TOP FEATURES

- Four Gigabit terminal device connections (10/100/1000Base-T), optionally with PoE+
- Top network availability with two Gigabit uplink ports
- Setup of redundant ring structures with fiber optic or copper connections
- Robust electronic components with extended temperature range
- Maximum performance and fault tolerance, extensive security functions
- Shortest possible recovery times thanks to a microSD card with firmware and configuration file
- Optional microApps for smart building functions, can be completely integrated into MICROSENS Smart Building solutions
- Versions for horizontal and vertical installation

RUGGEDIZED MICRO SWITCH

The economically efficient bridge between Office and Industrial Ethernet

The Ruggedized Micro Switch of MICROSENS closes the gap between office networking and Industrial Ethernet. It is the ideal solution for typical IT applications in infrastructures which do not justify an investment in Industrial Ethernet components, but cannot make do with standard components for an office environment, either.

MICROSENS IS KNOWN FOR COMPETENCE ON THE SECTOR OF ACTIVE FIBER OPTIC SOLUTIONS

For 25 years, MICROSENS has been offering high-quality, active fiber optic components for corporate networks, manufacturing companies, the industrial sector, and access networks. Development and manufacture "Made in Germany" make a significant contribution to the product quality.

www.microsens.com/ruggedized-micro-switch

MICROSENS

RUGGEDIZED MICRO SWITCH

Bridging between Office and Industrial Ethernet

Made
in
Germany

Indoor and outdoor networking

WLAN, IP video-surveillance, and technical building equipment have long since left the protected sector of office buildings. Hotspots, cameras, and building automation systems are operating in car parks, on forecourts of buildings, or at bus stops and train stations, just to mention a few examples. Conventional office switches are out of place here, but Industrial Ethernet components with their wide range of features are not always required, either. A solution is required which closes the gap between office application and Industrial Ethernet.

Proven technology in a harsh environment

For decades, users have relied on office and industrial switches of MICROSENS. With the Ruggedized Micro Switch, MICROSENS offers the ideal solution for all applications where users wish to exploit the benefits of the proven Micro Switches outside of protected office environments as well. The compact, robust switch offers availability, reliability, and security. It combines office and industrial applications in a particularly economical manner.

Compact switch with many options

The Ruggedized Micro Switch offers six Gigabit Ethernet ports, four of them are front-end 10/100/1000Base-T ports with PoE+ for the connection of terminal devices, and two are hidden uplink/downlink ports with Twisted Pair and/or fiber optic ports. The switch management makes it possible to switch on/off the Power-over-Ethernet function for a remote power reset of the terminal devices, which is particularly advantageous for hard-to-reach terminal devices, such as WLAN access points and IP cameras. In addition, the switch detects failed network connections and independently performs a reset, according to its configuration. The two uplink/downlink ports allow for the uncomplicated setup of star, ring, or bus structures, so that the switch can be integrated into efficient redundancy concepts for increased network availability. Due to the extended temperature range of –25 to +65 degree centigrade, the Ruggedized Micro Switch can be operated in environments where switches for office environments are no longer an option. With the well-tried and tested access security features of

MICROSENS it can be integrated into existing security concepts without any problems. The Ruggedized Micro Switch is also available in a version with an RJ-45 uplink. Existing copper cabling can thus continue to be used, which allows for a particularly economical solution. Power is supplied either via Power-over-Ethernet (PoE PD) or using DC voltage in the range of 44 to 57 V DC or 230 V AC. Horizontal

and vertical casing variants are available for an ideal, user-friendly installation. The switch can be mounted on DIN rails in distribution units and casings both in indoor and outdoor environments. Due to the fanless design, air cooling is not required. The switch can also be installed in IP rated casings. In addition, extensive, practical accessories are available for optimum installation and operation.

IP67-Mastbox

No matter whether for connecting WLAN access points, IP cameras, meteorological stations, barrier systems, or control and surveillance systems to an IP network– the pre-assembled, compact IP67 mast box is the optimum solution wherever the Ruggedized Micro Switch has to be installed in harsh environments indoors or outdoors on a mast. It comes with an integrated, compact splice box for fiber optic connections and also offers connection options for the power supply of the switch. On request, it is also available with a surge protection

module. In combination with the Ruggedized Micro Switch, the IP67 mast box becomes a high-performance and compact indoor and outdoor active distributor.

