LANactive DICE
Digital Ceiling Solution
Catalogue

reddot winner 2021

Nexans

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Boost efficiency, reduce energy usage and be ready for tomorrow!

A growing number of IoT (Internet of Things) devices are demanding ever more powerful IT networks. Bandwidth requirements are increasing rapidly (so do power & data), owing to more devices being connected to networks and more cloud applications and mobile devices being used.

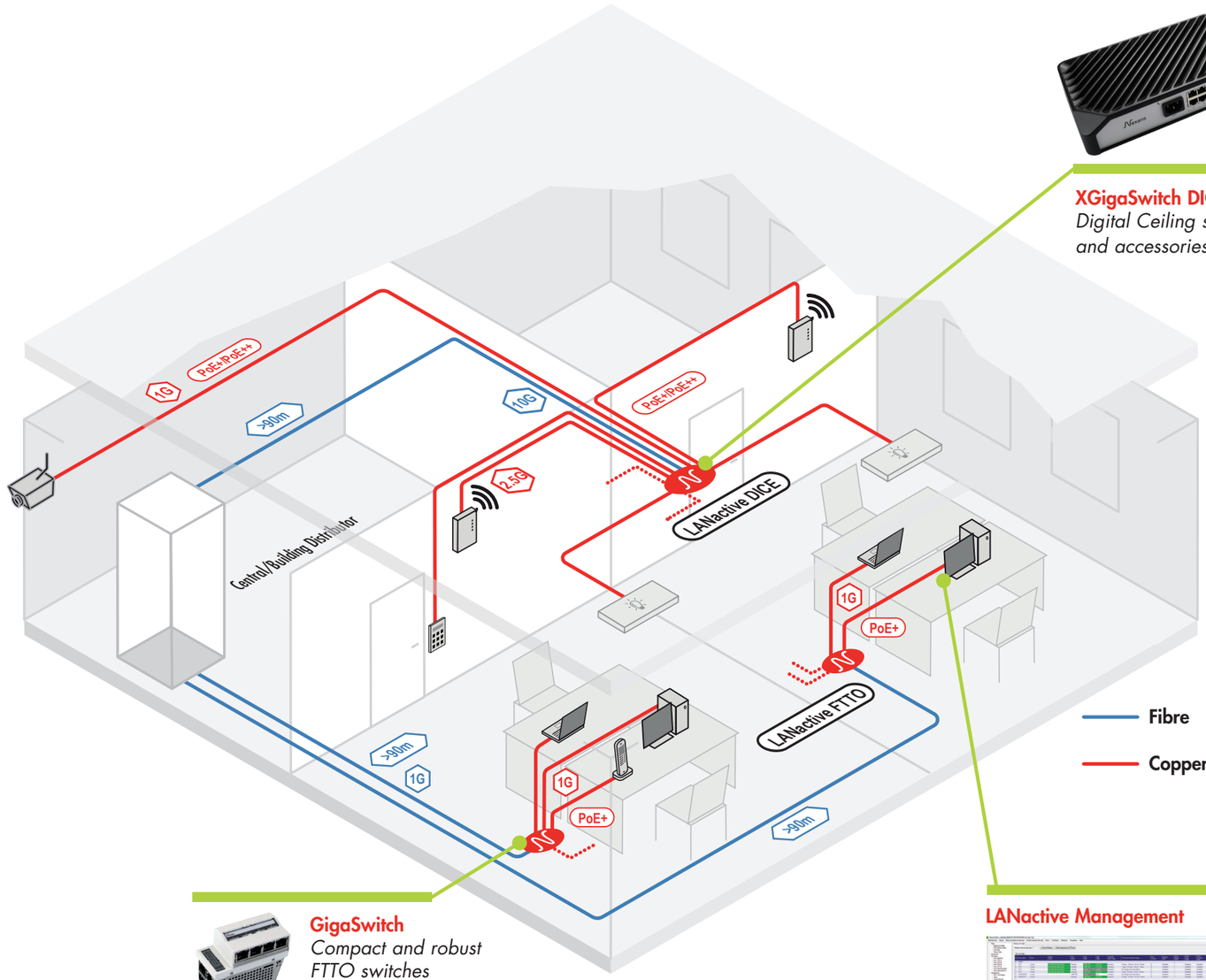
Today, with the latest Wireless LAN standards the available bandwidth at the access level increases again and established network connections are reaching its limits. This makes it necessary to think about new technologies to transport the upcoming data traffic.

In addition to the Wireless LAN application, smart building systems are being increasingly integrated into the IP network. In this case, it is not bandwidth that is typically to the fore, but instead the provision of data and power, supporting applications like connected lighting, smart sensors and heating, air conditioning and security systems.

To implement and manage all this in a cost and resource efficient way, while ensuring the IT networks flexibility, Nexans has developed a "Fibre in the Digital Ceiling" concept.

Basically, a data/power/control network is connected throughout an entire building via an overhead honeycomb configuration, offering a significant number of (powered) connection points. This way, devices can be linked to building automation. Network switches, sensors, controls, WLAN access points and other distributed building services are simply plugged in and immediately powered and connected to the network.

