

Active Networking Systems

Product catalogue

kd-0569e043

Active Networking Systems

Nexans Germany ranks among the leading cable manufacturers in Europe. The company offers a comprehensive product portfolio covering high-performance cables, systems and components for telecommunications and the energy sector. The portfolio is complemented by superconducting materials and components, Cryoflex transfer systems and special machines for the cable industry. Our roughly 3,550 employees are located in Germany and abroad. The turnover for the year 2004 amounted to approx. EURO 785 million. Its tight integration into the Nexans group enables Nexans Germany to efficiently leverage synergies with all divisions from the group. This applies to worldwide projects and to research, development and the exchange of know-how, as well.

Nexans Active Networking Systems

Under the roof of Nexans Germany the Active Networking Systems product division presents itself with new FiberSwitch concepts. In the course of the realignment and focus on active network solutions we will be able to even better fulfill your requirements and communication needs.

Optical Networks

Our optical solutions set standards and guarantee an optimum and future-proof performance. In this connection the product portfolio of Nexans Active Networking Systems has been essentially expanded. Apart from such well-known solutions as FiberCon and FiberSwitch from now on systems for industrial applications and FTTX will complement our offer. Based on our many years of experience in the field of fiber-optic network technology we guarantee state-of-the-art network solution for you.

In view of the ever increasing bandwidth demand and in order to provide future-proof installations more and more fiber-optic installations are implemented also indoors in addition to campus and backbone environments. Organizations implementing fiber-optic concepts are very often confronted with high investment costs for active network components (new FO NICs for PCs, FO cards for switches. Thanks to the Nexans media converters the installed



switch system basis with copper plug-in cards as well as copper interfaces can be retained in the PCs. This mixed technology solution allows an optimum workflow and offers a future-proof basis for the network.

Worldwide Manufacture

Nexans is a world-wide leading designer, manufacturer and integrator of cabling products for Local Area Networks (LAN). Our closely interconnected research and development resources provide the telecommunications market with the most comprehensive program of components for data transmission available today. Our manufacturing sites are located in Germany, Belgium, France, the United Kingdom, Canada, China and Brazil. This international distribution of tasks guarantees rapid availability at each location of the world.

International Quality Commitment

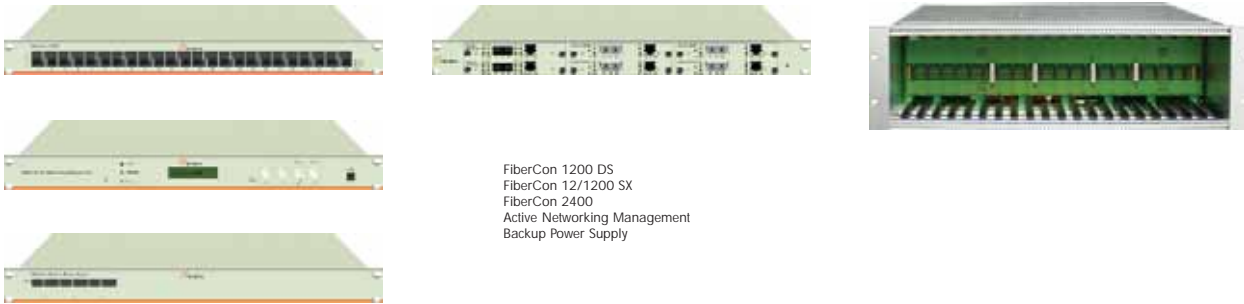
At Nexans comprehensive quality is an integral part of all our activities. All our manufacturing sites are ISO 9001 certified. Our products and manufacturing processes are permanently audited by independent institutes. To ensure a consistently high product quality each component and each meter of cable is monitored and tested. Our tests apply the industry's most stringent criteria. As a result our products not only fulfil, but exceed industry standards.

Technology Leader

Our company plays a substantial role in many international standardization bodies and industrial associations. This leadership allows us to integrate our commitment to comprehensive quality into all emerging standards and technologies. An important part of this commitment is our active work in those committees dealing with the review and further development of the IEEE standards, of ISO/IEC 11801, EN 50173 and TIA/EIA 568A as well as of the German DIN standards.



Central systems



FiberCon 1200 DS
 FiberCon 12/1200 SX
 FiberCon 2400
 Active Networking Management
 Backup Power Supply

Workgroup systems



FiberSwitch 100 BM+
 FiberSwitch 1000 BM+
 CopperSwitch 100 BM+
 GigaSwitch BM+

FiberCon 200 DS

FiberSwitch 100 BM+ 1 af Desk
 DualSwitch 100 BM+ 1 af Desk
 DualSwitch 1000 BM+ 1 af Desk

Industrial systems



iFiberCon 211
 iFiberCon 422
 iSwitch 540
 iSwitch 740
 iSwitch 741
 iSwitch 742

FTTx systems



Workgroup systems (Duct mounted)



All Switches also available with Gigabit interfaces !!!

Function and Application

The Nexans Switch 100 BM+ series makes switching technology possible in the local loop. This series emphasizes cost-effectiveness and flexibility by making fourfold use of a central LAN connection - the so-called Uplink. There are two types of uplinks: The Fiber-Optic version (the Nexans FiberSwitch 100 BM+) and the Twisted Pair version (the Nexans CopperSwitch 100 BM+). The BM+ systems are enabled for external power supply of Power-over-Ethernet components (according to IEEE802.3af). The FiberSwitch 100 BM+ is fitted with a 100BASE-FX or 100BASE-SX fiber-optic uplink interface on the bottom of the module. The transmission mode can be set from full-duplex (FDX) to half-duplex (HDX). With half-duplex mode, however, a length restriction of 412m has to be observed for the fiber-optic (FO) link in line with the Fast Ethernet standard. However, in the FDX mode a fiber-optic distance of up to 2000m can be bridged. For permanent monitoring of the link the so-called Remote Fault function can be activated. The optical fibers used can either be graded index fibers (GI 50/125 μm or 62.5/125 μm) or single-mode fibers (SM 9/125 μm), depending on requirements. All common optical connectors are supported. A terminal strip on the bottom of the CopperSwitch 100 BM+ module allows the connection to a Twisted Pair port (Uplink) with Cat 5 or IBM Type 1 installation cable. The connecting interface has been designed according to IEEE802.3 10BASE-T and 100BASE-TX for up to 100m. The transmission modes can be set from 100Mbps to 10 Mbps and from FDX to HDX respectively.