MICROSENS
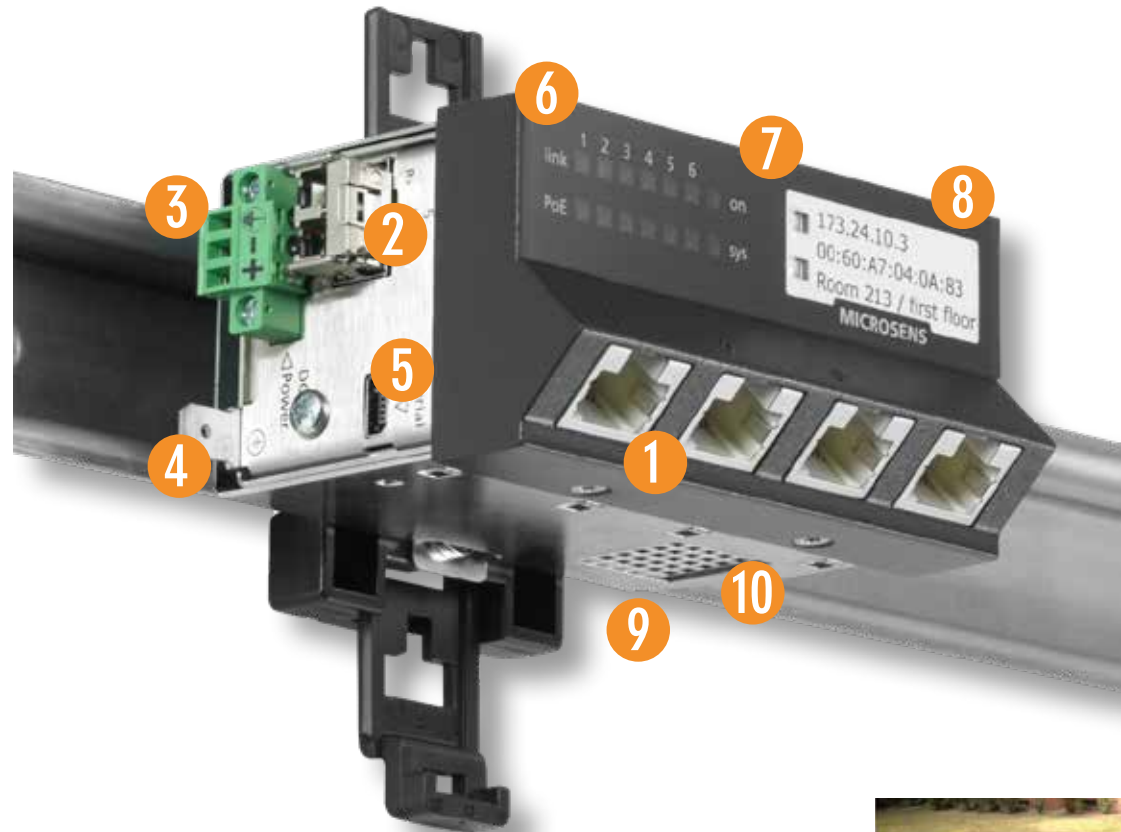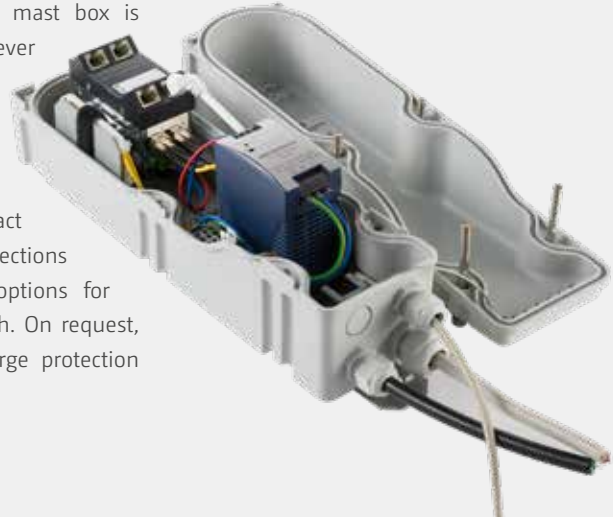
TECHNICAL FEATURES

