

Compact Design Short Recovery Times Highest Flexibility
Maximum Investment Protection High Economic Efficiency
Protection High Economic Efficiency Highest Flexibility

MICROSENS



PROFI LINE MODULAR

Made
in
Germany



TOP FEATURES

- Gigabit performance with Energy-Efficient Ethernet
- Power-over-Ethernet+ (802.3at), maximum of 30 W per port
- Extended temperature range
- Compact metal housing for DIN rail assembly
- Robust design, extension modules available
- Redundant power inputs
- Linux kernel, open standards, long-term availability
- SD card for firmware and configuration
- Fault tolerance with minimum recovery times

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

On the industrial sector, Ethernet has established itself 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 reliably and with the highest possible availability with each other. The Profi Line Modular series was developed for deployment in industrial environments and sets new standards in terms of reliability and flexibility.

Highest Gigabit Performance in Smallest Spaces

Even the basic switch module already offers thirteen Gigabit ports, of which four, as combo ports, can be expanded with SFP modules to fiber optic connections. Despite its space-saving design, it has two alarm inputs/outputs, e.g., for cabinet monitoring or integrating a sensor/actuator. The copper ports offer PoE/PoE+ connected devices can 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 tailored 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 back-plane 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

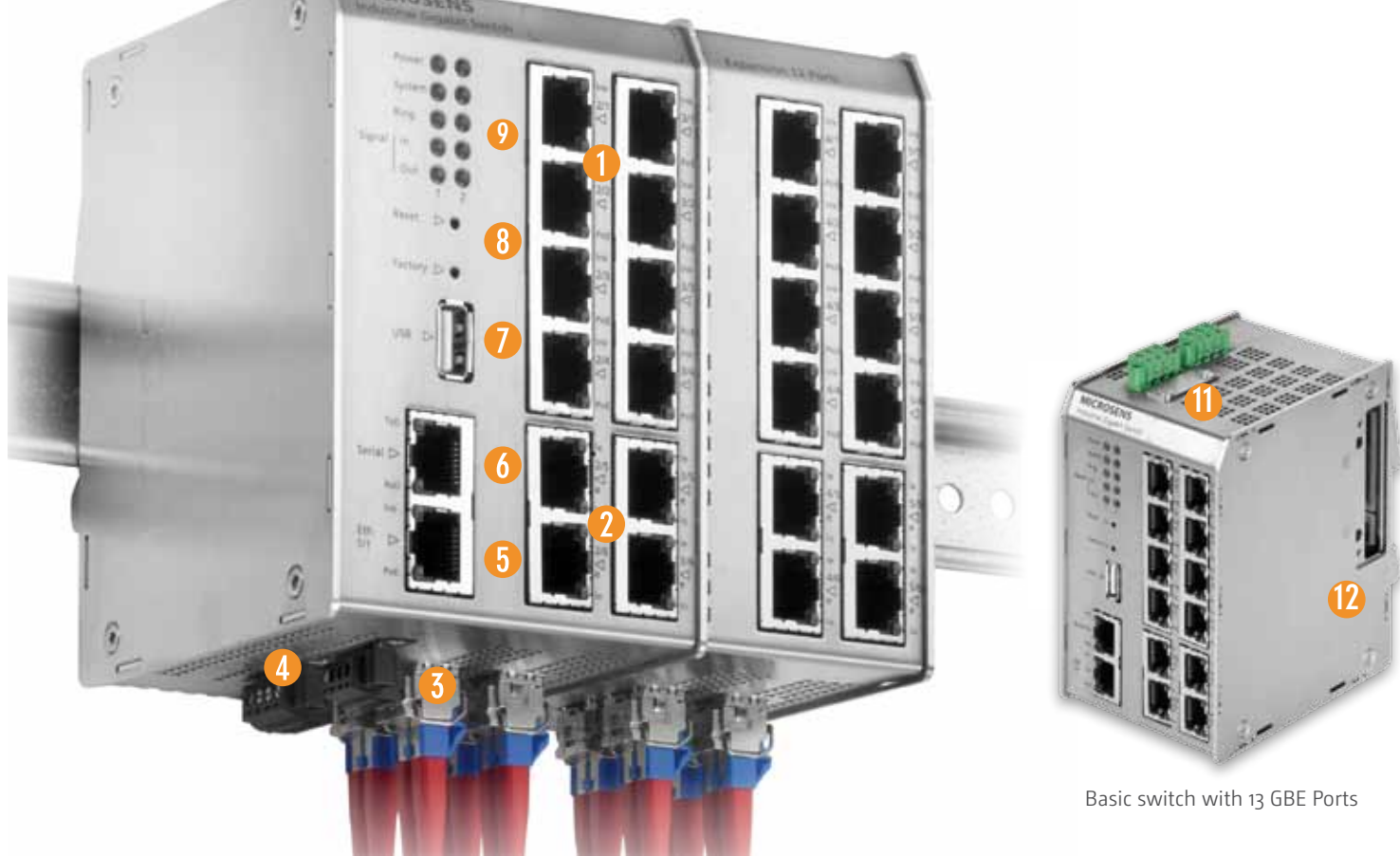
The hardware of the Profi Line Modular series is designed today for future functions, which are easy to activate with firmware upgrades. This is facilitated by the latest high-performance switching chipsets in combination with a powerful ARM processor. As an established, stable operating system, Linux 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, by development teams for the hardware and software of the proper company and based on the company's own know-how. Development and manufacture „Made in Germany“ make a significant contribution to the product quality. The Profi Line Modular series is the optimum choice everywhere where high demands are made in terms of fault tolerance and shortest possible recovery times.