User Ports

There are four RJ45 ports available on the user side. Terminal equipment or network segments with a 10/100Mbps Twisted Pair LAN interface can be connected by means of Cat5 cables (up to 100m in length) here. The operating mode is preset to Autonegotiation (see notes on Autonegotiation), and this ensures the transmission mode (100Mbps FDX/HDX or 10Mbps FDX/HDX) is automatically detected for each of the four user ports. The TP ports also feature a selectable MDI/MDI-X auto-crossover function, which eliminates the need to use so-called crossed



Fig. 1: Front view FiberSwitch/CopperSwitch-systems

cables. The Switch automatically detects if the receive (RD) or transmit (TD) pairs are crossed within the Twisted Pair cabling and configures itself accordingly.

Functionality

The self-learning switch works according to the store-and-forward principle. In full-duplex mode it supports flow control according to IEEE802.3x and in half-duplex mode it supports a back-pressure function. Advanced functionalities can be set and controlled with the BM+ system using a plug-on management module. This allows among others

the setting of the transmission modes for each port, monitoring, activation/deactivation of connecting ports, VLAN support, prioritization functions (e.g. port-based, IEEE802.1p/q, IPv4/v6 DiffServ) and much more. Within the Switch 100 BM+ Series the functionality is adapted to the respective application by simply changing the plug-on modules. A dip-switch or management module is required for operation. The modular architecture allows to insert the modules for configuration. There is no need to remove the system. The transmission parameters on the

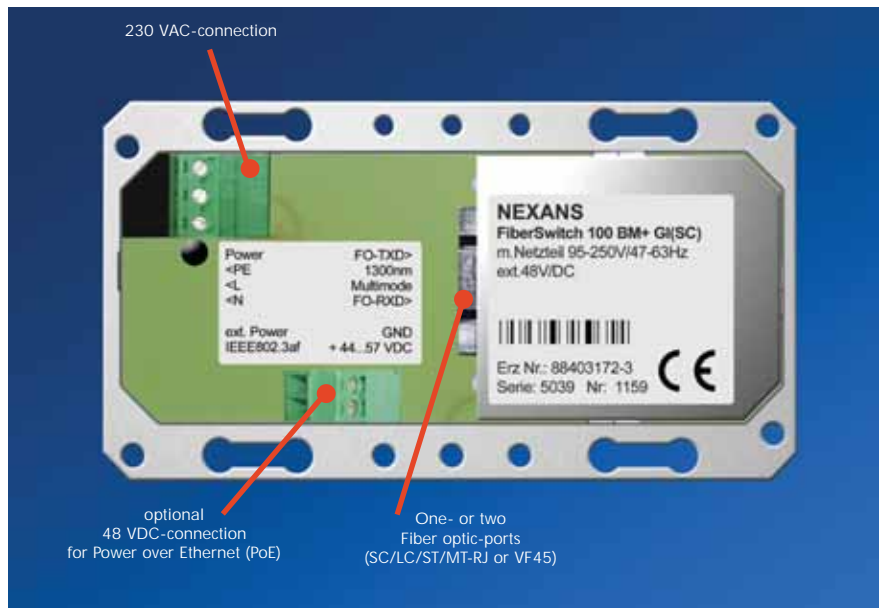


Fig. 2: Rear view FiberSwitch-system

Workgroup systems (Duct mounted)

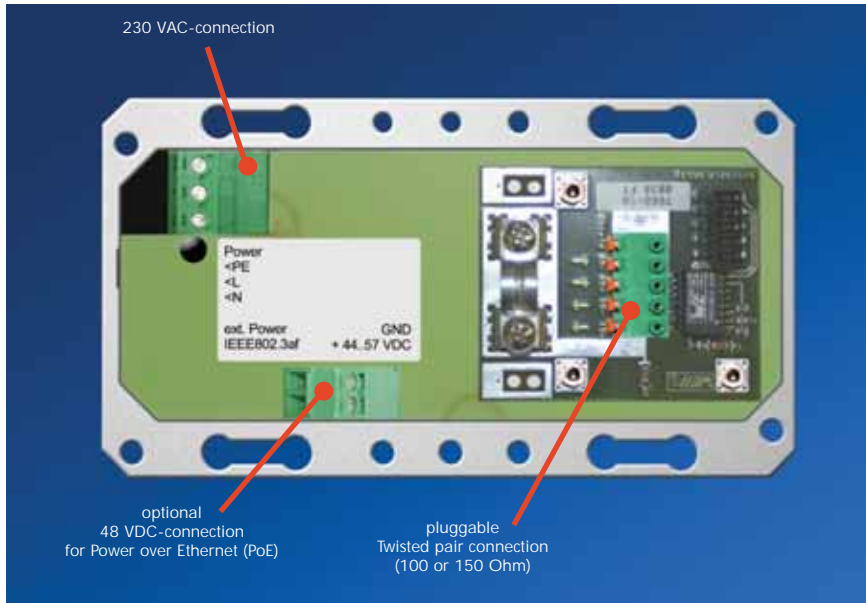


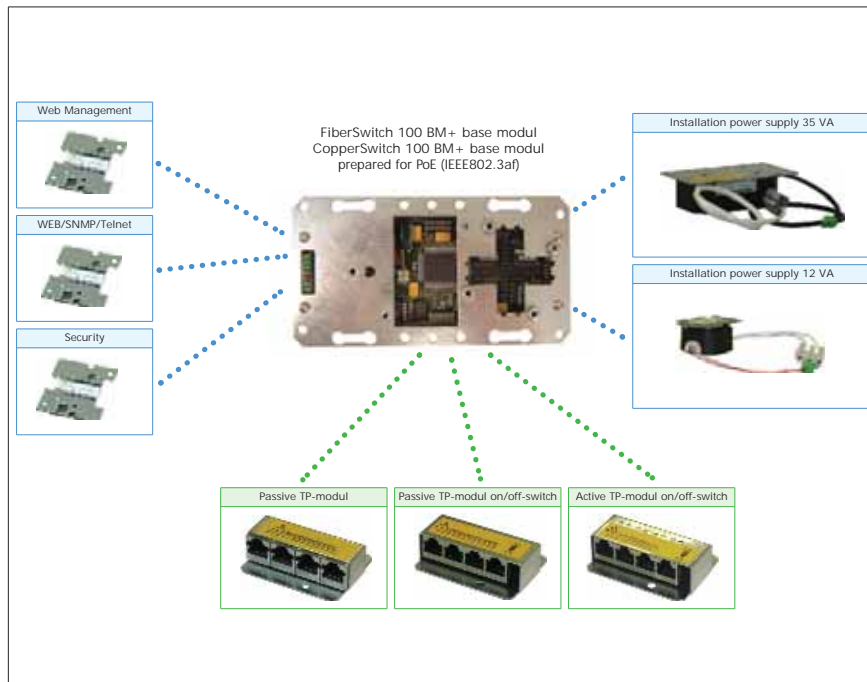
Fig. 3: Rear view CopperSwitch-system

Switch modules are simply set via DIP switches. A plug-on management module provides the possibility of remotely setting and checking the full functionality via the LAN.

