

Gigabit Ethernet Switch for Industrial Fiber Ring Application

- **Fast Ethernet 10 Port Switch, 2x 1000Base-SX/LX, 1x 10/100/1000T, 7x 10/100Base-TX**
- **Fiber ports offering the construction of fault tolerant rings**
- **Integrated SNMP/web based management**
- **Full VLAN functionality/data prioritisation according IEEE_802.1p/Q**
- **Redundant 24 V DC power input, effective overvoltage protection**
- **Robust and compact design, mounting on DIN-rail**



Description

Ethernet has been used in the controlling level of industrial applications for many years. Ethernet is continuing to beat the field bus technologies used to date in coupling equipment controls, sensors and actors. Process error-tolerant network components are absolutely essential because the network availability has a direct effect on production.

It is precisely to prevent this that MICROSENS has developed a mechanism for which a patent is pending that enables the Ethernet network to be reconfigured within milliseconds if an error occurs.

Management

The switches can be configured and monitored

either by SNMP or a PC-based management tool (Device Manager). In addition to the Device Manager all statuses are displayed web based using an integrated HTTP server.

Versatile Ports

In addition to the two 1000Base-SX/LX fiber connections for chain linking several industrial switches, the MICROSENS industrial switches also offer seven 10/100Base-TX connections for linking such Ethernet terminals as machine controls, network uplinks, consoles and other network participants and one 10/100/1000Base-T port for a central uplink connection.

Rugged Industrial Design

For particularly demanding uses, the industrial switches

are designed in a suitably robust construction with an integrated clamping device for direct assembly on 35 mm DIN rails. The devices meet the requirements for IP protection class 30 and are also designed for a larger temperature range.

Several Power Supplies to choose from

The power supply of the devices is done by an external, central power supply unit. With the second power input the device can be supplied with redundant power. All electrical ports are either galvanic isolated or equipped with an effective over voltage protection.

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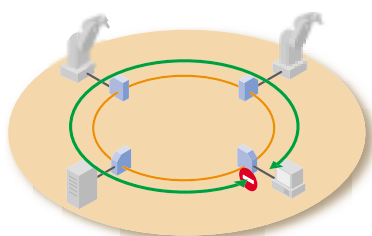
Ring Function

The two fiber ports of the device can be used to build up a ring structure.

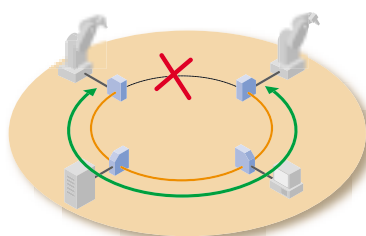
In normal operation the ring connection is logically interrupted by monitoring device (switch configured for Ring Master mode). In case of failure (broken connection or switch damage) the logically

interrupted connection is activated by the Ring Master.

A big advantage of this solution is, that no additional central device is necessary for the redundancy feature. Even if the ring master itself fails, the interruption of the ring stays at this location.



Normal operation status



Data transmission in failure status

Order Information

Art.-No.	Description	Connectors
MS650850M	Gigabit Ethernet Switch with ring function 1x 10/100/1000Base-T, 7x 10/100Base-TX, 2x 1000Base-SX, ST multimode 850 nm	4x ST, 8x RJ-45, 2x Power, 1 x Alarm
MS650851M	Gigabit Ethernet Switch with ring function 1x 10/100/1000Base-T, 7x 10/100Base-TX, 2x 1000Base-SX, SC multimode 850 nm	4x SC, 8x RJ-45, 2x Power, 1 x Alarm
MS650852M	Gigabit Ethernet Switch with ring function 1x 10/100/1000Base-T, 7x 10/100Base-TX, 2x 1000Base-SX, SC single mode 1310nm, 10 km	4x SC, 8x RJ-45, 2x Power, 1 x Alarm

Accessories

Art.-No.	Description	Connectors
MS200150	Device Manager PC-Software V3.x MICROSENS Switch-Management (necessary for Ring Configuration!)	
MS200220	Firmware SNMP-Management	
MS700420	Hat-rail power supply 24 Watt 24 V / 1.0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	Hat-rail power supply 60 Watt 24 V / 2.5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	Hat-rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700430	Hat-rail power supply 60 Watt 48 V / 1.25 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700434	DC/DC hat-rail power supply 24 Watt 24 V / 1.0 A, wide range input 18-75 V DC	In: 3-pin Out: 2-pin

Technical Specifications

Type

Manageable Gigabit Ethernet switch with
1x 10/100/1000Base-T,
7 x 10/100Base-TX and 2 x 1000Base-SX/LX
uplink for industrial fiber ring

Fiber type

Multimode 62,5/125 or 50/125µm (1000Base-SX),
Single mode 9/125µm, (1000Base-LX)

Cable type

Shielded Twisted Pair cable,
100 Ohm, Category 5,
Pinout RJ45-ports auto crossing

Data rate

10, 100 or 1000 Mbps

Optical parameters

Multimode
min. distance: 550 m (full duplex,
50/125µm)
Output power: -10 dBm
Sensitivity: -20 dBm
Wavelength: 850 nm

Single mode

min. distance: 10 km (full duplex)
Output power: -8 dBm
Sensitivity: -22 dBm
Wavelength: 1300 nm

LED displays

Port 1-8

For copper ports, Link (on), and activity (flashing)

G1

Green: Copper port 1 with Gigabit Speed (otherwise 10 or 100 Mbps speed)

Port 1-8

For fiber ports, Link (on), and activity (flashing)

P1

Green: Main power supply active, ready for operation

Orange: Main power supply interrupted

P2

Green: Main power supply active

Orange: Main power supply interrupted

Ring

Switch configured for ring mode

RM

Switch is configured as ring master.

Alarm

Alarm contact released (missing power supply or recovery state in ring mode)

Mounting

35 mm hat rail,
according DIN EN 50 022

Power supply

18 - 36 V DC (optional 48 V DC)/ max. 250 mA by external power supply connections with screw terminals, redundant port

Dimensions

50 x 108 x 116 mm (w x d x h)

Operating temperature

-20°C to 60°C

Storage temperature

-20°C to 80°C

Rel. humidity

5% to 90% non condensing

Management

- Status information via web based management (http-Server) or support of SNMPv1
- Configuration via PC based management tool (Device Manager)

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