# GigaSwitch V5 TP(PD-F+) SFP-VI 54V MED

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**LANactive 6 port managed Full Gigabit FTTO Switch with POE+ powering**

- 2 uplink ports (1x SFP, 1x TP)
- 4x isolated 10/100/1000 Mbps Ethernet ports (4 kV / 2 MOPP)
- Rotatable switch head for vertical and horizontal installations
- Memory card slot
- Wide input voltage range 46 ... 57V DC (typ. 54V DC)
- Powered Device function via PoE acc. to IEEE 802.3af or at

## Description

The GigaSwitch V5 series enables the secure, switched Gigabit Ethernet networks in the Fiber to the Office (FttO) environment. The new generation of FTTO switches is equipped with state-of-the-art processor technology with real-time support and provides enhanced performance, security, redundancy and convenient management functionality.

**Medical switch with galvanic isolation and Powered Device capability**

The medical version of the GigaSwitch uses isolators for protection of patients, operators and the IP equipment and prevention of crosstalk between different medical systems. The integrated network isolators have a minimum withstand voltage level of 4 kV and 2 MOPP according to IEC / EN 60601-1. They prevent unwanted voltage differences between devices over the network cabling. The switches provide the necessary security for the entire system. Devices, which are classified as medical components, must fulfil higher requirements as in IEC 60950-1 (Safety of equipment information technology). Nexans GigaSwitch MED provides Ethernet connectivity for critical medical applications acc. to IEC/EN 60601 (requirements for medical devices) and four galvanic separated 10/100/1000 Mbps network user interface ports and two uplink Ethernet ports with gigabit performance.

**Snap-In installation**

The very compact design of LANactive devices allows a tool-less snap-in installation into the standard 45 mm cable duct systems or floor boxes without special mounting accessories. FTTO installations can be realized in the shortest possible time in combination with the new Click-In power supply series.

**Memory Card**

The optional memory card automatically save and storage the complete current configuration and firmware of the device. In addition, each memory card has its own MAC address.

**Switch Management with Client Server Architecture**

The new management platform allows simple and secure configuration from a centralized location. Rapid Spanning Tree, RADIUS, prioritization, security, LLDP, LACP, IGMP, CDP, QinQ, diagnostics and SNMP traps are just some of the implemented features. In combination with Nexans Device Management software, NEXMAN, a larger number of switches can be managed and monitored at the same time. NEXMAN allows automatic distribution of master configurations and firmware updates.

Made in Germany

**Galvanic isolation / 2MOPP**

**LANactive**
Switch to the future

**NEXMAN**
Client/Server Licence

## Standards

**IEC 60601-1**
IEEE 802.3
IEEE 802.3u
IEEE 802.3ab
IEEE 802.3z
IEEE 802.3x
IEEE 802.1AB
IEEE 802.1D
IEEE 802.1Q
IEEE 802.1X
IEEE 802.1AX
IEEE 802.3ad

| Real-Time OS | Compact design | Noiseless | Fast installation | Redundancy | Operating temperature | Electromagnetic shielding |
|---|---|---|---|---|---|---|
| **Yes** | **45x90mm** | **Yes** | **Yes** | **Yes** | **0 ... 45 °C** | **Yes** |

**Nexans**

## Characteristics

### General

- 6 Port Switch with 1x VARIO SFP and 1xTP Uplinks
- Full Gigabit 10/100/1000 Mbps
- Store and Forward switch, self-lerning (Layer-2 switch)
- Support of Jumboframes (9.600 bytes)

### Medical application

- Meets the requirements of 4 kV / 2 MOPP isolation in accordance with standards for medical electrical equipment
- 4x separated and isolated 10/100/1000 Mbps Ethernet-ports (4 kV / 2 MOPP) according to IEC / EN 60601-1

### Memory card (optional)

- SD Memory card with own MAC-Address
- Backup for switch configuration to memory card and booting for device from memory card

### Power supply

- Wide input range 46 ... 57V DC (typ. 54V DC)
- Powered device capability acc. to IEEE 802.3af or at

### Twisted Pair User interfaces

- rotatable TP module for horizontal or vertical installations
- four RJ45 user interfaces (10/100/1000 Mbps)
- MDI/MDI-X auto-crossover and auto-polarity
- Cable Diagnostic for accurate localization of errors on the twisted pair cable links

### Function input

- Freely programmable function input with alarm function

### Energy management

- EEE - Energy Efficient Ethernet
- ECO Mode for Twisted Pair ports
- time-controlled power management

### Mechanics

- Compact housing (90mm x 45mm)
- Suitable for the international 45mm snap-in format
- low installation depth (35mm)