Design

The Switch 100 BM+ has been designed as a module for installation in the floor tanks and in cable ducts. Its low mounting depth and the protected routing of the connecting lines extend its field of application to subfloor systems such as subfloor boxes. The systems have an integrated power supply unit and are immediately ready for use as soon as the mains voltage is connected using the 3-pin screw terminal which is included in the delivery. Alternatively the BM+ 48V Series switch and the PoE components (if any), e.g. IEEE802.3af are remotely supplied with 48 VDC.

Ultimate modularity



The Nexans Switch systems for installation in the cable duct or in subfloor boxes are highly modular and flexible.

Management Modules

Depending on the requirement the system can be fitted with a dip switching module or with various management modules.

The modular system architecture allows to plug-on management modules for web management, Web/SNMP/Telnet management or Web/SNMP/Telnet management with security features. This ensures a simple administration from a central location without removing the system.

Power over Ethernet

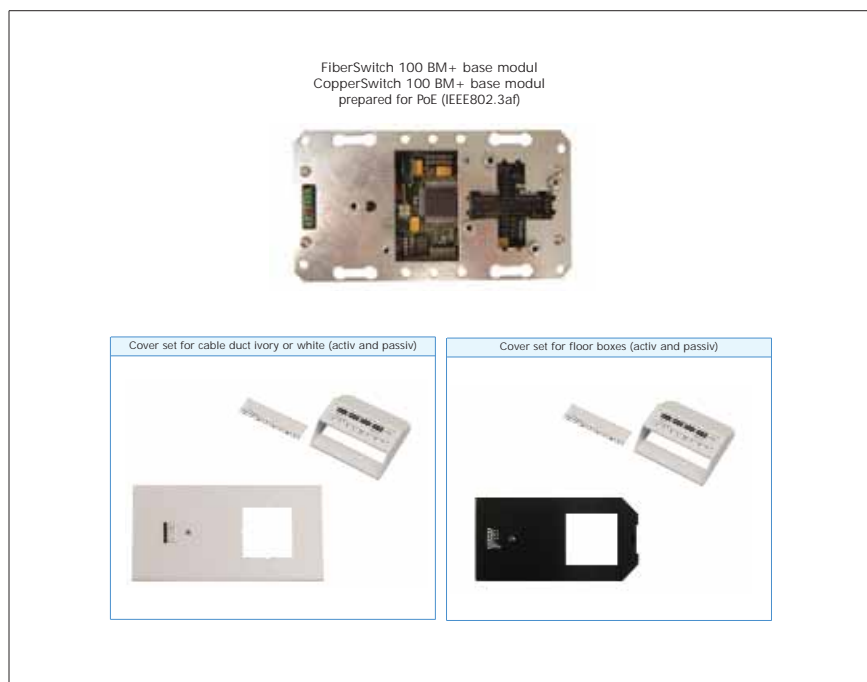
As a standard, already today all switch systems are equipped to supply PoE devices such as VoIP phones or wireless LAN access points via the Twisted Pair connecting cable with power.

Depending on the number and/or power consumption of the attached PoE terminals, 12VA or 35 VA installation power supply units are available.

In order to upgrade installed switch systems to PoE functionality only the desired power supply unit must be installed and the passive Twisted Pair plug-on module exchanged against an active one.

Covers

Appropriate covers for subfloor systems or dado trunking are available for almost every application scenario. Thus the systems fit smoothly into existing installations.



Workgroup systems

Auto-Negotiation (NWay)

Auto-negotiation (also called "NWay") is an optional function of the 100BASE-TX standard and enables two units which are connected via Twisted Pair cables to automatically determine and set the best mode of transmission.

The possible modes of transmission and data rates for Ethernet and Fast Ethernet are:

- 100Mbps, FDX (full-duplex) collision-free
- 100Mbps, HDX (half-duplex) according to CSMA/CD, with collision detection
- 10Mbps, FDX (full-duplex) collision-free
- 10Mbps, HDX (half-duplex) according to CSMA/CD, with collision detection

The two units negotiate the mode of transmission using so-called "fast-link pulses" before the data is actually transferred. The actual 10Mbps or 100Mbps link signal is sent out as soon as the units have agreed on the best mode of transmission.

		Switch adjustment				
		Auto-Negotiation (default)	100 Mbit/s FDX	100 Mbit/s HDX	10 Mbit/s FDX	10 Mbit/s HDX
Device adjustment	Auto-Negotiation	OK (MDI/MDI-X)	ERROR	OK	ERROR	OK
	100 Mbit/s / FDX	ERROR	OK (MDI/MDI-X)	ERROR	No Link	No Link
	100 Mbit/s / HDX	OK	ERROR	OK (MDI/MDI-X)	No Link	No Link
	10 Mbit/s / FDX	ERROR	No Link	No Link	OK (MDI/MDI-X)	ERROR
	10 Mbit/s / HDX	OK	No Link	No Link	ERROR	OK (MDI/MDI-X)

(MDI/MDI-X) - MDI/MDI-X Auto-Crossover zuschaltbar

Auto-Crossover MDI/MDI-X

MDI/MDI-X Auto-Crossover is an optional function of the IEEE802.3 standard which is specified in its Chapter 40.4.4. The aim of this standard is to eliminate the need for crossed connecting cables between Ethernet devices. This is possible as the terminal equipment automatically detects which wire pairs the receive (RD) or transmit (TD) signal is on, and then conducts an automatic crossover (MDI-X) within the device, if necessary. If both devices at the end of the connecting cable support the auto-crossover feature, a random algorithm as specified in the standard is used to ensure that the required crossover is performed on one terminal only.

Power over Ethernet (PoE) according to IEEE 802.3af

Reducing the number of cables required for connecting the network equipment is an important precondition in order to integrate the units more comprehensively into the daily routine of professional and home users. With its various PoE options the Fiber / CopperSwitch 100 BM+ and Fiber / CopperSwitch 1000 BM+ series provides an attractive and standardized alternative for supplying power to LAN equipment. The power supply of the network units is provided via the twisted pair cabling on the user ports - no separate power supply cable is needed any longer. Within the BM+ switch family Power-over-Ethernet can be "non-temporarily" activated / deactivated via an installed management system.

Economical Token Ring migration

Nexans' migration solution for existing Type 1 cabling

In the past companies used to install Token Ring networks. Token Ring networks mostly used the so-called IBM type 1 cable as a transmission medium. Today, since there is a demand for more and more bandwidth and user ports, many of those with responsibility for networks face a decision of which medium to choose for creating a future-proof network. Very often the installation of new cables will exceed the available IT budget and considerably impair operational processes.

