Entry Line
Industrial Gigabit Ethernet Switch
4x 10/100/1000Base-T, 2x SFP Ports
with PoE+ (30W per port)

MICROSENS

General

The IP protocol has already left the in-house environment and is going to take all remaining communication areas. Industrial Ethernet already is an established idea, describing the reliable use of Ethernet components in harsh environments.

Because of the large number of these applications the market requires simple and also reliable and cost effective products. With the new Industrial Ethernet Entry Line MICROSENS fulfils these requirements. The products are very compact and include:

- 5 and 8 port Fast Ethernet switches
- 8 Port Gigabit Ethernet switch
- Switches with fiber-uplink
- Media converter for Fast Ethernet and Gigabit Ethernet
- Device Server for the conversion of serial interfaces (RS-232/422/485) to IP.

All new devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New developments are focusing on increasing the port numbers and further implementation of Gigabit Ethernet.

Fig. 1: Entry Line Gigabit Ethernet Switch with PoE+

Benefits

System Interface/Performance

- 4x10/100/1000Base-T(X) PoE (P.S.E.) ports
- Supports P.S.E. based on IEEE 802.3at standard up to 30 Watts per port
- SFP port supports 100Base-FX and 1000Base-X speed
- Supports jumbo frame up to 9KBytes
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store and forward transmission
- Supports flow control
- Alarm output relay for power failures
- DIP switches for SFP speed and alarm output

Power Supply

- Redundant Power Design
- 50 – 57 V DC power Input Range
- Overload Current Protection

Chassis/Installation

- IP-30 Protection
- DIN Rail and Wall Mount Design

Standard Compliance

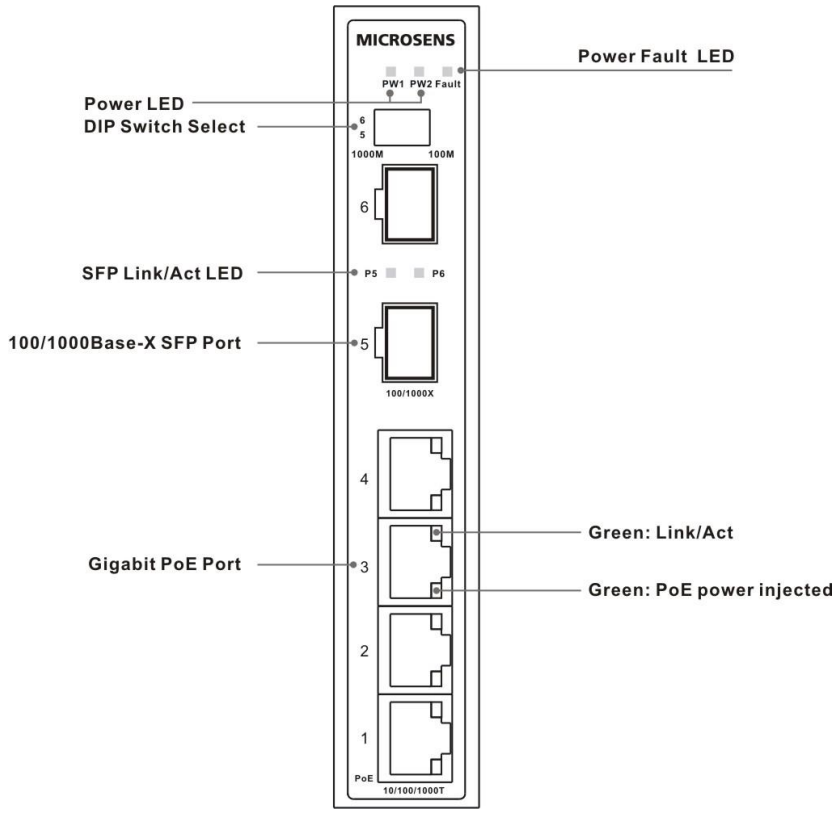
IEEE Standards

- IEEE 802.3 for 10Base-T
- IEEE 802.3u for 100Base-TX
- IEEE 802.3ab for 1000Base-T
- IEEE 802.3z for 1000Base-X
- IEEE 802.3x for Flow control
- IEEE 802.3at PoE specification (up to 30 Watts per port for P.S.E.)

