MICROSENS

PROFI LINE MODULAR

Top Performance in Smallest Spaces

**Made
in
Germany**

TOP FEATURES

- Gigabit performance with Energy-Efficient Ethernet

- Power-over-Ethernet+ (802.3at), maximum of 30 W per port; optional 60W per port variant available

- Extended temperature range

- Compact metal housing for DIN rail assembly

- Robust design, extension modules available

- Redundant power inputs

- Replaceable SD card for firmware and configuration

- Fault tolerance with minimum recovery times

- Also available for 19" mounting or as 7-port variant

- Optional with certification for rail and power substation applications

- Also with 10G-uplink

PROFI LINE MODULAR

Top Performance in Smallest Spaces

The new Profi Line Modular switches, from MICROSENS, offer maximum performance and flexibility in smallest spaces. Robust, modular, expandable and designed for greatest reliability and shortest recovery times, the Profi Line Modular series has become the first-choice solution for Industrial Ethernet.

Reliability and Flexibility

In the industrial sector, Ethernet is well established as the standard communication protocol. The continuously growing number of applications and IP-capable devices leads to a drastic increase of the data throughput and higher demands made on reliability and flexibility. In this context, Industrial Ethernet Switches are the decisive nodes which connect automation technology and IP networks with each other reliably and with the highest possible availability. The Profi Line Modular series was developed for deployment in industrial environments and sets new standards in terms of reliability and flexibility. Robust, modularly expandable, and designed for maximum availability and the shortest recovery times, the Profi Line Modular series is the first choice for Industrial Ethernet.

Highest Gigabit Performance in Smallest Spaces

Even the basic switch module already offers thirteen Gigabit ports, four of which, as combo ports, can be expanded with SFP modules to fiber optic connections. Despite its space-saving design, it has two alarm inputs/outputs, for example for cabinet monitoring or integrating a sensor/actuator. The copper ports offer PoE/PoE+, which make it possible for connected devices to be supplied with power economically and without additional cabling work. The switch itself can also work without its own power supply, supplied via PoE/PoE+ as a powered device.

Modular Design Which is Easy to Expand

The modular design of the Profi Line Modular switches enables expansions tailoured to needs, which limits the initial investment to the minimum necessary. The customer only pays for what is actually needed and can expand the scalable switch according to requirements („pay as you grow"). The expansion concept of the switch is designed that no oversized backplane has to be fitted with the initial installation. This way, the Profi Line Modular series does not squander any valuable space in the wiring cabinet.

Future-Proof Device Design

The hardware of the Profi Line Modular series is designed today for future functions, which are easy to activate with firmware upgrades. This is facilitated by the latest high-performance switching chipsets in combination with a powerful ARM processor. As an established, stable operating system, Linux offers a solid foundation for an intelligent, open and long-term reliable platform.

SD Card for Firmware and Configuration

Trend-setting: the switch operating system, firmware, and configuration data are stored on an SD card in the basic module. If a switch basic module ever needs to be replaced, the existing SD card is simply inserted in the new module which automatically accepts all settings. This means there is no need for complex reconfigurations or installing software images – the recovery time is reduced to a minimum. The SD card can be swapped over by the company-internal maintenance team without any special IT know how, no specialist has to be on-site in the event of a fault, which in turn drops the operating costs.

Quality Made in Germany

The design of the Profi Line Modular series was developed from scratch at the site in Germany – with the company' own development teams for the hardware and software and based on its own know-how. Development and manufacture „Made in Germany" make a significant contribution to the product quality. In the area of effective office networks as well as industrial production – the Profi Line Modular series is the optimal choice everywhere where high demands are made in terms of fault tolerance and shortest possible recovery times.

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SOFTWARE FEATURES

Future-proof architecture
- High-performance CPU with Linux kernel for high system stability by means of embedded function modules
- Extension of functions by means of firmware updates
- IPv4 and IPv6 dual stack have already been integrated
- Support of 256 VLANs
- Spanning Tree Protocol (STP/RSTP/MSTP)
- Quality-of-Service (QoS) with 4 priorities per port
- Jumbo frames up to 10 kilobytes
- LACP, LLDP, and LLDP-MED for topology detection

Management Interfaces
- Web Manager with high-performance graphical user interface
- SNMP for the integration into management system platforms
- Comfortable CLI for automation via scripts
- Integrated SFTP server for direct access to device files, e.g. log files, configuration, CLI scripts

NMP (Network Management Platform)
- Integration into MICROSENS NMP software for simple and efficient configuration, administration, and monitoring of networks

Security Features
- Port-based authentication according to 802.1X with dynamic VLAN assignment
- Secure protocols for device management, can additionally be switched off individually
- Internal log file permits logging of all system events