If you look at existing cabling, it becomes evident that the number of connections for a workplace has clearly increased with time. Whilst in the past only one or two data cables were laid for each workplace, today at least four cables per workplace must be seen as standard. This new or retrofitted cabling is associated with not inconsiderable expense for infrastructure measures and with the obstruction of internal processes. Such installation work is often possible only with high financial expenditure at the weekends.

However, the Nexans copper workplace switches allow to continue to efficiently use the existing copper cabling. The Nexans CopperSwitch can be delivered for installation in cable ducts/subfloor boxes or as a desk switch. The switch has a connection for a Twisted Pair uplink which is operated full duplex, i.e. at 200 Mbps. On the user side there are four Twisted Pair 10/100 Mbps ports available. These ports can be operated in autonegotiation mode and also be manually set to 10 or 100 Mbps.

As an example, at the workplace the switch is installed in the cable duct or in a subfloor box and connected to an available copper cable. As a rule this is possible without major impairment of internal operational processes. The implemented Power-over-Ethernet (PoE) feature allows the direct power supply of VoIP phones, wireless access points and IP cameras from the CopperSwitch. Plug-in power supply units are no longer necessary for these terminals and the networks' availability is clearly

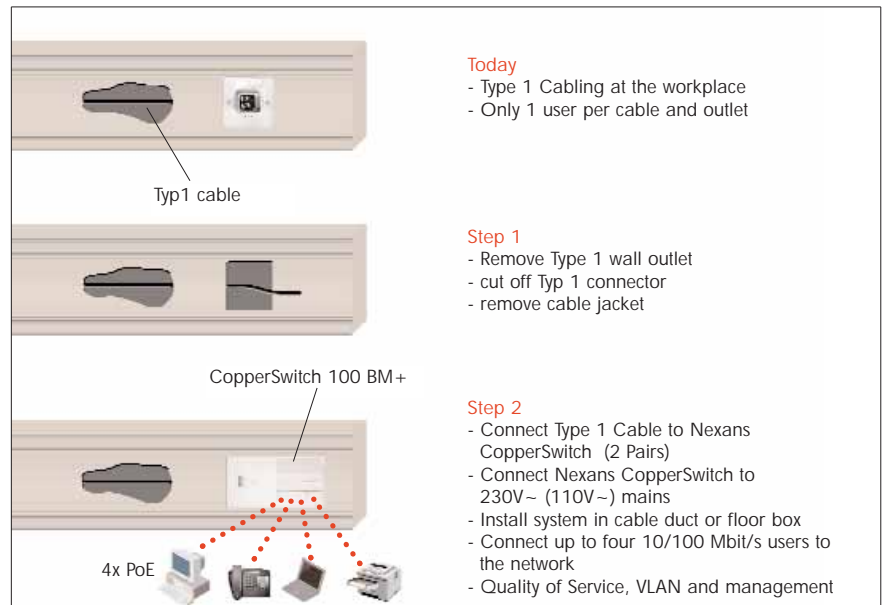


Fig 1: Modifications at the workplace

increased.

In spite of their compact design the Nexans CopperSwitch systems provide a great number of technical features for an optimum design of the network infrastructure. So they support VLANs according to 802.1q and comprehensive features for assuring the Quality of

Service. A mixed connection of users, e.g. 10Mbps phone and 100Mbps PC is possible as well as full-duplex and half-duplex transmission. Moreover the Nexans CopperSwitch systems support the authentication of the attached users in line with IEEE 802.1x and Radius.

A migration offers the following advantages:

- Continued use of existing copper cabling
- No construction work necessary
- No impairment of internal operational processes
- Only 25% of the central switch ports required
- Reduced Total Costs of Project

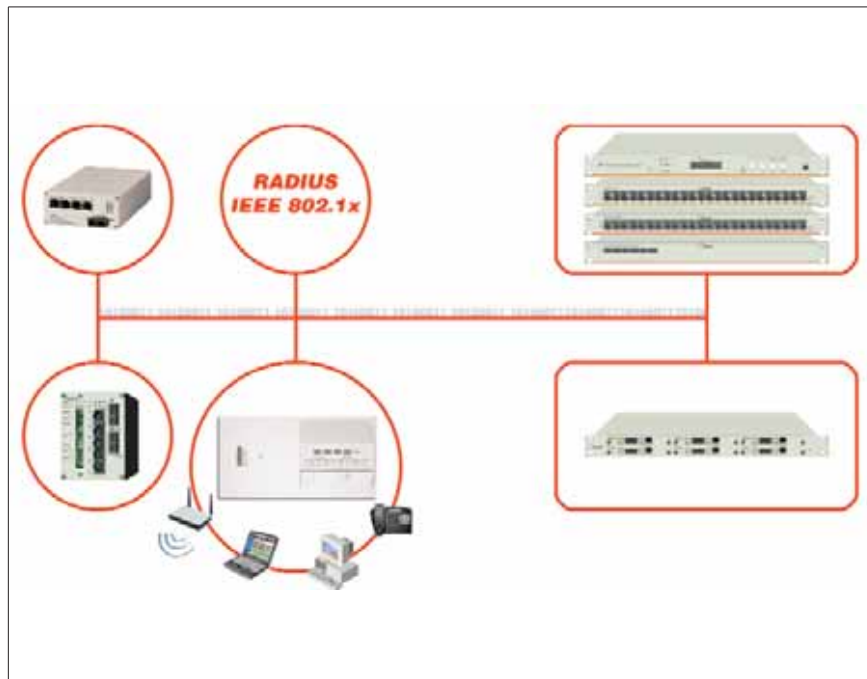


Fig. 2: Front view CopperSwitch 100 BM+



Fig. 3: Rear view CopperSwitch 100 BM+

Security in Fiber optic networks



Nexans Workgroup- and central systems

Security in enterprise networks is not just a question of technology, but rather a question of company philosophy. Security starts with the planning of the network and needs constant review.

The extension of networks to become multifunctional transmission media requires far-reaching decisions to be taken at the planning stage, already. Modern communication cannot be imagined without TCP/IP-based protocols and services, which form the basis of any enterprise network. At the same time Ethernet and the corresponding switching technology have established themselves in the organizations. However, today's security requirements and the desire to install future-proof networks require a redesign of existing traditional communication concepts. Security broken down to the access port prevents any unauthorized access to the network and is the basis for exactly billing the services provided by the network.