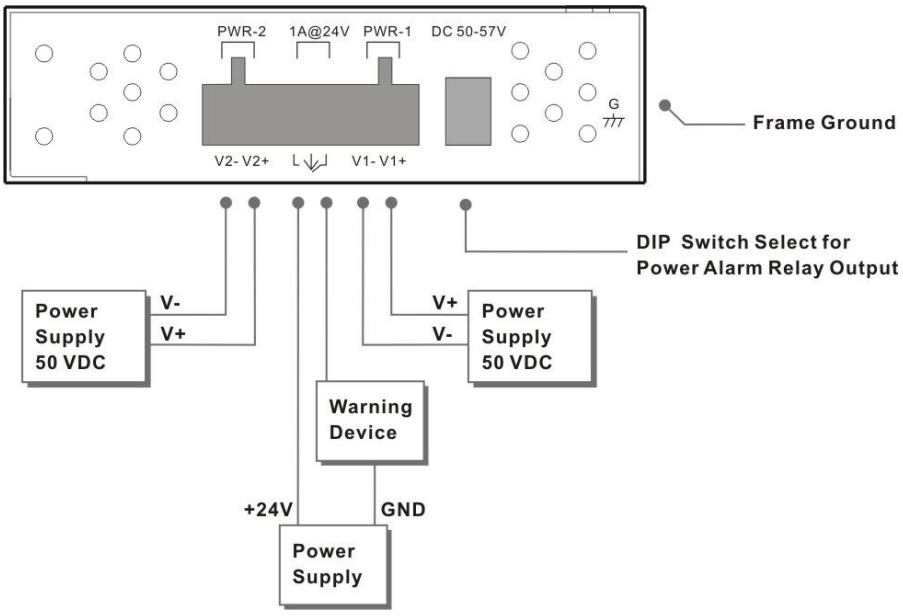
Technical specifications

Type	Gigabit Ethernet PoE+ Switch with 4x 10/100/1000Base-T, 2 x 100/1000X SFP slot (100 Mbps and 1 Gbps)
Fiber type	Depending on the used SFP
Cable type	Shielded Twisted Pair cable, 100 Ohm, min. Category 5, Pinout RJ-45 ports auto crossing
Data rate	10, 100 or 1000 Mbps
Power over Ethernet	PoE+ up to 30 W per port according IEEE802.3at
LED displays	Power: (ok: green, failure: amber) Per port: (link: static green, activity: flashing green) PoE (PoE injected: green) Per SFP: (link: static green, activity: flashing green)
Mounting	35 mm hat rail, according DIN EN 50 022 and wall mount
Power supply	50 - 57 V DC / connections with screw terminals, redundant ports
Power Consumption	typ. 6.3 W (without PoE for end devices)
Dimensions	26.1 x 94.9 x 144.3 mm (w x d x h)
Weight	410 g
Operating temp.	-40°C to 75°C
Storage temp.	-40°C to 85°C
Rel. humidity	5% to 95% non condensing
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1