Highly Secure Protocols for Device Management
- HTTPS for Web Manager and NMP
- SNMPv3 for management integration
- SSH for Command Line Interface (CLI)
- SFTP for file access
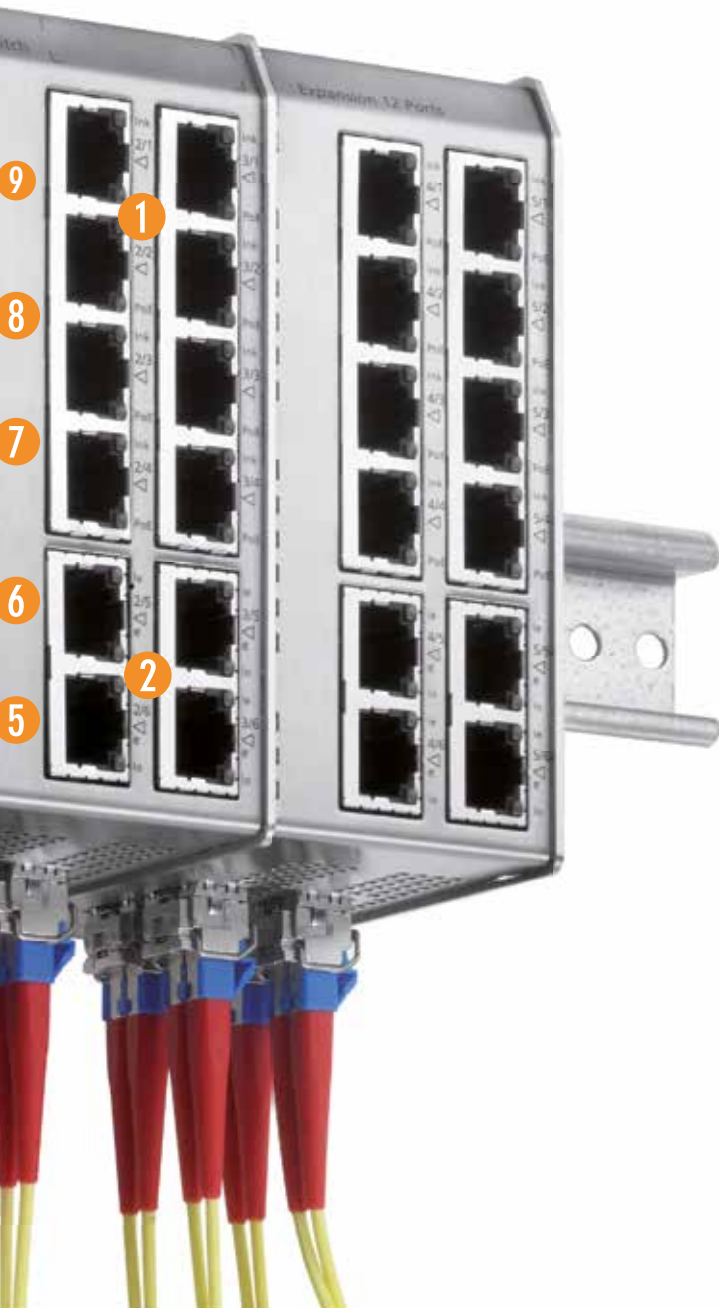
PROFI LINE MODULAR

1 Gigabit Copper Ports (8x)
10/100/1000Base-T, Energy-Efficient Ethernet, PoE/PoE+ (802.3at) output (PSE) to feed connected devices, e.g. WLAN access points, IP cameras, sensors, etc.

2 Gigabit Combo Ports (4x)
10/100/1000Base-T, Energy-Efficient Ethernet, these copper ports can be used if a corresponding SFP slot remains unused.

3 SFP Slots for Fiber Optic Transceiver (4x)
100/1000Base-X (Dual Speed), SFP slots, only the actually required transceivers have to be plugged. Unused SFP slots are available as copper ports.

4 Relay Contact (2x) / Digital Input (2x)
Galvanically separated switch output, e.g. as alarm contact. Galvanically separated input, e.g. for cabinet monitoring. Function can be configured via the switch management.

5 Gigabit Copper Port (1x)
10/100/1000Base-T, Energy-Efficient Ethernet PoE+ input (PD) forremote feeding of the switch via the Ethernet port.

6 Terminal / Expansion Port
Serial (RS-232) terminal port for the access to the Command Line Interface (CLI). Permits outband management of the device.

MAXIMUM SCALABILITY COMPACT DESIGN

The basic switch module can completely be configured according to the individual requirements and demands of the customer. Extension modules with six or twelve Gigabit Ethernet ports are simply assembled at the side of the basic module. Like the basic module, the extension modules also offer gigabit combo ports to accommodate additional fiber optic connections.

The maximum extension level of the switch consists of 25 Gigabit Ethernet ports. The basic module alone is equipped with 13 Gigabit ports. Currently three different modules are available as expansions. The mechanical stability is maintained with each extension. This is ensured by a sophisticated mechanism which snaps into place in a reliable manner and which can be unlocked again centrally.

6-Port Expansion Module

4x 10/100/1000T PoE+ (PSE)
2x Dual Media Ports: 100/1000X
    SFP-Slot oder 10/100/1000T

13-port Basic Switch

8x 10/100/1000T PoE+ (PSE)
1x 10/100/1000T PoE+ (PD)
4x Dual Media Ports: 100/1000X
    SFP-slot or 10/100/1000T

12-Port Expansion Module

8x 10/100/1000T PoE+ (PSE)
4x Dual Media ports: 100/1000X
    SFP-slot or 10/100/1000T

10G Expansion Module

6x 10/100/1000T
2x 10GBASE-X-Uplink slots for
    SFP+ Transceiver

Modular switches for highest reliability

7 USB-Port
USB port to connect supported peripheral devices.

8 Reset / Factory Settings
Restart of the switch by pressing the Reset button. Loading of the factory settings by pressing the Factory button. This is helpful when unintentionally making erroneous configurations.

9 LED Display
Clear overview of all functions provided across devices: status power supply, system status, redundant rings, I/O ports

10 Redundant Power Connections
For the uninterrupted power supply from two separated power sources. The status is monitored by the management. Longrange input for the operation with 24 and 48/54 VDC (PoE and PoE+).

11 SD Card
The device configuration and firmware are stored on an SD card. If the switch is replaced, it suffices to reinsert the SD card. All device settings will be taken over.

12 Backplane Module Connection
Extension modules can be connected with the basic switch, simply by plugging them.