Already today the Nexans Switch systems support all relevant security mechanisms such as IEEE802.1x and MAC-based access control. In conjunction with a central authentication server, e.g. RADIUS, security in enterprise networks is considerably improved. Maximum security is achieved by

access control directly at the office switch user port. Thus the identity of the client is checked directly at the connection point and not only at the bundled port of the central switch. Any abuse of the network connection, e.g. by listening in into traffic is thus principally prevented. Each switch port can be individually set to the desired authentication method. Moreover, in case of a faulty authentication the corresponding SNMP traps can be sent to notify the central network management of this security violation. Here the MAC address of the unauthorized client is reported and documented.

Additional security is implemented through a number of SNMP traps which can be enabled for up to eight receivers. These include among others:

- ColdStart
- Authentication Failure
- Error Count Failure
- Link Change/Link Down/Link Up
- New MAC Address
- Portsecurity Failure
- Overheat Failure
- Radius Security Failure
- Radius Portsecurity Reject
- Port Loop/Broadcast Failure
- Switch PoE Voltage Failure
- Switch PoE Overload Failure
- Port PoE Overload Failure

RADIUS - one server for all authentication tasks

All organizations which allow access to a network are confronted with a grave security problem. A great number of users is granted access to the enterprise network. Security requirements demand the implementation of strict controls in order to exclude any unauthorized access to the network and the abuse of services right from the beginning.

RADIUS is a standard for authenticating and accounting users. RADIUS is based on the client/server model, with the office switch being the client (interconnection point). The switch sends the requests to a central RADIUS server and grants access to the respective network resources or rejects the attempt on the basis of the user information available there. A secure communication between the switch and the RADIUS server is ensured by mutual authentication using a "Shared Secret" and by encrypting the data transfer. RADIUS supports a number of authentication processes and can process and transfer many extendable user attributes.

The Nexans Office Switch allows the use of RADIUS for the following authentication tasks:

- MAC-based access control
- IEEE802.1x
- Telnet Administration
- Administration by NSCM (Nexans Switch Configuration Manager)

Telnet/NSCM Administration

In case of the above mentioned Telnet and NSCM administration the RADIUS server determines which users are granted Read/Only or Read/Write Access to the switch management interface. This eliminates the need to configure the passwords on the individual office switches.

MAC-based access control at the office switch port

The first security level is achieved by MAC-based access control of the clients. Each MAC address must be known to the RADIUS server in order to be granted access to the network. This efficiently prevents unauthorized devices from being operated in the productive network. Since the Nexans switches support a so-called Unsecure VLAN, it

Security in Fiber optic networks

is possible to switch unknown devices into this special VLAN. As an example, uncritical basic services can be made available there. In case of known MAC addresses the RADIUS server is able to shift the respective switch port into a defined VLAN. For example, printers can thus be attached automatically to the corresponding printer VLAN. Only the central RADIUS server database decides which MAC address is assigned to which VLAN. Client authentication via the MAC address has been almost a standard for wireless LAN access points for some time now. By adapting this procedure to the physical ports Nexans plays a pioneering role in security technology.

The philosophy behind 802.1x

The idea for 802.1x came from institutions which wanted to be able to easily control access to public networks (universities, government offices, libraries, etc.). The desired solution had to be cost-effective and easy to implement. And it should use the existing network infrastructure as well as the established protocols. Although VPN fulfilled some of the requirements, this technology was ruled out because of its high demand on resources and its complex configuration. Finally the 802.1x concept was jointly developed by 3Com, HP and Microsoft and adopted as an IEEE standard in June 2001.

The IEEE 802.1x standard is an important development in the security concept for networks and offers an opportunity to perform the identification of a user already at the network access port.

In order to understand the interacting between the IEEE 802.1x Extensible Authentication Protocol (EAP) and RADIUS it is worthwhile having a look at each single element. 802.1x is designed more as an architectural framework. It controls the access to frame-based networks at port level. In addition to Ethernet these include, of course, Token Ring, FDDI and the wireless Ethernet technology as a whole. The standard clearly subdivides these networks into three groups, which we know already from the RADIUS method:

- the Supplicant,
- the Authenticator and
- the Authentication Server.

This subdivision results in a basic principle of communication. The supplicant is an instance which wants to use the service provided by the authenticator's port. In a LAN the supplicant would thus be the client which wants to access the network and the embedded resources via the port of the switch or router. The authenticator (Nexans Office Switch) passes the request on to the authentication server for checking. In this case this task is fulfilled by a RADIUS server. If the result of the check is positive, it will be communicated back and the authenticator, i.e. the Nexans Switch, will enable its port for access to the productive VLAN.

Similar to MAC-based access control unauthorized users can be switched into the Unsecure VLAN. Moreover it is possible to switch authenticated users to a VLAN which is centrally configured on the RADIUS server. As an example, this allows to switch the user "Smith" from the accounting department into the secure VLAN, irrespective of which switch or switch port he/she is attached to. The RADIUS server alone is responsible for assigning the VLANs to the individual clients. Thus the time-consuming configuration of individual switch ports is no longer required.

Extensible Authentication Protocol (EAP)

By means of the EAP two communication partners can negotiate which authentication method should be used even before the actual authentication takes place. EAP describes the transfer of the authentication data from the user to the authentication server and its response using a simple request-response procedure. Here any authentication mechanism or certificate can be employed. EAP is used either in conjunction with a PPP data link or as a protocol framework for exchanging authentication data in other protocols, such as IEEE 802.1x.

Support of all standard EAP methods

An important feature of the Nexans 802.1x Authenticator is its transparency for all EAP standard methods such as EAP-MD5, EAP-TLS, EAP-TTLS, EAP-PEAP, etc. Also new methods which will be standardized in the future can be processed without updating the switch soft-

ware. Only the client and the RADIUS server need to understand the EAP method employed.

NexMan V3 Nexans Switch Manager

Contrary to the configuration of just a few central core switches the use of Fiber-to-the-Office (FTTO) requires the configuration and administration of a great number of decentralized switches. This is why Nexans has developed a configuration tool which is specifically designed to fulfill this requirement. This so-called NSCM Nexans Switch Configuration Manager ensures the automated distribution of basic configurations (Master Configs) and software updates to any number of office switches. Moreover, it is possible to distribute the complete configuration or just a partial configuration. Another important feature of the NSCM is the central archiving of all switch configurations in a database. In case of a failure this will ensure the rapid reconfiguration of the switch parameters.