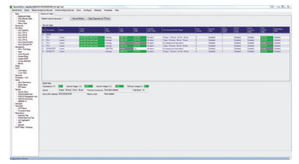
The core component is the new Nexans LANactive Ethernet switch "DICE".



XGigaSwitch DICE
Digital Ceiling switch and accessories

GigaSwitch
Compact and robust FTTO switches

LANactive Management



"DICE" is optimized for a smooth installation in the digital ceiling. Based on a modern design it can be integrated seamlessly into the smart building of tomorrow.

Advantages of LANactive DICE
- Meets current and future network requirements of smart buildings
- Scalable upgrading of existing and new network infrastructures
- Fibre based technology to serve future requirements of security, high bandwidth and energy savings
- Fast and flexible provisioning of data and services (WLAN) exactly where they are needed
- Sustainable and cost-efficient management and maintenance of the network

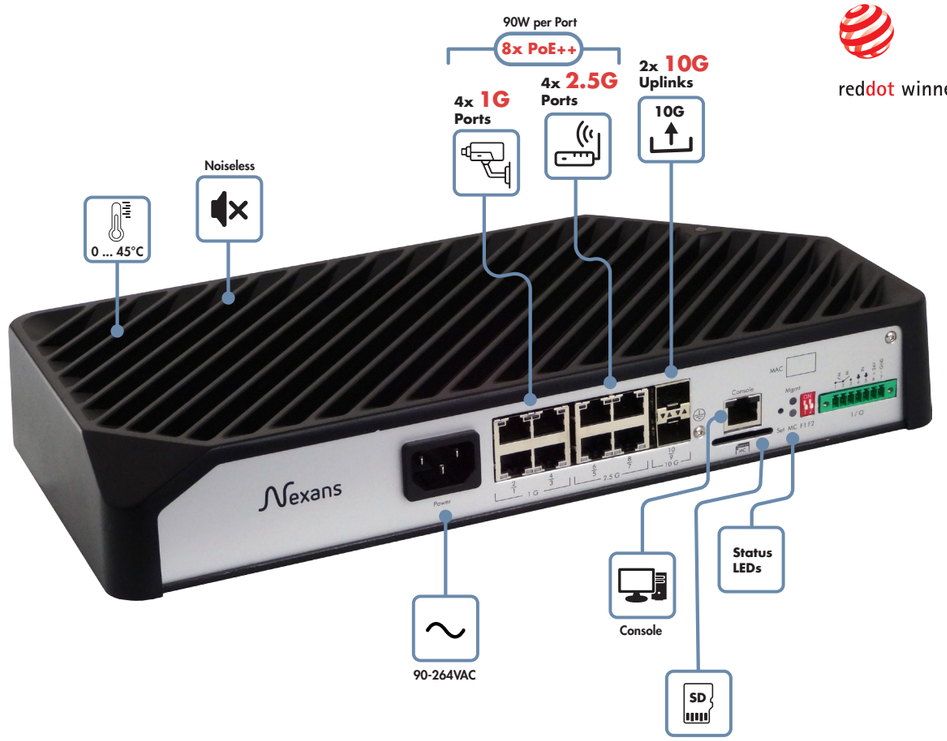
Features
- 2x 10 Gbps SFP+ uplinks
- 4x MultiGigabits access ports for connection of bandwidth consuming applications
- 4x Gigabit access ports for connecting further IP equipment such as monitoring cameras, intelligent lighting or building systems (Smart Building)
- Access ports are featured with PoE++ with up to 90W

In conjunction with the established LANactive FTTO concept, a maximum performance and flexibility of the IT infrastructure can be achieved, in a way that enhances user experience while reducing energy usage.

Nexans recent product innovation "DICE" is a major step towards further developing the companies new product platform supporting high bandwidth (10G) and smart building applications.

XGigaSwitch DICE

LANactive XGigaSwitch is optimized for supporting Wireless LAN infrastructures. Based on MultiGigabit and 10 Gigabit SFP+ interfaces the switch is able to support the bandwidth required by the latest Wireless LAN standards.



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Access Ports

The XGigaSwitch has eight Access Ports connecting Wireless LAN Access Points, IP Cameras, Connected Lighting or Smart Building Systems. Four Access Ports supporting MultiGigabit to avoid any bottleneck with the latest WLAN technology standards.

Ceiling Installation

The very compact design allows various mounting options and is honoured with the reddot design award. In combination with the fanless design and the noiseless operation the installation can be e.g. in offices or in visible areas.

Power over Ethernet

The latest Power over Ethernet standard IEEE802.3bt enables the remote powering with up to 90W per port. Equipment like Wireless LAN Access Points, IP-Cameras, Connected Lighting or Smart Building Systems can be supplied with power from the switch directly. The Power over Ethernet functionality can be parametered, controlled and monitored via management.

