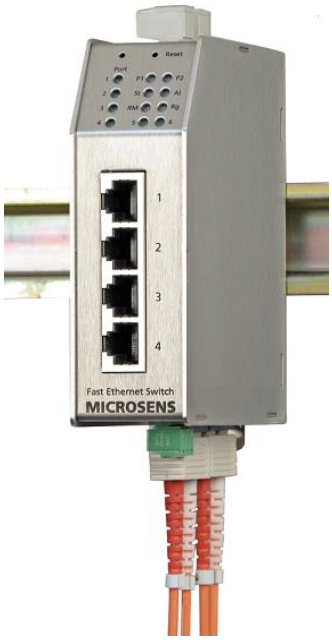
MICROSENS

Datasheet

6-Port FE Industrial Profi Line Switch (optionally with PoE)



Made in Germany

Features

Ethernet ports for demanding environments
The Industrial Profi Line Ring Switch with Fast Ethernet 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 6-port FE 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.

Technical Details

Fast Ethernet Switch

Type	Fan less Fast Ethernet Switch Layer 2+, IEEE 802.3 compliant
Performance	Store-and-forward Full wire-speed, non-blocking on all ports
MAC-Addresses	1.024 adresses, automatic Learning und Aging
VLANs	Tagging IEEE802.3ac Priorisation IEEE 802.1p VLAN-IDs 0..4095 stat. / dyn. VLAN-Table
QoS	4 Hardware-Queues per Port Prioritisation after: • IPv4/IPv6 • VLAN Prio IEEE 802.1p • Port Weighting configurable

Environment

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

Local Ports (Twisted Pair)

Quantity	4
Type	Fast Ethernet, Dual Speed 10/100Base-TX
Connection	RJ-45 Socket, shielded
Kabeltyp	Twisted-Pair cable, Category 5, 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	2
Type	Fast Ethernet (100Base-FX)
Cable type	Multimode 62,5 oder 50/125 µm Single Mode 9/125 µm

Power-over-Ethernet (only PM-Version)

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

Displays

Link	Local Ports 1..4 *blinking* Data transfer *green* activated Uplink Ports 5..6 *blinking* Data transfer *green* Activated
Power	P 1..2 *green* Voltage ok *orange* Voltage too low
Other	Alarm (Al) *off* Relay contact not activated (normal) *orange* Relay contact activated Ring Config (Rg) *off* Ringmode inactive *green* Ringmode active *orange* Ring-Error Ring Master (RM) *green* 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

Alarm contact

Connection	2-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. 6W
Connection	2x 2-pin, Screw connection (+/-)
Grounding	via DIN rail / grounding screw

Power supply (48VDC – PM-Version)

Input	48VDC
Power input	typ. 6W (without PoE) max. 65W (incl. PoE)
Connection	2x 2- pin, Screw connection (+/-)
Grounding	via DIN rail / grounding screw

Mecanical

Dimension	36x116x108mm (WxHxD)
Weight	790g
Cooling	Passive, fanless

Standards

CE	2004/108/EC (EMV) 2006/95/EG (Low Voltage)
Mounting	DIN EN 50 022
Safety	EN 60950-1:2006
Interference emission	EN 55022:2006
Interference resistance	EN 55024:1998

Reliability

MTBF	400.000h
Method	calculated, MIL HDBK-217F

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 triggered 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!

Features Network management

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

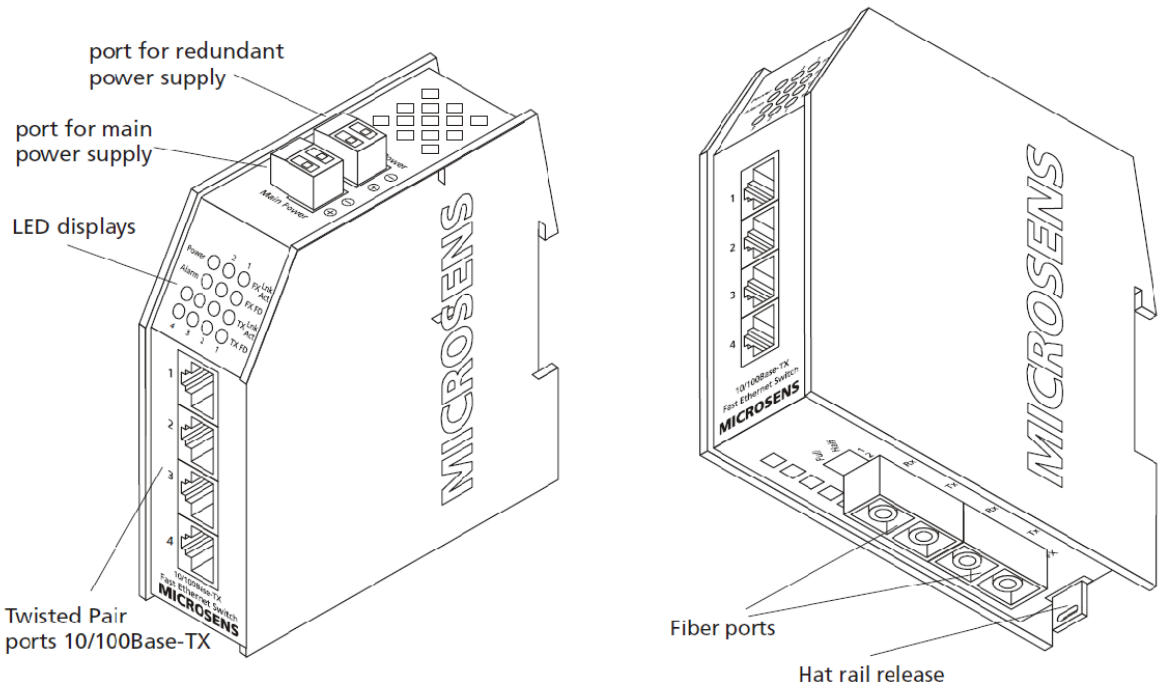
The IEEE standards and RFCs supported by the Industrial Profi Line Switch can be found here „Firmware_Features".