Workplace systems

FiberSwitch 100 BM+ (4x 10/100 Mbps + 1x 100 Mbps)

- 4 port Eth./Fast Eth.-switch with optical 100 Mbps uplink
- Quality of Service, VLANs
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af (optional)
- Dual fiber or single fiber versions
- integrated 230 VAC power supply
- and further features

Order numbers:

FiberSwitch 100 BM+ GI(SC)	88303172
FiberSwitch 100 BM+ GI(ST)	88303171
FiberSwitch 100 BM+ GI(MTRJ)	88303173
FiberSwitch 100 BM+ GI(VF45)	88303174
FiberSwitch 100 BM+ SM(SC)	88303178
FiberSwitch 100 BM+ SM(ST)	88303175
FiberSwitch 100 BM+ SX SM(ST)	88303176
FiberSwitch 100 BM+ SF5(SC)	88303180



FiberSwitch 100 BM+ 48V (4x 10/100 Mbps + 1x 100 Mbps)

- 4 port Eth./Fast Eth.-switch with optical 100 Mbps uplink
- Quality of Service, VLANs
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af (optional)
- Dual fiber or single fiber versions
- integrated 48 VDC power supply
- and further features

Order numbers:

FiberSwitch 100 BM+ GI(SC) 48V	88303362
FiberSwitch 100 BM+ GI(ST) 48V	88303361
FiberSwitch 100 BM+ SM(ST) 48V	88303365

48 VDC



CopperSwitch 100 BM+ (4x 10/100 Mbps + 1x 100 Mbps)

- 4 port Eth./Fast Eth.-switch with twisted pair 100 Mbps uplink
- Quality of Service, VLANs
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af (optional)
- integrated 230 VAC power supply
- and further features

Order number:

CopperSwitch 100 BM+	88303179
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FiberSwitch 1000 BM+ (4x 10/100 Mbps + 1x 1.000 Mbps)

- 4 Port Eth./Fast Eth.-switch with optical 1.000 Mbps uplink
- Quality of Service, VLANs
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af (optional)
- Dual fiber or single fiber versions
- integrated 230 VAC power supply
- and further features

Order numbers:

FiberSwitch 1000 BM+ SX(SC)	88303606
FiberSwitch 1000 BM+ LX(SC)	88303607
FiberSwitch 1000 BM+ 2*SX(LC)	88303706
FiberSwitch 1000 BM+ 2*LX(LC)	88303707

Gigabit Uplink

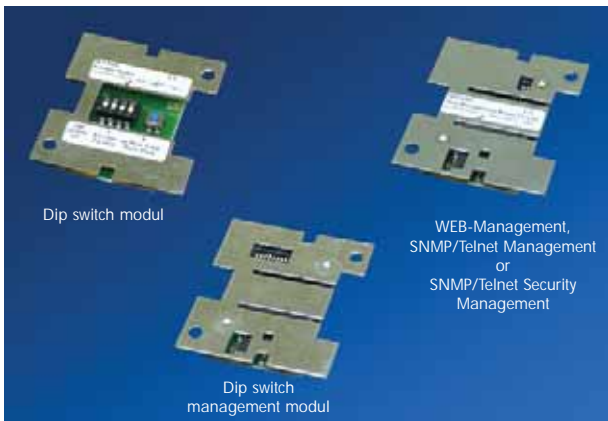


Workplace systems



- GigaSwitch BM+ (4x 10/100/1000 Mbps + 1x 1.000 Mbps)**
- 4 Port Eth./Fast Eth./Gigabit Eth.-switch with optical 1.000 Mbps uplink
 - 4x 10/100/1000 Mbps twisted pair user ports
 - 1x 1000 Mbps fiber Optic uplink
 - Management (optional)
 - integrated 230 VAC power supply
 - and further features

Order number:
GigaSwitch BM+ SX GI(SC) 88303726

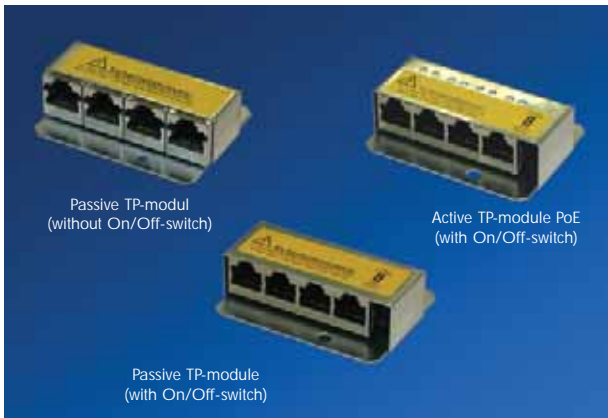


- Dip switch modul**
- Order numbers:
Dip switch modul* 88301200
Dip switch management modul* 88301204

- Management V3**
- Order numbers:
V3-WEB Mgmt Vers.01 88301310
V3-SNMP/TELNET/WEB Mgmt Vers.01 88301311
V3-SECURITY Mgmt Vers.01 88301312

- Management V3 for GigaSwitch BM+ Systems**
- Order numbers:
V3-GIGA WEB Mgmt Vers.01 88301320
V3-GIGA SNMP/TELNET/WEB Mgmt Vers.01 88301321

* - Applicable only for specific systems ...



- TP-modules for FiberSwitch/CopperSwitch-duct mounted systems**
- Order numbers:
passive module for systems without PoE 88301221
(without On/Off-switch)
- passive module for systems without PoE 88301223
(with On/Off-switch)
- active module for systems with PoE 88301222
(with On/Off-switch)

- TP-module for GigaSwitch-duct mounted systems**
- Order number:
passive module for systems without PoE 88301224
(with push-button)



- NexMan V3 - Nexans Switch Manager for systems with V3-Management**
- Independent of installed switch software
 - Automatically software update for single or multiple switches
 - Automatically download of switch configuration for single or multiple switches
 - Generate of master and allocation to single or multiple switches
 - Selection of individual configuration parameter and allocate automatically to multiple switches
 - Storage of switch configurationen in database

Order numbers:
NexMan V3 - Nexans Switch Manager 88301908
(Single licence)

NexMan V3 - Nexans Switch Manager 88301909
(Company licence)

Workplace systems

FiberCon 200 DS (10/100 Mbps)

- 2 independent twisted pair/fiber optic mediaconverter
- 2 optical interfaces according to IEEE 802.3u 100BASE-FX
- all twisted pair user interfaces with PoE-functionality
- PoE above DIP-switches per port switchable (OFF/ON/IEEE802.3af)
- bedarfsgerecht konfigurierbar
- integrated 48 VDC power supply
- and further features

Bestellnummern:

FiberCon 200 DS GI(ST) 48V PoEaf	88303371
FiberCon 200 DS GI(SC) 48V PoEaf	88303372