### Management hardware platform

- On-Board High-Performance Management for Nexans Switches
- Real-Time Kernel for time-critical applications
- Internal management bus connection via Gigabit
- Dual firmware storage for safe operating and updates
- Switching between firmware versions without corruption

### Software Management features (extract)

- Configuration is stored non-volatilely in the flash and optionally on the memory card
- SNMP access control, SNMPv1/2
- Global management access control via Access list (ACL) with up to 16 IP ranges
- Up to eight SNMP-trap and Syslog destination IP-addresses with 27 different events types each
- Switch state display and configuration via web browser (HTTP and HTTPS), SNMP, Telnet, SSH
- Management , memory card and  ports state-LED for indication of operating state
- Display of the device information: product name, serial number, date of manufacture, temperature
- Ports auto-negotiation or fixed setting of the transfer parameters per TP port
- Error counter per port
- Loop / broadcast limiter for protection against unintended or malicious packet storms
- Prioritization per port possible, 4 output queues per port for prioritization with strict or weighted procedure
- Separate bandwidth limiter per port for Rx and Tx frames
- Support of 256 VLAN-ID's , ID-range: 1-4095
- Port based VLANs
- Frame tagging (trunking) according to IEEE 802.1Q per port can be switched on and off, support for QinQ according to IEEE 802.1ad
- RX/TX and VLAN  ports mirroring
- Redundancy with Rapid Spanning Tree, Multiple Spanning Tree, and LACP
- Password protection with two access levels for access via WEB, Telnet / SSH / V.24 and NEXMAN
- Automatic assignment of the IP address via DHCP or fixed setting of the IP address
- Portsecurity via manual setting and by automatic learning of up to three MAC addresses per port
- Portsecurity with authentication of the authorized MAC addresses via RADIUS server
- Portsecurity to IEEE 802.1X with authentication via RADIUS server, IEEE 802.1X transparency
- Telnet / SSH and NEXMAN authentication via RADIUS Server
- Configuration management and storage via Nexans Device Manager (NEXMAN)
- Manual and automatic firmware update with Nexans Device Manager (NEXMAN)
- Automatic loading of switch configuration and of new firmware via DHCP / BootP and command file

## Features

| LAN Interfaces | |
|---|---|
| User interfaces (Twisted Pair) | 4x 10/100/1000 Mbps / (4 kV / 2 MOPP isolation) |
| Uplink interfaces (SFP) | 1x 100/1000 Mbps |
| Uplink (Twisted Pair) | Powered device interface /1x 10/100/1000 Mbps |
| Rotatable head module | yes (with monitoring function) |
| **Diagnostic functions (interfaces)** | |
| Digital Diagnostics Monitoring Interface | yes |
| Twisted Pair cable diagnostic | yes |
| **General** | |
| Dimensions [BxHxT] | 90mm x 45mm x 69mm |
| Installation depth | 35mm |
| Mounting type | Snap-In |
| Material | zinc diecasting / stainless steel |
| Colour | RAL 9010 (pure white) |
| Ambient temperature | Operation: 0 ... 45 °C, Storage: -20 ... 85 °C |
| Relative humidity | 20 - 90 % (non-condensing) |
| Weight | 290 g |
| MTBF | > 750.000 h |
| **Power Supply** | |
| Input voltage | PoE acc. to IEEE 802.3af or 802.3at / 46…57V DC (typ. 54V DC) |
| Power consumption | 2.8W (standby) … 4.3W (typ.) ... 5.5W (fully connected) |
| Connector | 3-pin connector with plug-in screw terminal (up to 2.5 mm²) / (+) (-) (FPE) |
| **Electrical safety** | |
| Electrical safety | IEC/EN 60601-1-1, Medical Electrical Equipment Part 1: General requirements for safety; 1: Requirements for medical electrical systems; EN 60950 |
| Electromagnetic compatibility (EMC) | IEC/EN 60601-1-2, Medical Electrical Equipment Part 2: General requirements for safety; 1: Electromagnetic compatibility – requirements and tests; EN55022 |
| **Functional parameters** | |
| Switching capacity (backplane) | 20 Gbps |
| Data throughput | > 1.400.000 Packets/sec. per port (FDX, bidirectional) |
| Switching procedure | Store and forward, self-learning |
| Max. frame size | 9.600 bytes (Support of Jumbo frames) |
| Storage capacity | 8.192 MAC-Addresses |
| **Management** | On-Board High-Performance management |
| Hardware | Real-time management platform V5 |
| Memory | 128 MByte RAM, 16 MByte NOR FLASH, 256 MByte NAND FLASH |
| Ethernet connection to processor | 1Gbps |
| Firmware update | Update in separated FLASH domain, corruption impossible |
| FLASH configuration | Dual configuration, corruption impossible |
| SCP, SSH, HTTPS and SNMPv3 | yes |
| Configuration button | yes (configuration button deactivatable) |
| Reset button | yes (configuration button deactivatable) |
| Memory card | Memory Card with fixed MAC-Address for redundant storage of the complete switch configuration (option) |
| Console port (V.24) | yes |
| Function contact | Free programmable function input with alarm functionality |