- 4x 10/100/1000 Mbps local user connections
- Two Gigabit Ethernet uplink/downlink ports for enhanced fault tolerance through redundancy, such as Dual Homing and ring structures, optionally with
    - 2x SFP slots for purely fiber-based networks
    - 1x SFP slot and 1x RJ-45 connector
    - 2x RJ-45 connections
- Convenient administration via Web, Telnet, and SNMP interface, and MICROSENS NMP software. Integration of / interface to already existing network management systems via SNMP
- Extensive options for automation through comprehensive command line interface
- Integration with MICROSENS NMP for easy and efficient configuration, administration, and monitoring of networks.
- Firmware and configuration on the microSD card for the shortest possible recovery times
- High security through the use of encrypted protocols, such as SSH and HTTPS
- Port security according to IEEE 802.1X, Radius, compatible with all conventional NAC solutions
- Power supply optionally as
    - 230 V AC for direct supply from the power network
    - 54 V DC for the connection to an existing DC power network, optionally with external power supply
- High energy efficiency through the use of state-of-the-art chip technology, Energy-Efficient Ethernet (EEE)
- Fast, tool-free snap-in installation thanks to Adapter for mounting on DIN rails available
- Internationally standardised 45 mm fitting dimension

Photos left:
wilhelm.tel offers customers in Norderstedt a nationwide Wi-Fi based on ruggedized Micro Switches from MICROSENS

APPLICATION EXAMPLES

WiFi HotSpots

The number of high-performance, mobile devices is constantly growing. Modern man is used to being networked wherever he is. More and more companies and communities offer Wi-Fi accesses. Compact, robust switches, which can be mounted on street light posts or integrated into existing street-side distribution units, ensure a consistent and economically efficient broadband supply. The management function enables the administrator to monitor the network operation and to perform a power reset for the access points via mouse-click in the case of failures, without the necessity of deploying a person on-site.

IP video-surveillance

A modern video-surveillance system makes a valuable contribution to enhanced security. At the same time, the cameras with their weatherproof casings are meant to integrate discreetly into the cityscape or the façade of the building. Switches to connect to the network must be space-saving and work reliably over a wide temperature range – these are key features of the Ruggedized Micro Switch. Due to its smart functions, it can also interact with sensors and actuators and take over automation functions independently.

Ticket machines and parking meters

Even under adverse weather conditions, ticket machines and parking meters installed in out-door environments should function reliably in order to ensure the smoothest possible ticket sale. Failures concern many travellers and the operator must be able to react quickly. The Ruggedized Micro Switch offers reliable remote monitoring. The remote management issues a warning message to the network administrator in the event of deviations from the target state, enabling them to intervene in good time.

Parking decks and underground car parks

Building automation systems have long since also been working in parking decks and under-ground car parks. Lighting control, elevator control systems, alarm systems, acoustics units, and car park management with occupancy detection are only a few examples. Unlike the systems installed in buildings, however, the building automation components here have to work within a very wide temperature range. The Ruggedized Micro Switch works reliably in temperatures from -25 to +65 °C. Heated distribution rooms are therefore not needed.

RUGGEDIZED MICRO SWITCH

1 Gigabit copper ports (4x)
Four high-performance 10/100/1000 Mbps ports with PoE+ for terminal devices, such as WLAN access points, IP cameras, building automation devices, Smart Building solutions, or any other IP-capable terminal device.

2 Gigabit uplink ports
Two Gigabit uplink ports for maximum network availability and reliability, optionally with two SFP slots for purely fiberoptic-based networks or one SFP slot for fiber optics and an RJ-45 connection for copper data lines. The second port allows the setup of redundant connections in a ring, bus, tree, and star structure for increased reliability. It can also be used as a down-link port to connect a second switch.

3 Power supply access
Power supply optionally with 230 V AC from the power network, with 12 or 48..54 V DC from the existing DC voltage or an optional power supply.

4 Grounding Clamp
Clamp for the connection to the equipotential bonding rail.

5 Extension Port
Serial RS-232 console port for optional accessories, also configurable as RS-232 device server.

6 LED-Display
Clear display of all cross-device functions: availability, link status, data activity, booting process.

7 Reset and system button
Reset button for resetting the switch or for loading the last stored configuration (direct hardware function). System button for requesting the IP configuration via management or resetting to the factory settings.

8 Labelling field
Removable labelling field, specially integrated into the device cover and, thus, protected during surface cleaning.

9 microSD card slot
The firmware and configuration data are stored on the microSD card. In case of replacement, this ensures the shortest possible recovery times.

10 Gigabit downlink port
10/100/1000Base-T port for the connection to a central network switch via copper lines or for cascading to another Micro Switch.