Memory Card

The optional memory card automatically saves the complete current configuration and firmware of the device. In case of failure, this feature allows an easy exchange of the hardware without additional configuration. In addition, each memory card can be delivered with its own MAC address that is adopted by the switch.

Switch Management and Zero-Touch Configuration

Nexans LANactive Manager allows a simple and secure configuration of all device parameters of the XGigaSwich series. With the LANactive Manager a larger number of XGigaSwitches can be managed and monitored at the same time. In combination with Nexans Zero-Touch Configuration, the LANactive Manager allows automatic distribution of configurations and firmware updates. A pre-configuration of the switches is not necessary.

WiFi 6 as Technology Driver for XGigaSwitch DICE

The latest WiFi standard IEEE802.11ax called WiFi 6 is optimized for crowded areas and parallel communication between access points and end devices. It is based on OFDMA (Orthogonal Frequency-Division Multiplexing) technology and uses the 2.4GHz, 5GHz and with the extension WiFi6e also in the 6GHz band. To archive 1,024 QAM modulation means that the signal quality must be increased between source and destination. This can be achieved by working with smaller radio cells what result in a higher quantity of access points in the same area. The following table shows the main differences WiFi 5 and WiFi 6.

IEEE 802.11ax (WiFi 6)
- Increasing bandwidth and efficiency (OFDMA)
- Designed for crowded areas
- Increasing bandwidth requires better signal quality
- Decreasing the radio cell
- Uplink bandwidth > 1 Gbps is recommended (IEEE 802.3bz)
- Increasing power consumption requires PoE++ (IEEE 802.3bt)

	2013	**2020**
	IEEE 802.11ac	**IEEE 802.11ax**
Frequency	5 GHz	2.4, 5 and 6 GHz
Modulation	256-QAM	1024-QAM
Max. data rate (20MHz and 2SS)	173.3 Mbps	286.8 Mbps
Max. data rate (40MHz and 2SS)	400 Mbps	573.5 Mbps
Spatial Streams	8	8

Bandwidth as Technology Driver for XGigaSwitch DICE

The Gigabit Ethernet standard came into use in 1998 and is until today the most common and used access transmission technology in Local Area Networks (LAN). Between 1 and 10 Gigabit Ethernet, the Multigigabit standard was approved in 2016 and supports 2.5 Gigabit Ethernet and 5 Gigabit Ethernet. The main advantage of the 2.5 Gigabit standard is that there is no need in refurbishing the cabling infrastructure, because it works also with a CAT5e infrastructure. The main application for Multigigabit are the latest WiFi access points.

The following table shows an overview of the Gigabit transmission technologies.

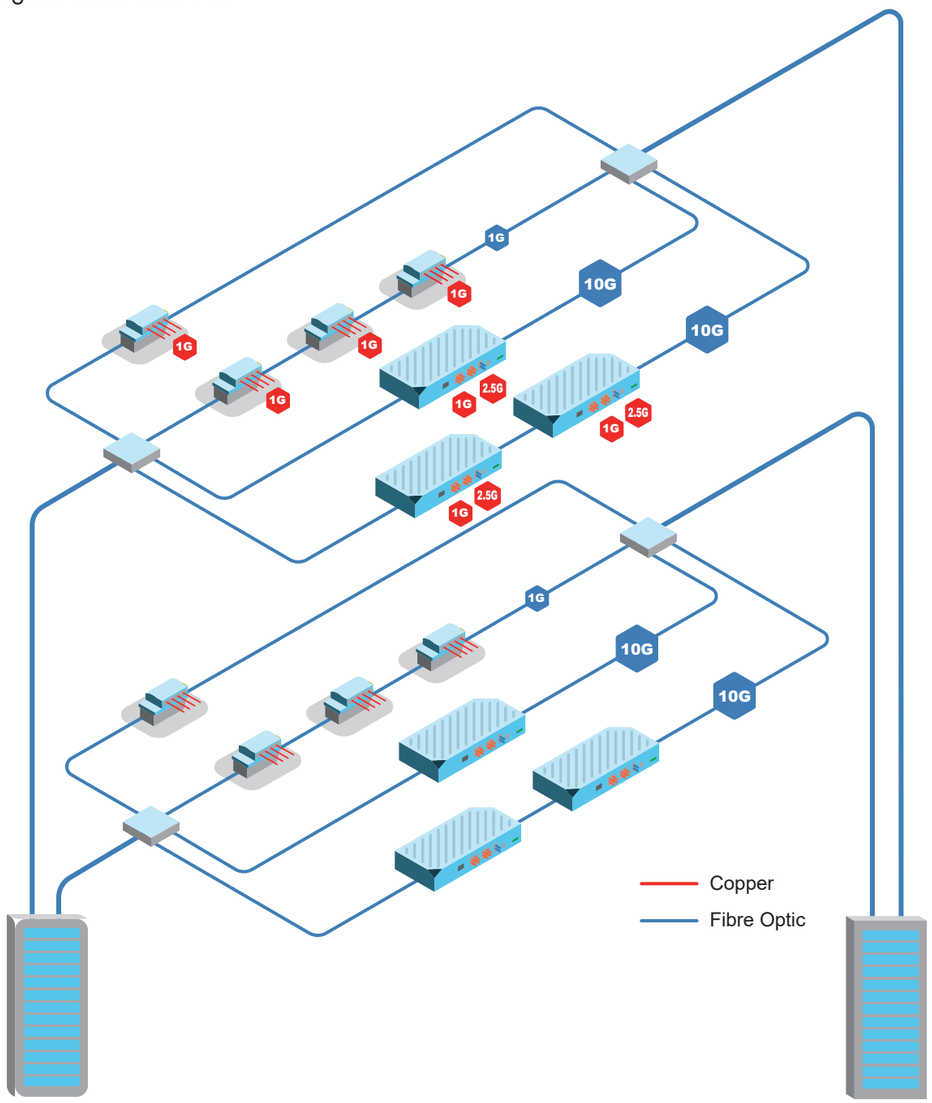
	1998	**2016**	**2016**	**2018**
	1 Gigabit IEEE 802.3ab	**2.5 Gigabit** IEEE 802.3bz	**5 Gigabit** IEEE 802.3bz	**10 Gigabit** IEEE 802.3an
Frequency	100Mhz	100Mhz	200 Mhz	400Mhz
Cable type	CAT5e	CAT5e	CAT6	CAT6A
Distance	100 m	100 m	100 m	100 m