## Dimensions
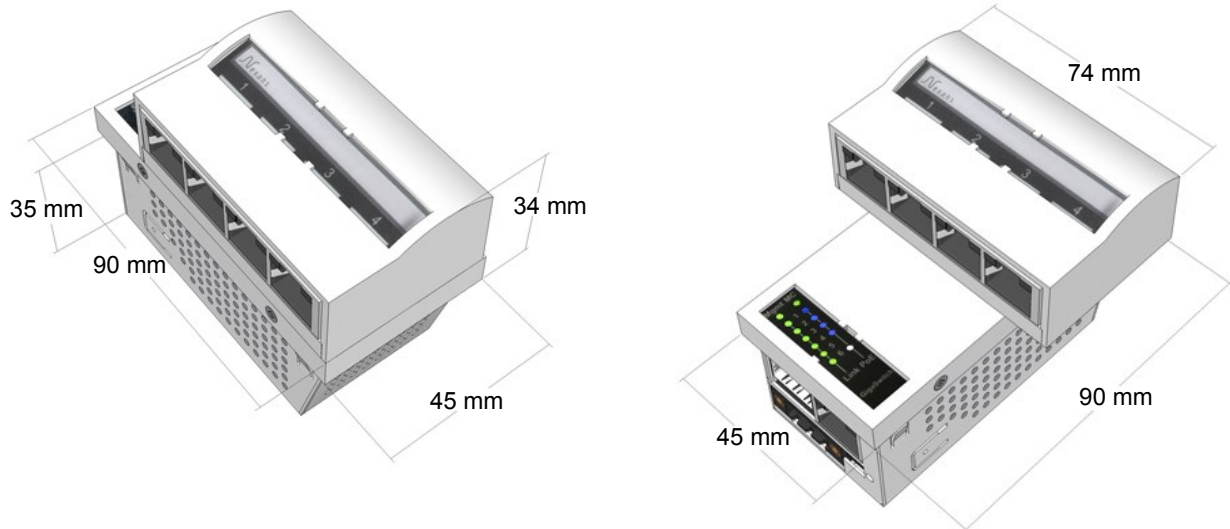


## Order Numbers

| FTTO Medical Switch | |
| --- | --- |
| GigaSwitch V5 TP(PD-F+) SFP-VI 48/54V MED | 88303602 |
| Memory Card for GigaSwitch | 88300691 |
| Memory Card for GigaSwitch (integrated) | 88300693 |
| **Installation Power Supplies** | |
| Installation Power Supply 54VDC/65W | 88646066 |
| Power Supply with Schuko 54VDC/65W | 88646077 |
| Click-In Power Supply 54VDC/70W 90x45 | 88646200 |
| Click-In Power Supply 54VDC/130W 135x45 | 88646240 |
| **Installation sets** | |
| Cover set 45x90 incl. MF, PW/9010 80x150 | 88646030 |
| Cover 82x153/45x90 Legrand, white, horizontal | 88646031 |
| Universal support for Legrand cover 82x153 | 88646032 |
| **SFP Modules 1000 Mbps** | |
| Nexans SFP 1000 Transceiver GI(LC)E . | 88646015 |
| Nexans SFP 1000 Transceiver SM(LC)E L10 | 88646016 |
| Nexans SFP 1000 Transceiver SF3(LC)E L10 | 88646073 |
| Nexans SFP 1000 Transceiver SF5(LC)E L10 | 88646075 |
| **SFP Modules 100 Mbps** | |
| Nexans SFP 100 Transceiver GI(LC)E | 88646010 |
| Nexans SFP 100 Transceiver SM(LC)E L10 | 88646011 |
| **NEXMAN Device Manager - Nexans Management Software** | |
| NEXMAN Device Manager Evaluation Version | free of charge/download |
| NEXMAN Device Manager Single Licence | 88301908 |
| NEXMAN Device Manager Company Licence | 88301909 |
| NEXMAN Device Manager Client-Server Licence | 88301920 |