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.

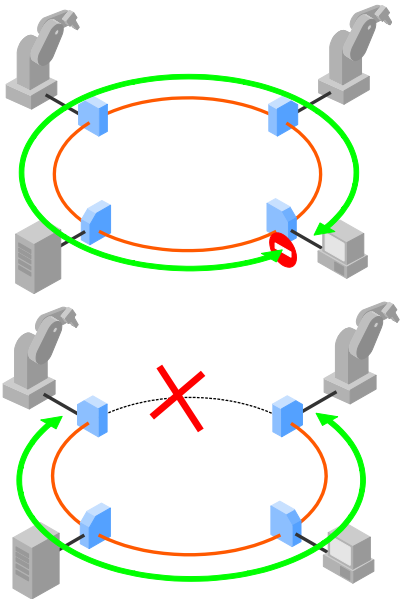
Connections



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



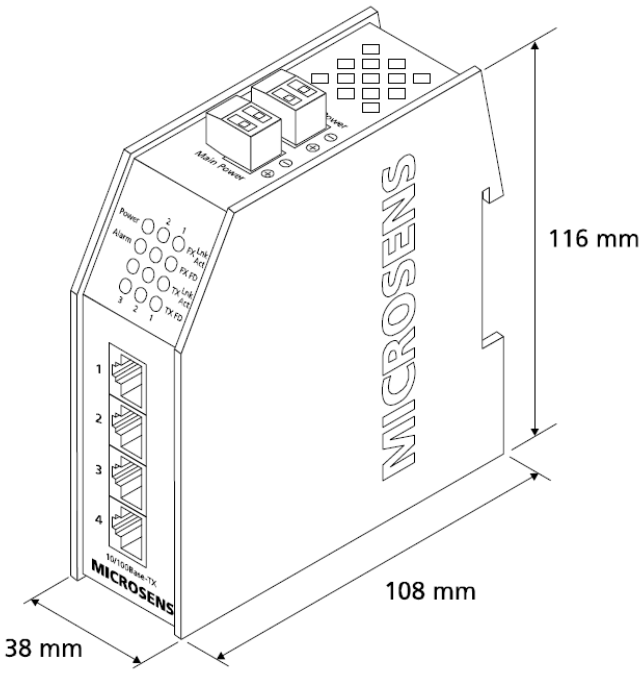
Ring error

- 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



Order Information

Description	24VDC, non-PoE*	48VDC, 4x PoE
Industrial Profi Line Switch		
6-Port FE Industrial Profi Line Switch 2x 100FX **ST/MM** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650501M**	**MS650501PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **SC/MM** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650502M**	**MS650502PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **SC/SM (15km)** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650504M**	**MS650504PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **ST/SM (15km)** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650505M**	**MS650505PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **SC/SM (40km)** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650506M**	**MS650506PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **ST/SM (40km)** 1310nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650507M**	**MS650507PM-48**
6-Port FE Industrial Profi Line Switch 2x 100FX **SC/SM (80km)** 1550nm, 4x 10/100TX, 2x VDC, DIN-Rail, managed, RC	**MS650509M**	**MS650509PM-48**

* also available in the X version with extended operating temperature range (-40..+75°C)

Accessories

	Description	Art.-No.
	**External power supplies for industrial use 24 VDC**	
	Industrial DIN-Rail power supply 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-power supply 48..56 VDC / 1,25 A, Wide range input 85..264 VAC/ 85..375 VDC	**MS700430**
	**Networkmanagement**	
	NMP Professional – Netzwerk Management Plattform 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.