

Distribution Network

Converging Energy and Broadband Solutions

Converging energy and broadband solutions

Short description of the solution

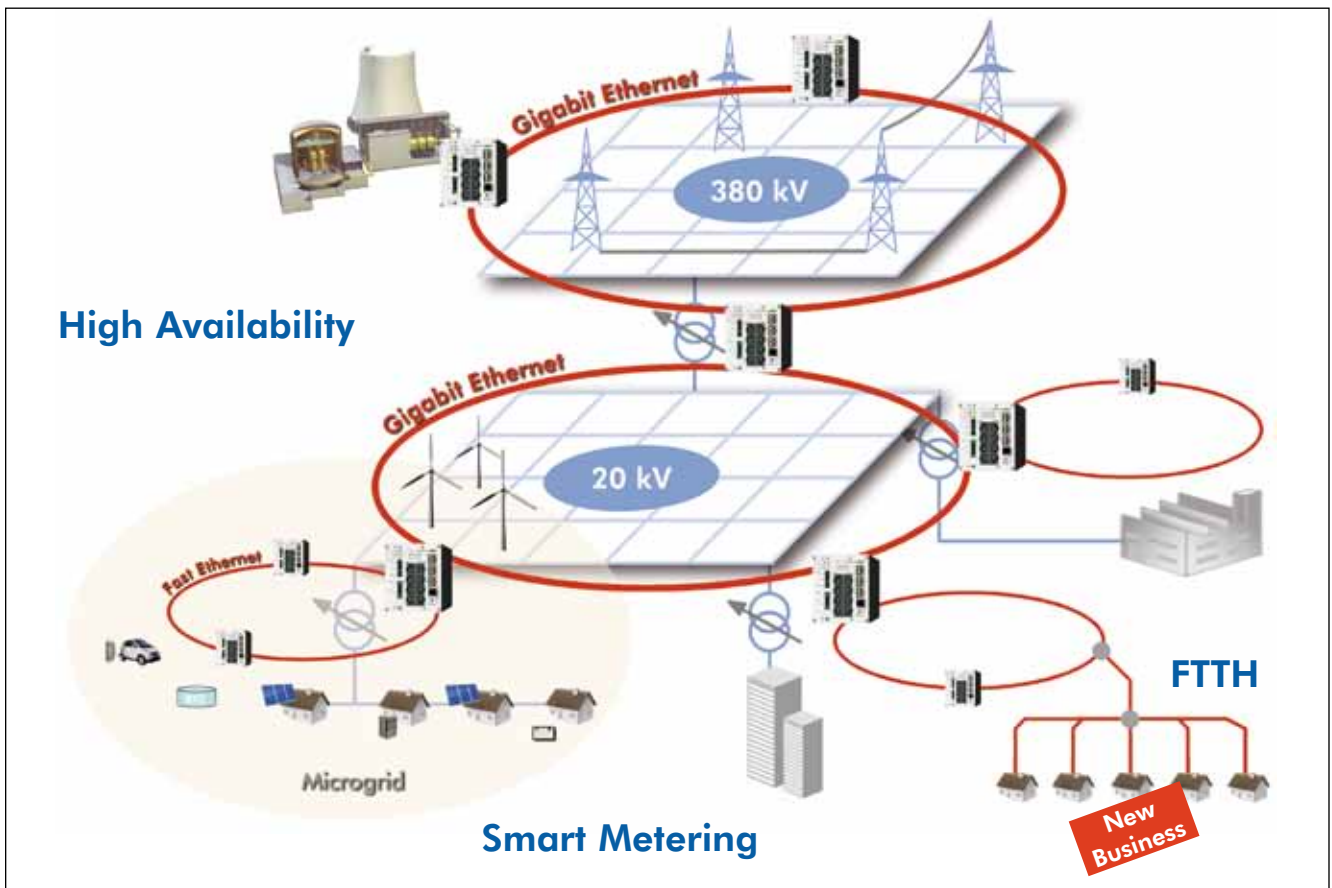
Based on more than 25 years of experience in the field of high-performance optical fiber and copper networks, Nexans is offering state-of-the-art active Ethernet based switch systems for converging energy and broadband applications. Fields of application include the control of wind turbines, the networking of transformer substations, remote monitoring of power meters (e.g. automatic metering), and security (e.g. access control, video surveillance, etc.) as well as FTTH.



