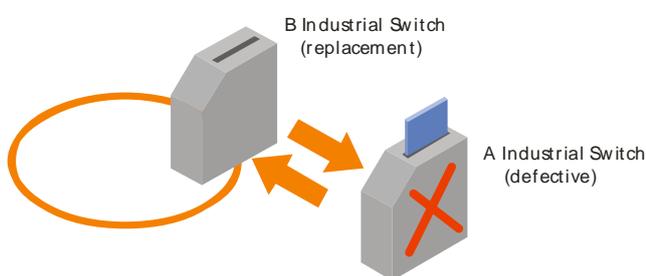
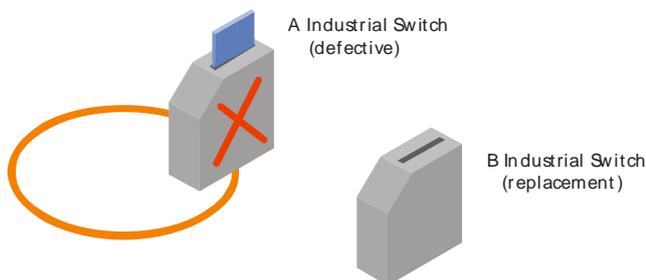
No file system, which can be read out via a PC, is used on the Card.

After the final configuration or startup of the switch, the configuration has to be stored on the memory card. This is not done automatically.

For using the SD card, the manual has to be consulted.

Scope of delivery

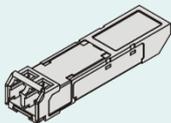
A SD Media Card is included in the scope of delivery of the switch. Additional storage cards are available under the article number MS140890X-4GB.



Order Information

Description	24VDC, non-PoE	48VDC, 8x PoE
Industrial Profi Line Switch		
10-Port GbE Industrial Profi Line Switch 1x 10/100/1000T bzw. 100/1000X (Combo), 2x 100/1000X, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC	MS650869M-V2	MS650869PM-48-V2
Industrial Profi Line Switch, extended temperature range		
10-Port GbE Industrial Profi Line Switch X 1x 10/100/1000T bzw. 100/1000X (Combo), 2x 100/1000X, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC, ext. temp. -40..+75°C	MS650869MX-V2	MS650869PMX-48-V2
Industrial Profi Line Switch, SD-Card version		
10-Port GbE Industrial Profi Line Switch PoE SD 1x 10/100/1000T PoE bzw. 100/1000X (Combo), 2x 100/1000X, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC, SD-Card slot	MS650869MSMC-V2	MS650869PMSMC-48-V2
Industrial Profi Line Switch, SD Card-Version extended temperature range		
10-Port GbE Industrial Profi Line Switch PoE SD 1x 10/100/1000T PoE bzw. 100/1000X (Combo), 2x 100/1000X, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC, SD-Card slot Ext. temp. -40..+75°C	MS650869MXSMC-V2	MS650869PMXSMC-48-V2
Industrial Profi Line Switch, fixed optics SC Multimode		
10-Port GbE Industrial Profi Line Switch 2x 1000SX SC/MM 850nm, 1x 10/100/1000T, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC	MS650851M	MS650851PM-48
Industrial Profi Line Switch, fixed optics SC Singlemode		
10-Port GbE Industrial Profi Line Switch 2x 1000LX SC/SM (10km) 1310nm, 1x 10/100/1000T, 7x 10/100TX, 2x VDC, DIN-Rail, managed, RC	MS650852M	MS650852PM-48

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 Single mode, 1000Base-LX, DDM, LC duplex	MS100210DX
	FE 1310nm Multimode, 100Base-FX, DDM, LC duplex	MS100190DX
	FE 1310nm Single mode, 100Base-FX, DDM, LC duplex	MS100191DX
	External power supplies for industrial use 24 VDC	
	Industrial DIN-Rail Netzteil 24VDC/1,25A (30W) Input 100..240VAC/120..375VDC, Out: 24..28VDC, -20..+70°C	MS700440
	external power supplies for industrial use with PoE 48VDC	
DIN-Rail power supply 48..56 VDC / 1,25 A, Wide range input 85..264 VAC/ 85..375 VDC	MS700430	

Accessories

	Description	Art.-No.
	external power supplies for industrial use 24 VDC (spec. certification)	
	DIN rail 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 rail 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 Platform Software incl. one year update license	MS200160-1
	NMP Professional – additional update license for n years	MS200161-n
	NMP Server – Netzwerk 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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