LANactive FTTO & DICE

The XGigaSwitch DICE (Digital Ceiling) is an ideal extension of FTTO networks to provide more bandwidth and more power to the increasing number of connected devices in a Local Area Network. It provides more connectivity in places where it is needed - in the Digital Ceiling. Based on a future-proof fibre infrastructure only a minimum of cabling volume is necessary to connect the DICE switch. In combination with smart mounting options, the DICE switch can be used in multiple installation scenarios.

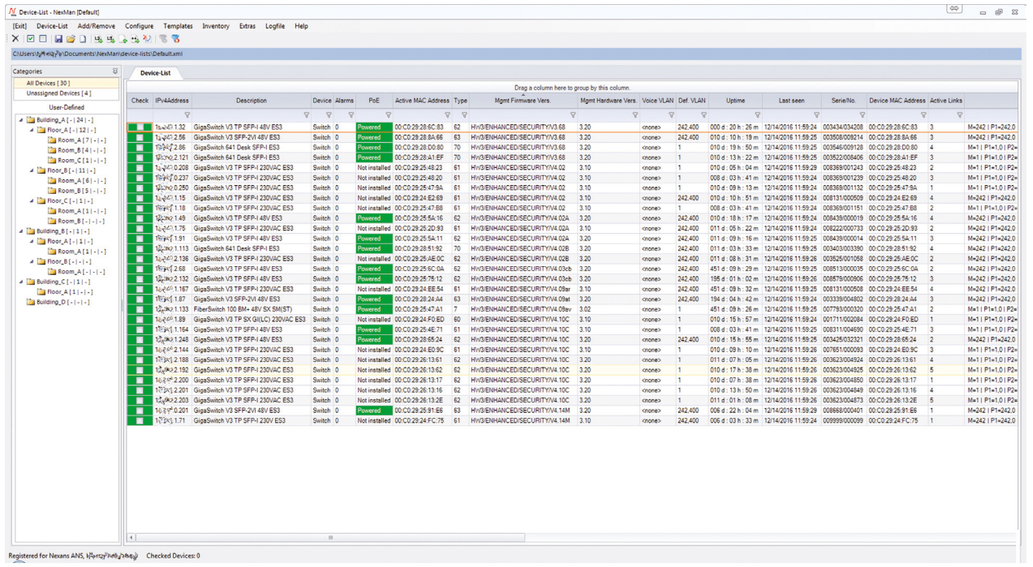
Benefits

- Scalable LAN infrastructure
- Future-proof technology
- Extended redundancy
- Fully automated with Zero-Touch Configuration
- Space saving installation
- Savings in OPEX & CAPEX



LANactive Manager

LANactive Manager provides an easy, comfortable and secure solution for configuration, management and supervision of Nexans LANactive switches.



All LANactive switches (FTTO, DICE and Industry) can be managed via LANactive Manager.

Accurate view with intelligent device lists
Categories can be defined according to a tree structure and devices can be assigned using Drag & Drop. Any number of device lists can be created, arranged in different groups, sorted by IP address, MAC address, device name and software version, or imported from environments such as XML, CSV or from a database. Counting and labelling according to category are also possible, along with various viewing options and creation of Excel or XML inventory lists. The device list is automatically updated through polling and changes are highlighted.

Software Packages
LANactive Manager is available as a standalone version and used as a desktop application for single or multiple users. This installation is perfect for on-site network engineers who are connected locally.

LANactive Manager Client-Controller
LANactive Manager Client-Controller is a client-controller software architecture that is optimised for large installations with hundreds or thousands of switches. It allows simultaneous access from different clients via client software or web interface and supports the fully automated configuration process Zero-Touch Configuration.