Transformer Station (Example)



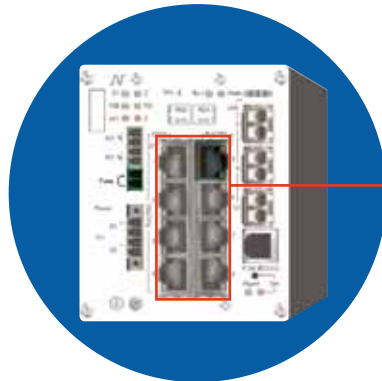
Hybrid Cable (Energy and Fiber Optic) and Nexans Ethernet Switch for Harsh Environment Applications (Switch G 1043E)



Advantages of the solution

Cable Diagnostic Function

The iSwitch series ensures the easy and fast localization of possible faults on the copper twisted-pair cable links. Short circuits, interruptions, impedance mismatches or reversals, can be localized to the meter via the management feature.



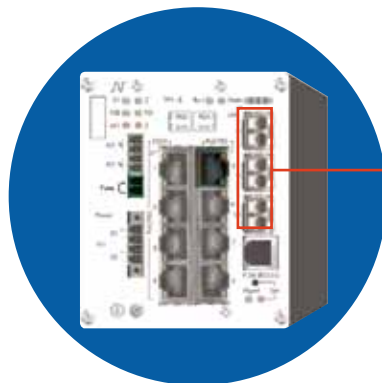
Cable Diagnostic Monitoring Function for TP-Ports

Port Type	Cable Type	Status	Max. Power	Current Power
TP 10/100/1000	1000000000	OK	0.0	0.0
TP 10/100/1000	1000000000	OK	0.0	0.0
TP 10/100/1000	1000000000	OK	0.0	0.0
TP 10/100/1000	1000000000	OK	0.0	0.0
TP 10/100/1000	1000000000	OK	0.0	0.0
TP 10/100/1000	1000000000	OK	0.0	0.0

SFP Readout Function

By using special Small Form Factor Pluggable (SFP) modules with Digital Diagnostic Monitoring Function in our Nexans iSwitch Systems you are able to monitor the optical parameters and to recognize upcoming problems with the fiber optic link at an early stage!

The Nexans switch management allows to define «Threshold Values» for Laser Bias Current, Output Power and Input Power for each individual SFP interface!

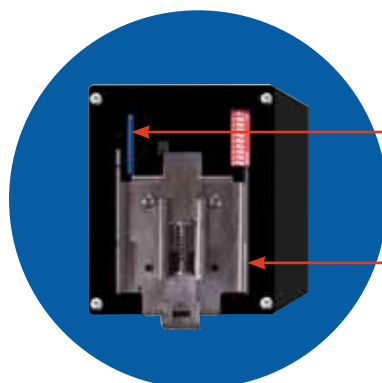


SFP-Readout-Function with threshold definition

SFP ID	SFP Type	SFP Name	SFP Power	SFP Temperature	SFP Status
1	1000000000	1000000000	0.0	0.0	OK
2	1000000000	1000000000	0.0	0.0	OK
3	1000000000	1000000000	0.0	0.0	OK
4	1000000000	1000000000	0.0	0.0	OK
5	1000000000	1000000000	0.0	0.0	OK
6	1000000000	1000000000	0.0	0.0	OK

MMC Memory Card

All Nexans iSwitch Systems can be equipped with a MMC Memory Card. Once installed this memory card always stores the latest configuration of the switch. In the event of a system exchange it significantly simplifies the reconfiguration, saves time and maintenance costs! A system exchange can even be done by an untrained worker!



MMC Memory Card

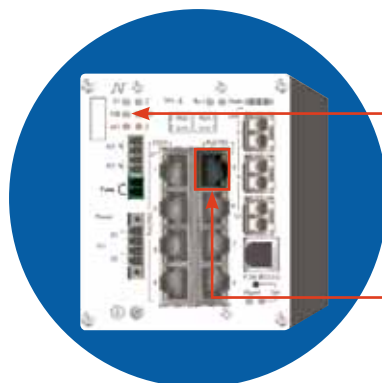
To save and/or recover the complete system configuration or boot the system with the Memory Card MAC Address.

Solid stainless steel DIN-rail mounting clip



Multifunctional Input

The Multifunctional Input can be configured as normally open contact (NOC) or normally closed contact (NCC) and can be used to realize e.g. access controls, etc. easily.



Powered Device (PD)

Multifunctional Input

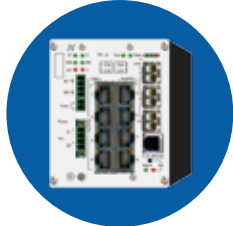

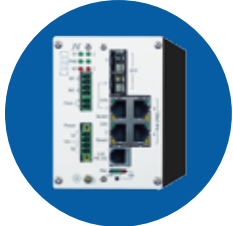
e.g. for the connection of door contacts etc.

Optional transmission of appropriate alarm messages when activated.

Power Source Equipment

Optionally the switch can also be supplied with power via an RJ45 external connection.