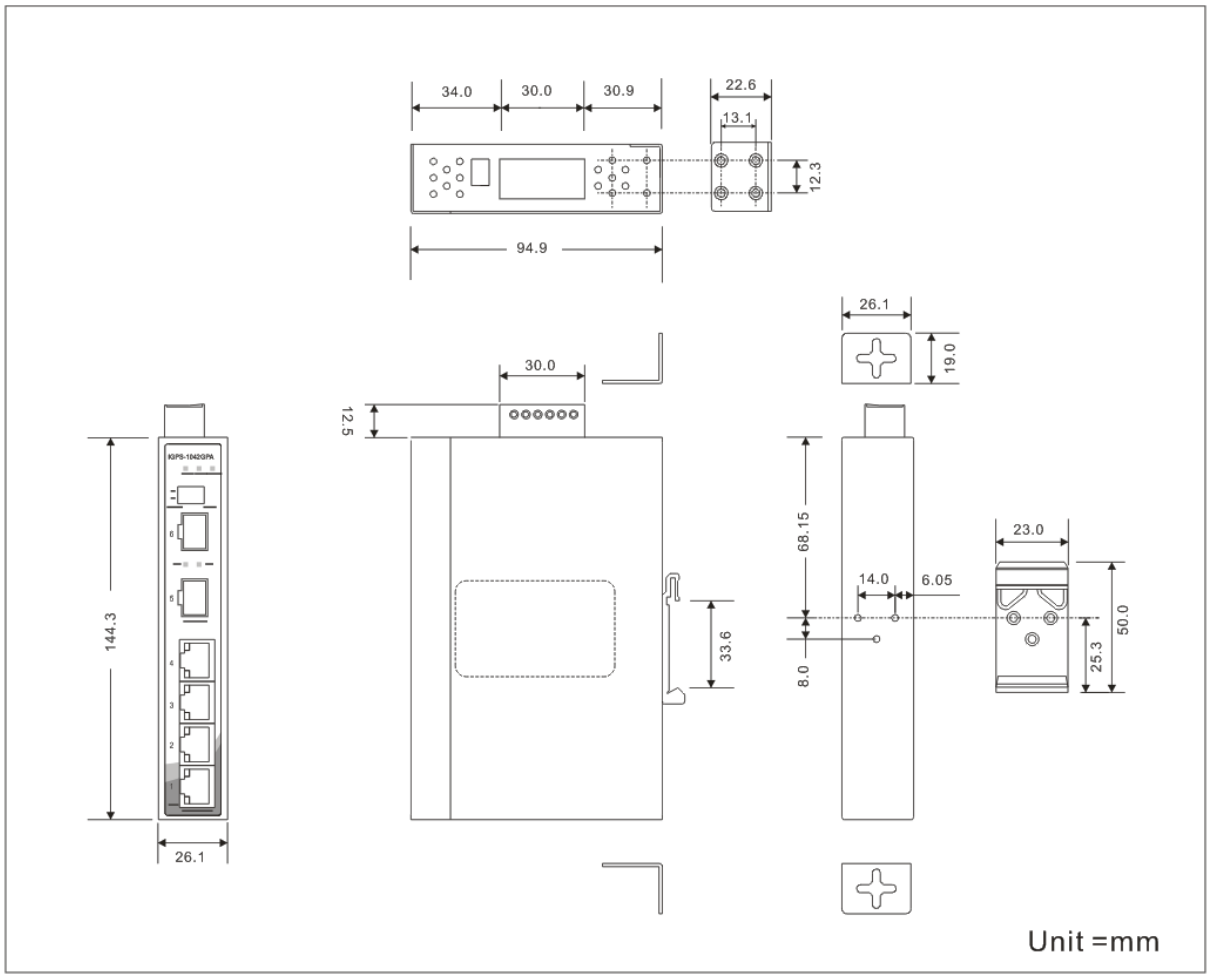
Front Panel



Power Connections



Dimensional Drawings



Switch Features

The integrated switch has a store-and-forward architecture and can transmit all packets non-blocking between the five ports at full wire speed. For data buffering the switch incorporates 1MBit of memory.

Up to 1024 different MAC addresses can be stored simultaneously in the internal switch address tables.

Twisted Pair Connections

The integrated auto-crossing function of all Twisted-Pair ports makes the use of crossed patch cables unnecessary. The switch automatically detects the pinout of the connected cable and adapts the port accordingly. For all connections standard 1:1 Twisted Pair cables can be used.

The Autonegotiation mechanism detects automatically the speed and transmission mode (full or half duplex) between connected ports. A manual configuration is not required.

Power supply

The power supply is done by an external power supply with an output voltage of 50 - 57 V DC. This power supply is not included at delivery, but can be ordered separately (e.g. MS700455). The connection is done by the pluggable screw terminals on the top of the device. The connection of a redundant power supply can be done by the second screw terminal.

Safety Notes

WARNING: Infrared radiation as used for data transmission within the fiber optic, although invisible to the human eye, can nevertheless cause damage.

To avoid damage to the eyes:

- never look straight into the output of fiber optic components – danger of blinding!
- cover all unused optical connections with caps.
- commission the transmission link only after completing all connections.

The MICROSENS active laser components (as SFP pluggable fiber optic Transceiver) used with this product comply with the provisions of **Laser Class 1**.

DANGER: Conductive components of power and telecommunications networks can carry dangerously high voltage.

To avoid electric shock:

- Do not carry out installation or maintenance work during lightning storms.
- All electric installations must be carried out in accordance with local regulations.

Order Information

Art.-No.	Description	Connectors
MS655202PX	Industrial Gigabit Ethernet PoE+ Switch, Entry Line, 4x 10/100/1000Base-T (P.S.E), 2x 100/1000X SFP Ports	2x SFP slot 4x RJ-45 2x Power 1x Alarm

SFP Optical Transceivers

Art.-No.	Description	Connectors
MS100190DX	SFP Pluggable Transceiver Fast Ethernet 1310nm Multimode LC, ext. temp. range -40..85°C	LC duplex
MS100191DX	SFP Pluggable Transceiver Fast Ethernet 1310nm Single Mode LC, ext. temp. range -40..85°C	LC duplex
MS100200DX	SFP Pluggable Transceiver Gigabit Ethernet 850nm Multimode LC, ext. temp. range -40..85°C	LC duplex
MS100210DX	SFP Pluggable Transceiver Gigabit Ethernet+Gigabit Fibre Channel, 1310nm Single Mode FP Laser min. 10km, LC, ext. temp. range -40..85°C	LC duplex

Accessories

Art.-No.	Description	Connectors
MS700455	DIN Rail mounting power supply 50 Watt 48VDC/1.05 A, input voltage 85–264 VAC, screw terminals, temp. range -10°C..70°C	In: 3-pin Out: 4-pin
MS700456	DIN Rail mounting power supply 120 Watt 48VDC/2.5 A, input voltage 93-132/180-264 VAC, screw terminals, temp. range 35°C..70°C	In: 3-pin Out: 6-pin
MS700457	DIN Rail mounting power supply 240 Watt 48VDC/5 A, input voltage 93-132/180-264 VAC, screw terminals, temp. range -35°C..70°C	In: 3-pin Out: 6-pin

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