The LANactive Manager Client-Controller is available for Windows and Linux operating systems.

Zero-Touch Configuration
Nexans LANactive Zero-Touch Configuration is a contemporary way of designing, building and operating networks with minimum effort. The use of LANactive Manager together with LANactive switches ensures networks are flexible and scalable.

Product overview

XGigaSwitch DICE 8TP 2SFP+ AC

The new LANactive XGigaSwitch is optimised for supporting Wireless LAN infrastructures. Based on MultiGigabit copper and 10 Gigabit SFP+ interfaces the switch is able to support the bandwidth required by the latest Wireless LAN standards.

- 2 Uplink Ports (SFP+) and 8 Access Ports (RJ45)
- Power over Ethernet (PoE++) up to 90Watts per port
- Energy Efficient Ethernet
- Memory Card Slot
- Wide Input Voltage Range 90 ... 264V AC

Article No	Description
88306800	**XGigaSwitch 8TP 2SFP+ AC** User Ports (RJ45): 4x 1000Base-T and 4x 2.5GBase-T Uplink Ports (SFP+): 2x 1/10Gbps Power Cable/ Connector: 1,5m with Power Connector (CEE 7/4)

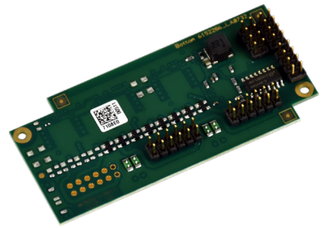
XGigaSwitch DICE 8TP 2SFP+ DC

The new LANactive XGigaSwitch is optimised for supporting Wireless LAN infrastructures. Based on MultiGigabit copper and 10 Gigabit SFP+ interfaces the switch is able to support the bandwidth required by the latest Wireless LAN standards.

- 2 Uplink Ports (SFP+) and 8 Access Ports (RJ45)
- Power over Ethernet (PoE++) up to 90Watts per port
- Energy Efficient Ethernet
- Memory Card Slot
- Wide Input Voltage Range 46 ... 57V DC

Article No	Description
88306801	**XGigaSwitch DICE 8TP 2SFP+ DC** User Ports (RJ45): 4x 1000Base-T and 4x 2.5GBase-T Uplink Ports (SFP+): 2x 1/10Gbps Power Cable/ Connector: 3-pin connector with plug-in screw terminal

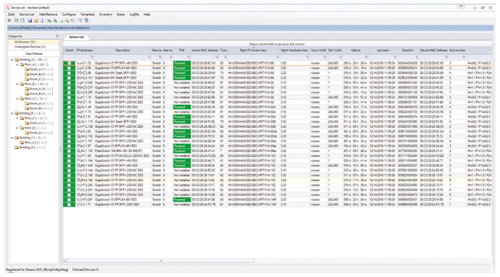
Product overview



iOption PoE+ or PoE++

The latest Power over Ethernet standard IEEE802.3bt enables the remote powering with up to 90 Watts per port. Equipment like Wireless LAN Access Points, IP-Cameras, Connected Lighting or Smart Building Systems can be supplied with power from the switch directly. The Power over Ethernet functionality can be parametered,controlled and monitored via management.

Article No	Description
88301604	**iOption PoE+ 6/8P-30W, 8x PoE+ (IEEE802.3at)** 8x PoE+
88301666	**iOption PoE++ 6/8P-90W, 8x PoE++ (IEEE802.3bt)** 8x PoE++



LANactive Manager

- Stand-Alone version and Client-Controller version
- Zero-Touch Configuration
- Extended management for firmware and configuration changes
- Different access levels, roles and user specified device lists
- Logging and alarming functionality
- Free of charge evaluation version

Article No	Description
88301908	**LANactive Manager Single User Licence**
88301909	**LANactive Manager Company Licence**
88301920	**LANactive Manager Controller Licence**

Memory Cards

Nexans memory cards have an integrated and unique MAC address that is taken over by the switch. The memory cards are used as backup location for the current switch configuration and firmware.

Article No	Description
88300692	**SD Memory Card with MAC-Address** Delivery: Separately in plastic case
88300696	**SD Memory Card with MAC-Address plugged** Delivery: Pre-installed in the switch

Product overview

Transceiver

Nexans Small Form Factor Pluggable (SFP+) transceivers are designed for operation in Nexans LANactive switches.
Nexans SFP+ transceivers are compliant with SFP MSA (Multi-Source Agreement) and SFF-8472.
All SFPs meet Class I Laser Safety requirements in accordance with IEC-825.

For a detailed specification of Nexans SFP+ modules, please refer to the datasheet.