48 VDC



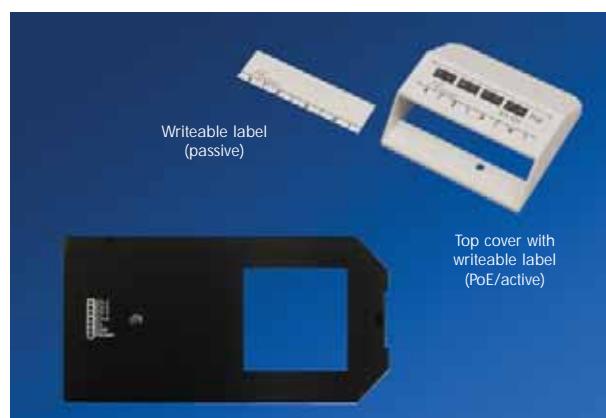
Cover set for floor tank installation

Included in delivery:

- Cover plate for Ackermann floor tank GB3/30355A
- Top cover for TP-modul incl. 2 labels (passive and active)

Order numbers:

Cover set for Ackermann GB3/30355A	88301061
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Cover set for cable duct installation

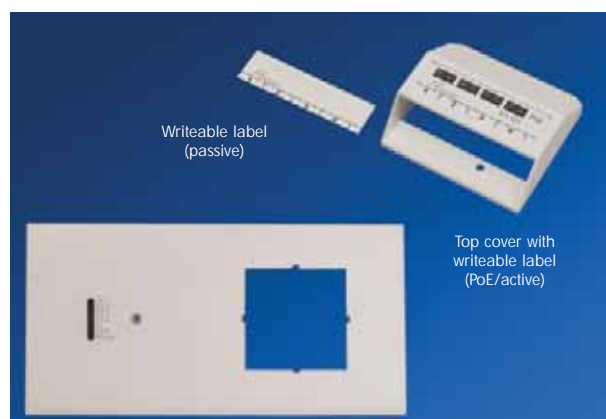
Included in delivery:

- Cover plate
- Top cover for TP-modul incl. 2 labels (passive and active)

Order numbers:

Cover set (151x80) white	88301047
Cover set (151x80) ivory	8830xxxx
Cover set (170x86) white	88301045
Cover set (170x86) ivory	8830xxxx

Colours: white - RAL9010 / ivory - RAL1013



Installation power supply 48 VDC / 12 VA for PoE

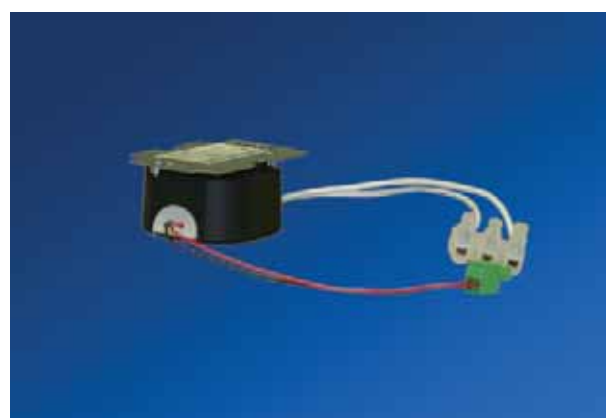
- Self contained power supply of witch and `Power over Ethernet` - components
- Low mounting depth - compatible for a lot of standard cable ducts and floor tanks
- Max. power rating 12 VA (permanent)
- 230 V power connection with plug-on screw terminal

Included in delivery:

- Power supply with
- Mounting ring
- 2 pin plug-on screw terminal for PoE 48 VDC connection
- 3 pin terminal block for 230 VAC connection
- 3 pin plug-on screw terminal for 230 VAC connection in cable ducts and floor tanks

Order number:

Installation power supply 12 VA	88301230
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Workplace systems



Installation power supply 48 VDC / 35 VA for PoE

- Self contained power supply of witch and `Power over Ethernet` - components
- Low mounting depth - compatible for a lot of standard cable ducts and floor tanks
- Max. power rating 35 VA (permanent)
- 230 V power connection with plug-on screw terminal

Included in delivery:

- Power supply with mounting ring
- 2 pin plug-on screw terminal for PoE 48 VDC connection
- 2x "Wago" connector for primary power connection
- 3 pin terminal block for 230 VAC connection
- 3 pin plug-on screw terminal for 230 VAC connection in cable ducts and floor tanks

Order number:

Installation power supply 35 VA 88301231



Wieland connection cable

Connecting cable for simple, in-phase wiring in the installation environment with a GESIS wiring system from the company Wieland.

First cable end:	Phoenix plug with screw terminal
Second cable end:	GESIS plug type GST18I3K1
Length:	1 meter

Order number:

Wieland connection cable 88301071



Desktop/wall housing for installation of a cable duct module

Included in delivery:

- 1x Desktop housing
- 4x fastening screws for cable duct module
- 1x power cord, 3 m

Order numbers:

Desktop/wall housing cable duct modules	88302450
Assembly kit for horizontal wall mounting	88300643
Assembly kit for vertical wall mounting	88300644



Wall housing

Order number:

Wall housing white 88645810

Workplace systems

FiberSwitch 100 BM+ I af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with optical 100 Mbps uplink
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with internal power supply (optional)
- Dual fiber or single fiber versions
- and further features

Order numbers:

FiberSwitch 100 BM+ I af Desk GI(SC)	88303352
FiberSwitch 100 BM+ I af Desk GI(ST)	88303351
FiberSwitch 100 BM+ I af Desk GI(MTRJ)	88303353
FiberSwitch 100 BM+ I af Desk GI(VF45)	88303354
FiberSwitch 100 BM+ I af Desk SM(SC)	88303357
FiberSwitch 100 BM+ I af Desk SM(ST)	88303355
FiberSwitch 100 BM+ I af Desk SX SM(ST)	88303356



CopperSwitch 100 BM+ I af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with twisted pair 100 Mbps uplink
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with internal power supply (optional)
- and further features

Order numbers:

CopperSwitch 100 BM+ I af Desk	88303350
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DualSwitch 100 BM+ I af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with two 100 Mbps uplinks (fiber optic or twisted pair)
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with internal power supply (optional)
- Dual fiber or single fiber versions
- and further features

Order numbers:

DualSwitch 100 BM+ I af Desk 2*GI(SC)	88303422
DualSwitch 100 BM+ I af Desk 2*SM(SC)	88303477
DualSwitch 100 BM+ I af Desk SF5+3(SC)	88303498
DualSwitch 100 BM+ I af Desk TP GI(SC)	88303402
DualSwitch 100 BM+ I af Desk 2*TP	88303400



DualSwitch 1000 BM+ I af Desk (10/100/1000 Mbps)

- Eth./Fast Eth./Gigabit Ethernet-switch with two 1.000 Mbps uplinks (SFP or fiber optic)
- 5x 10/100 Mbps twisted pair ports (optional up to 4 pcs with PoE)
- 1x 10/100/1000 Mbps twisted pair port
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with internal power supply (optional)
- SX oder LX fiber optic
- and further features