Basic switch with 13 GBE Ports

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)**
10/100/1000Base-X (Dual Speed), SFP slots, only the actually required transceivers have to be plugged. Unused SFP slots are available as copper ports.
- 4 Switch 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) for remote 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.
- 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. Long-range 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.

SOFTWARE FEATURES

Integrated device management

- High-performance CPU with Linux kernel for high system stability by means of embedded function modules
- The scope of functions can be extended 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
- 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

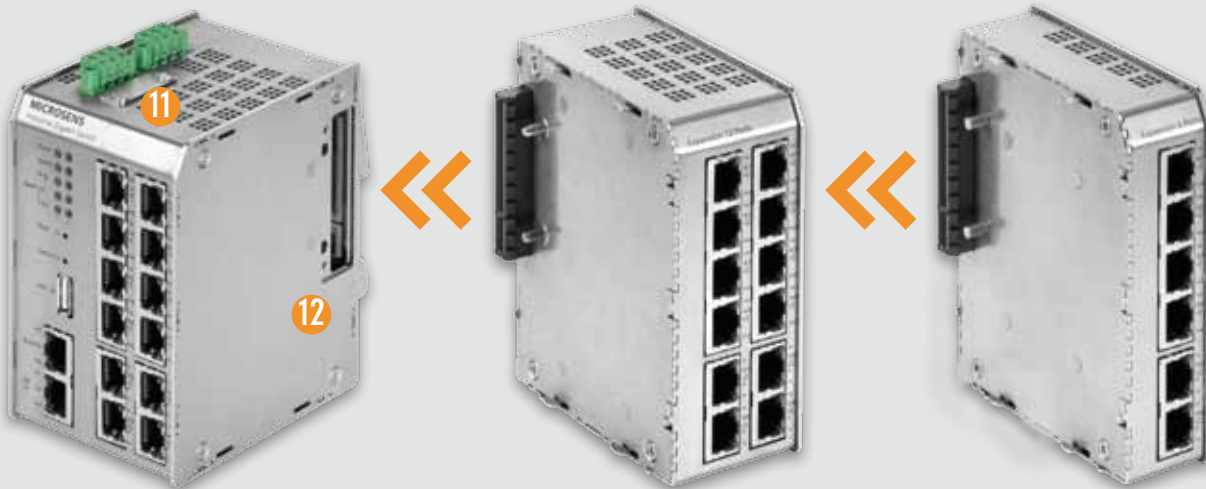
Highly Secure Protocols for Device Management

- HTTPS for Web Manager and NMP
- SNMPv3 for management integration
- SSH for Command Line Interface (CLI)
- SFTP for file access

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. Further modules are planned, for example for common industrial bus technologies or with simple I/O ports. The backplane is also designed in a modular way and can be extended with each module. This means that no valuable space will be wasted in the distribution unit by an oversized backplane. 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 centrally unlocked again.



Basic switch with 13 GBE Ports

12 Port GBE Expansion Module incl.
4 combo-ports (copper, SFP)

6 Port Expansion Module incl.
2 combo-ports (copper, SFP)

Highly Future-Proof Maximum Performance Compact Design High Economic Efficiency Highest Flexibility
Compact Design High Economic Efficiency Highly Future-Proof Short Recovery Times Highly Future-Proof
Highly Future-Proof Maximum Performance Highest Flexibility Compact Design Maximum Investment Protection

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

For 20 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.