Article No	Description
88646390	**Nexans SFP+, 10GBase-SR, 850nm MM** Ethernet Standard: 10GBase-SR Fibre Type: Multimode Fibre
88646391	**Nexans SFP+, 10GBase-LR, 1310nm SM** Ethernet Standard: 10GBase-LR Fibre Type: Singlemode Fibre
88646015	**Nexans SFP, 1000Base-SX, 850nm MM** Ethernet Standard: 1000Base-SX Fibre Type: Multimode Fibre
88646016	**Nexans SFP, 1000Base-LX, 1310nm SM** Ethernet Standard: 1000Base-LX Fibre Type: Singlemode Fibre

Console Cable

The console port on Nexans switches allows access to the command line interface of the switch and can be used to configure the switch on site and/or to retrieve its status. Configuration via console port provides the same functionality as configuration via Telnet or SSH.

- For connecting the Nexans switch to a PC or a notebook a system-specific adapter cable is required which is terminated on the PC/notebook side with an USB connector.

Article No	Description
88300716	**RJ45 to USB Adapter for Serial Console** - Connector A: RJ45 - Connector B: USB

Product overview

Desktop Power Supply 54VDC

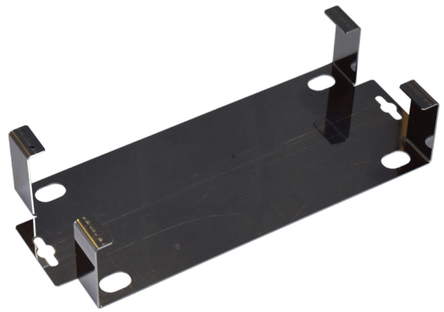
- Power Supply for Nexans XGigaSwitch series
- Full PoE (IEEE 802.3af, at and bt) compatible
- Fanless design
- Output Power: 65W or 240 Watts
- Control-LED
- Primary Connection (100-240V AC) via C14 connector
- Secondary connection (54V DC):
  - Three core wire H03VV cord, 1m, with moulded 3-pin connector
- Mutual connection of function earth
- Low Voltage Directive „Protection Class I“

Article No	Description
88646283	**Desktop Power Supply 54VDC/240W**
88646077	**Power Supply with Schuko 54VDC/65W**

Power cable, H05VV-F 3G1, 2m, black

Article No	Description
88646208	**Power cable, H05VV-F 3G1, 2m, black** Site A: CEE 7/4 Site B: IEC-Lock C13

Mounting Kit for Power Supply 240W



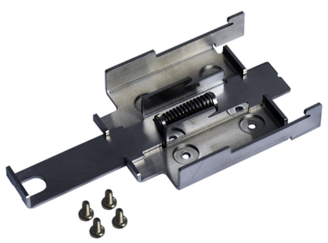
Article No	Description
88646214	**Power cable, H05VV-F 3G1, 2m, black** Mounting Kit for Power Supply 240W, stainless steel, for 88646283

Product overview

19“ Mounting Kit

The 19“ Mounting Kit allows an easy installation of the XGigaSwitch DICE in 19“ racks. The brackets are mounted sideways.

Article No	Description
88646402	**XGigaSwitch DICE 19“ Mounting Kit** Colour: Deep Black, like RAL 9005



DIN-Rail Mounting Kit

The DIN-Rail Mounting Kit allows an easy installation of the XGigaSwitch DICE on standard DIN-Rails. The clip is fixed on the backside of the switch.

Article No	Description
88306811	**XGigaSwitch DIN-Rail Mounting Kit** Colour: Unpainted, stainless-steel

Installation example

Product overview

Mounting Plate

The Mounting Plate allows an easy and smart installation of the LANactive XGigaSwitch DICE. It can be mounted on walls or below the ceiling and has an integrated fixing mechanism for the active switch. After installation of the plate the XGigaSwitch DICE can be mounted toolless. The integrated strain-relief allows a safe and protected installation of copper or fibre optic cables.

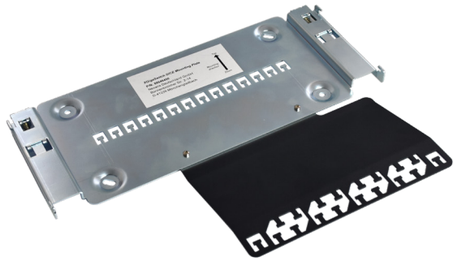
Article No	Description
88646400	**XGigaSwitch DICE Mounting Plate** Colour: Unpainted, stainless-steel Dimensions (W x H x D): 334 x 140 x 21mm

Strain-relief

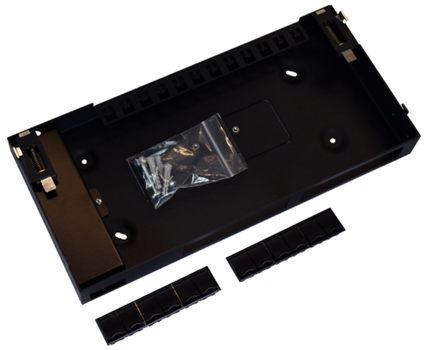
In case the integrated strain-relief is not sufficient, an external additional strain-relief can be added to fix the cables in front of the XGigaSwitch DICE.