Technical Data and Order Numbers

Splice frame			
	iSwitch G 1043E	iSwitch G 1003E PSF	iGigaSwitch 542E
			
	<p>-40°C ... +85°C IEC 61850-3 5 year warranty</p>		
Order Numbers	88306251 (SFP-Version)	88306261 (SFP-Version)	88306300 (SFP-Version)
Option Power over Ethernet	88301262	-	88301262
LAN Interfaces			
User Interfaces (RJ45)	1x 10/100/1000BASE-T(X)* 7x 10/100BASE-T(X) (four of them with PoE according to IEEE802.3af)	1x 10/100/1000BASE-T(X)* 7x 10/100BASE-T(X) (No PoE Function)	4x 10/100/1000BASE-T(X)* (four of them with PoE according to IEEE802.3af)
Uplink Interfaces	3x 100/1000 Mbps SFP (Varioport)	3x 100/1000 Mbps SFP (Varioport)	2x 100/1000 Mbps SFP (Varioport)
General			
Housing design	Anodised / varnished aluminium case	Anodised / varnished aluminium case	Anodised / varnished aluminium case
Dimensions	85 mm x 105 mm x 106 mm	126 mm x 105 mm x 106 mm	75 mm x 105 mm x 106 mm
IP degree of protection	IP30	IP30	IP30
Ambient temperature	Operation: -40°C ... +85 °C Storage: -40°C ... +85 °C	Operation: -40°C ... +85 °C Storage: -40°C ... +85 °C	Operation: -40°C ... +85 °C Storage: -40°C ... +85 °C
Relative humidity	up to 95 % non-condensing	up to 95 % non-condensing	up to 95 % non-condensing
Weight	750 g	1250 g	670 g
Power Supply and PoE (for the use of PoE an input voltage between 46 VDC and 57 VDC is required)			
Input voltage	21 ... 57 VDC redundant	88 ... 370 VDC, 21 ... 57 VDC	21 ... 57 VDC redundant
Power consumption (without PoE)	max. 12 W (at 24 VDC)	max. 12 W (at 24 VDC)	max. 9,2 W (at 24 VDC)
Interface connector	4-pin terminal block, screw-on type	4-pin terminal block, screw-on type	4-pin terminal block, screw-on type
PoE output power per Port	15,4 W	-	15,4 W
PoE Mode	Mode A, Pin 1-2/3-6	-	Mode A, Pin 1-2/3-6
Contacts and Digital I/O			
Alarm contacts	2x independent relay outputs each with 1A / 30 VDC (normally closed)	2x independent relay outputs each with 1A / 30 VDC (normally closed)	2x independent relay outputs each with 1A / 30 VDC (normally closed)
Function contact	2-pin input (e.g. for door contacts, etc.) / change of status indication via the management		
Switch functional parameters			
Switching method	Store and forward, self-learning	Store and forward, self-learning	Store and forward, self-learning
Data throughput (per 100 Mbps Port)	148.800 Packets/sec.	148.800 Packets/sec.	148.800 Packets/sec.
Data throughput (per 1.000 Mbps Port)	1.488.000 Packets/sec.	1.488.000 Packets/sec.	1.488.000 Packets/sec.
Packet buffer	1 Mbit	1 Mbit	1 Mbit
MAC address table, entries	8 k	8 k	8 k
Aging Timer	typ. 300 sec.	typ. 300 sec.	typ. 300 sec.
Flow control in HDX mode	Back pressure through 96 bit JAM	Back pressure through 96 bit JAM	Back pressure through 96 bit JAM
Flow control in FDX mode	Flow control according to IEEE 802.3x	Flow control according to IEEE 802.3x	Flow control according to IEEE 802.3x
Management (List of management features see page 11)			
WEB-Management	yes	yes	yes
TELNET-Management	yes	yes	yes
SNMP	yes	yes	yes
Standards			
Electrical safety	EN 60950		
Emission	EN 61000-6-4, EN 55022 Class A, EN 55011		
Immunity	EN 61131-2, EN 61000-4-2, Class 3 / EN 61000-4-3 / EN 61000-4-4, Class 4 / EN 61000-4-5, Class 4 / EN 61000-4-6 IEC 61850-3		
Temperature	EN 61131-2, EN 60068-2-1, EN 60068-2-2, EN 60068-2-14		
Vibration	EN 60068-2-6		
Shock	EN 60068-2-27		
Free fall	EN 60068-2-32		
Humidity	EN 60068-2-30, IEC 60870-2-2, Class C3/Ct2 (tmin), Class C3/Dt1 (tmax), Class Cm (mech.), Class C1 (3K5 %)		
Others	CE, cUL 60950 / cUL 508 (in preparation) , IEC 61850-3 /-10, IEEE 1613		

* - if SFP-Varioport 1* is not equipped with SFP



Global expert in cables and cabling systems

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