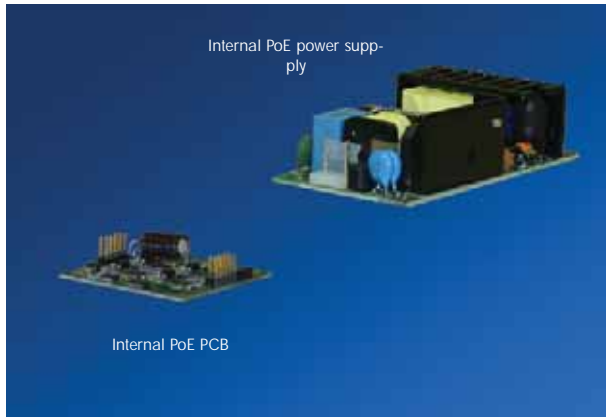
Order numbers:

DualSwitch 1000 BM+ I af Desk 2*SX(SC)	88303906
DualSwitch 1000 BM+ I af Desk 2*LX(SC)	88303907
DualSwitch 1000 BM+ I af Desk 2*SFP	88303905

Gigabit Eth.



Workplace systems



Internal power supply 30 VA
(for ... I af systems)

Included in delivery:
- PoE PCB and PoE power supply

Order numbers:
 Option PoE IEEE802.3af 30 VA 88303217
 Option PoE Typ A 30 VA 88303214
 Option PoE Typ A 52 VA 88303213
 Option PoE Typ C 30 VA 88303215
 Option PoE Typ C 60 VA 88303216



FiberSwitch 100 BM+ af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with optical 100 Mbps uplink
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with external power supply (optional)
- Dual fiber or single fiber versions
- and further features

Order numbers:
 FiberSwitch 100 BM+ af Desk GI(SC) 88303342
 FiberSwitch 100 BM+ af Desk GI(ST) 88303341
 FiberSwitch 100 BM+ af Desk GI(MTRJ) 88303343
 FiberSwitch 100 BM+ af Desk GI(VF45) 88303344
 FiberSwitch 100 BM+ af Desk SM(SC) 88303347
 FiberSwitch 100 BM+ af Desk SM(ST) 88303345
 FiberSwitch 100 BM+ af Desk SX SM(ST) 88303346
 FiberSwitch 100 BM+ af Desk SF3(SC) 88303328
 FiberSwitch 100 BM+ af Desk SF5(SC) 88303348



CopperSwitch 100 BM+ af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with twisted pair 100 Mbps uplink
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with external power supply (optional)
- and further features

Order numbers:
 CopperSwitch 100 BM+ af Desk 88303340



DualSwitch 100 BM+ af Desk (10/100 Mbps)

- 4 port Eth./Fast Eth.-switch with two 100 Mbps uplinks (fiber optic or twisted pair)
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with external power supply (optional)
- Dual fiber or single fiber versions
- and further features

Order numbers:
 DualSwitch 100 BM+ af Desk 2*GI(SC) 88303522
 DualSwitch 100 BM+ af Desk 2*SM(SC) 88303577
 DualSwitch 100 BM+ af Desk SF5+3(SC) 88303598
 DualSwitch 100 BM+ af Desk TP GI(SC) 88303502
 DualSwitch 100 BM+ af Desk 2*TP 88303500

Workplace systems

DualSwitch 1000 BM+ af Desk (10/100/1000 Mbps)

- Eth./Fast Eth./Gigabit Ethernet-switch with two 1.000 Mbps uplinks (SFP or fiber optic)
- 5x 10/100 Mbps twisted pair ports (optional up to 4 pcs with PoE)
- 1x 10/100/1000 Mbps twisted pair port
- Web, SNMP/Telnet or SNMP/Telnet Security Management (optional)
- Power over Ethernet (PoE) according to IEEE802.3af with external power supply (optional)
- SX oder LX fiber optic
- and further features

Order numbers:

DualSwitch 1000 BM+ af Desk 2*SX(SC)	88303806
DualSwitch 1000 BM+ af Desk 2*LX(SC)	88303807
DualSwitch 1000 BM+ af Desk 2*SFP	88303805

Gigabit Eth.



External power supply 60 VA (for ... af Desk Systeme)

Included in delivery:

- PoE PCB and PoE power supply

Order numbers:

Option PoE IEEE802.3af 60 VA with ext. power supply	88301253
Option PoE Typ A 60 VA with ext. power supply	88301251
Option PoE Typ C 60 VA with ext. power supply	88301252



Dip switch modul

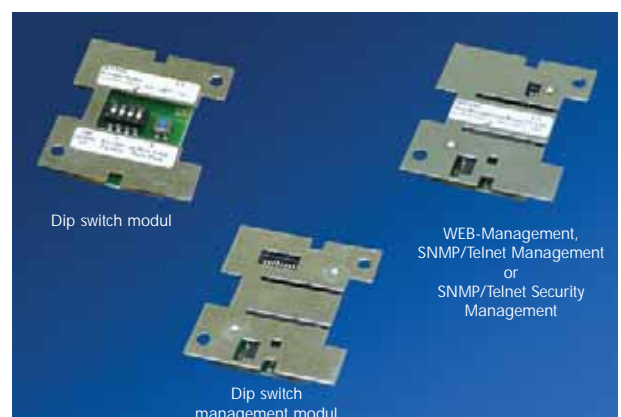
Order numbers:

Dip switch modul	88301200
Dip switch management modul	88301204

Management V3

Order numbers:

V3-WEB Mgmt Vers.01	88301310
V3-SNMP/TELNET/WEB Mgmt Vers.01	88301311
V3-SECURITY Mgmt Vers.01	88301312



NexMan V3 - Nexans Switch Manager for systems with V3-Management

- Independant of installed switch software
- Automatically software update for single or multiple switches
- Automatically download of switch configuration for single or multiple switches
- Generate of master and allocation to single or multiple switches
- Selection of individual configuration parameter and allocate automatically to multiple switches
- Storage of switch configurationen in database


Order numbers:

NexMan V3 - Nexans Switch Manager	88301908
(Single licence)	

NexMan V3 - Nexans Switch Manager	88301909
(Company licence)	





 Nexans network solutions are used throughout the world and have proved their reliability in many different ways. Our references include leading companies in the world, universities, industrial properties, hospitals, authorities and banks. A LAN System which can grow with the needs of its users has to be designed right from the very start with such a level of flexibility to ensure that support is provided in particularly with frequent moves, adds and changes.

With more than 20 years experience in the development and production of optical solutions, the systems from Nexans provide the reliability and the security you expect from your network.