Article No	Description
88646400	**XGigaSwitch DICE Strain-Relief** Colour: Unpainted, stainless-steel Dimensions (W x H x D): 197 x 150 x 24mm

Installation examples



Product overview



DICE Mounting Frame

The DICE Mounting Frame allows the installation and termination of the needed network and power cables. It offers the installation of up to 12 snap-in connectors terminating copper and/or fibre cables. It is also possible to connect the power cabling via WAGO or Wieland connector. After installation of the DICE Mounting Frame the XGigaSwitch DICE can be mounted toolless.

Article No	Description
88646470	**DICE Mounting Frame** Colour: Pure white, like RAL 9010 Dimensions (W x H x D): 335 x 170 x 40mm

DICE Mounting Frame Cable Protection

To protect the cabling for unauthorised access the Cable Protection can be used.

Article No	Description
88646472	**DICE Mounting Frame Cable Protection** Colour: Deep black, like RAL 9005 Dimensions (W x H x D): 337 x 157 x 90 mm

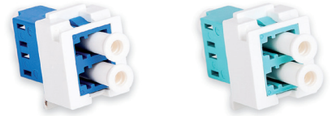
Installation examples

Product overview

LANmark CAT6/CAT6A Snap-In Connector

Via LANmark Snap-In CAT6 and CAT6A connectors twisted pair cabling can be terminated in the DICE Mounting Frame.
The LANmark connectors are fully compliant with TIA and ISO cabling standards and support PoE++ applications with up to 90 Watts over 4 pairs.

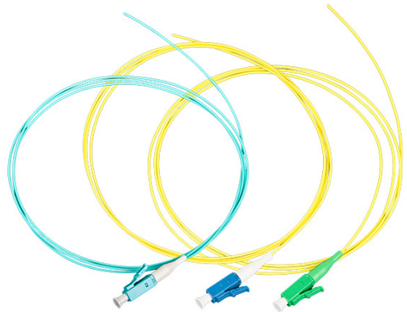
Article No	Description
N420.666	**LANmark-6 Evo Snap-In Connector** CAT6
N420.66A	**LANmark-6A Evo Snap-In Connector** CAT6A



LANmark-OF Snap-In Adaptor

The LANmark-OF Duplex Snap-In Adaptor is a timesaving option to terminate fibre optical cabling in the DICE Mounting Frame.

Article No	Description
N205.617	**LANmark-OF Multimode Duplex LC Snap-In Adaptor** Colour: Aqua Connector Type: Multimode LC
N205.627	**LANmark-OF Singlemode Duplex LC Snap-In Adaptor** Colour: Blue Connector Type: Singlemode LC/PC

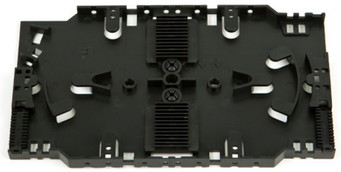


LANmark-OF Pigtails

LANmark-OF Maxistrip Pigtails for connection in the DICE Mounting Frame. The Maxistrip pigtail can be stripped up to 100cm in one action and are compatible with LANmark-OF splice cassettes with heat shrink and aluminium protectors.

Article No	Description
N121.5MLA	**LANmark-OF Pigtail LC OM3 Maxistrip LSZH 50/125** Length: 1m Colour: Aqua Fibre Type: Multimode OM3 Connector Type: LC
N121.4MLY	**LANmark-OF Pigtail LC/UPC Singlemode Maxistrip LSZH 9/125** Length: 1m Colour: Yellow Fibre Type: Singlemode OS2 Connector Type: LC/PC

Product overview



LANmark-OF Splice Cassette

The LANmark-OT Splice Cassette is designed for the management of up to 12 splices with heat shrink protectors.

Article No	Description
N890.095	**Splice Cassette Heat Shrink Protectors** Dimensions (B x H x T): 155 x 92 x 8.5mm
N890.096	**Splice Cassette Aluminum Protectors** Dimensions (B x H x T): 155 x 92 x 8.5mm
N890.097	**Splice Cassette Cover** Dimensions (B x H x T): 155 x 92 x 2mm

Wago

Wieland

WAGO and Wieland Snap-In Power Connector

Via WAGO or Wieland Snap-In Power connectors the power connection for the XGigaSwitch DICE can be terminated in the DICE Mounting Frame.

Article No	Description
88646475	**WAGO WINSTA Midi Snap-In Connector** Core Size: 0.5 … 4mm² Stripping length: 9mm
88646473	**Wieland GST18i3 Snap-In Connector** Core Size: 0.5 … 2.5mm² Stripping length: 9mm

WAGO and Wieland Power Connecting Cable

Power Cable with WAGO or Wieland connector.

Article No	Description
88306814	**WAGO WINSTA Connecting Cable AC** Length: 0.3m Site A: WAGO WINSTA Midi Plug Site B: C13
88306816	**Wieland GST18i3 Connecting Cable AC** Length: 0.3m Site A: Wieland GST18i3 Plug Site B: C13
88306815	**WAGO WINSTA Connecting Cable DC** Length: 0.3m Site A: WAGO WINSTA Midi Plug Site B: 3-Pin
88306817	**Wieland GST18i3 Connecting Cable DC** Length: 0.3m Site A: Wieland GST18i3 Plug Site B: 3-Pin

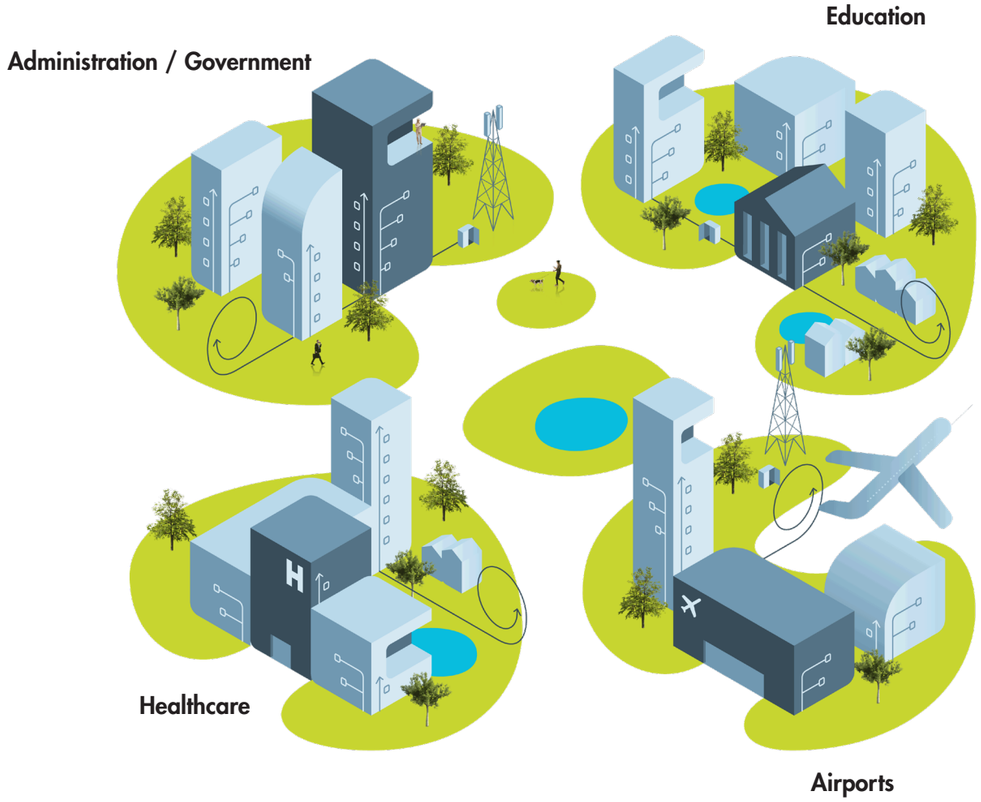
About Nexans ...

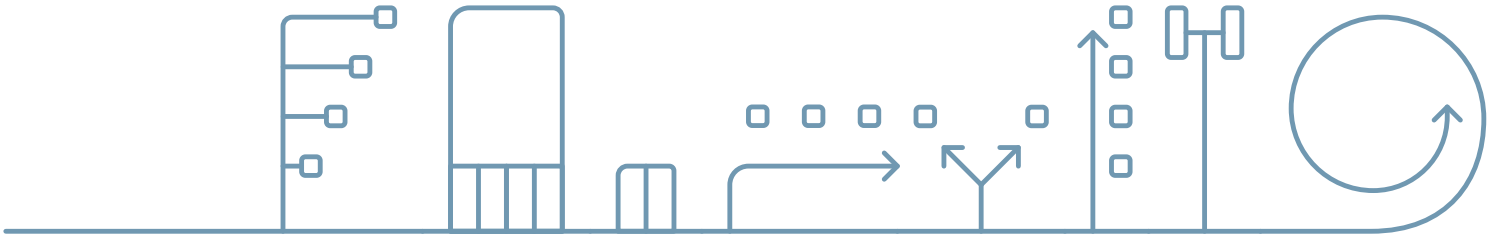
Nexans' premium high-tech networking solutions have proven their reliability in countless applications worldwide. Nexans offers over 35 years of experience in research, development and production of FTTO switches and network design. All solution components are designed and manufactured by Nexans in Germany.

Customers include top global companies and institutions, from airports, utilities, industrial plants, hospitals and railway companies to universities,ministries and the financial sector. Nexans guarantees exceptional product quality and offer end users and partners extensive support.

Nexans' Engage program provides support to a global customer base, through all stages of even the most complex projects. Key Account Managers act as a single point of contact, providing instant access to an extensive network of regional offices, experts, advisors and partners. Nexans can provide valuable support right across the board – from planning and design optimisation to logistics and on-site technical support. A network of trained system integratorsand specialised installers in various countries ensure smooth implementation.

- Market pioneer for FTTO systems with proven track record
- Technology leader and innovation driver
- 'Made in Germany' quality
- Tailor-made concepts and customisation
- Integrated concept including accessories, software features
- First class global support





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