

# iGigaSwitch 1606 HSR HW5 Series

## Contact

Nexans LAN Systems  
Tel.: +49 (0) 2166 27 2220  
sales.ans@nexans.com  
www.nexans.com/LANActiveIndustry

## LANactive Industry 16 Port Managed Full Gigabit Ethernet Switch

- 16 ports in total, 10x RJ45 and 6x SFP ports
- 2x SFP ports for Zero-Loss Redundancy (HSR/PRP)
- Optionally with integrated I/O module
- IEC 61850 compliancy is tested and certified by KEMA/DNV-GL
- Wide operating temperature range: -40 ... +70/85°C

## Description

Nexans managed Industrial Ethernet iGigaSwitch 1606 HSR is part of the LANactive Industry product portfolio and is designed for installing robust and reliable networks in harsh environment. LANactive Industry iGigaSwitch 1606 HSR is designed to provide maximum network availability, security, longest lifetime in harsh environments and making a network maintenance easier.

iGigaSwitch 1606 HSR provides great flexibility in network design - it has 16x Gigabit Ethernet ports (10x RJ45 and 6x SFP). The iGigaSwitch allows to adapt the interfaces to the application by using the corresponding pluggable modules (Fast Ethernet or Gigabit Ethernet SFP).

### I/O Interfaces

The optionally I/O interfaces of the iGigaSwitch 1606 allows a fast, simple and low-cost integration of non-IP based devices directly e.g. different sensors, controllers, buttons etc. The iGigaSwitch is offering extensive management functionalities with interactions, sending of messages as well as the activation of alarms.

### Zero-Loss Redundancy

High Availability and Seamless Redundancy (HSR) and Parallel Redundancy Protocol are a zero-loss redundancy protocols for ring network topologies. That means the iGigaSwitch sends packets in both directions of the ring that at least one packet will arrive the destination.

### Power over Ethernet (PoE/PoE+)

Up to 8x connected devices can be supplied with Power over Ethernet. In accordance with the latest IEEE 802.3at (PoE+) standard, up to 30W are available for each connected device, with total budget of 240Watts.

### IEC 61850

Nexans iGigaSwitch family comply to IEC 61850 requirements (parts 6, 7-1, 7-2, 7-3, 7-4, 8-1, 9-1 and 9-2 Communication networks and systems for power utility automation). This functionality is critical for Smart grid and allows to use standardized equipment to ensure correct and reliable communication of all networked devices of Smart grid infrastructure (including switches, PLCs, different controllers, sensors etc.) with each other and with central SCADA.

The compliance is tested and confirmed by KEMA/DNV-GL.



Made in Germany

## LANactive Industry

## Standards (extract)

IEEE 802.3  
IEEE 802.3u  
IEEE 802.3ab  
IEEE 802.3af  
IEEE 802.3at  
IEEE 802.3z  
IEEE 802.3x  
IEEE 802.1AB  
IEEE 802.1D  
IEEE 802.1Q  
IEEE 802.1X  
IEEE 802.1AX  
IEEE 802.3ad

IEC 61850-6, 7-1, 7-2, 7-3, 7-4, 8-1, 9-1, 9-2  
IEC 61850-3



Designed for harsh environments



PoE/PoE+



Compact Design



Interoperability



Easy Maintenance



Redundancy



Security and Reliability



High Availability

# Nexans

# iGigaSwitch 1606 HSR HW5 Series

**Contact**  
 Nexans LAN Systems  
 Tel.: +49 (0) 2166 27 2220  
 sales.ans@nexans.com  
 www.nexans.com/LANactiveIndustry

## Hardware Features

Ordering Information	iGigaSwitch 1606 HSR SFP-6VI HW5	iGiga Switch 1606 HSR SFP-6VI AC HW5
Article Number	88306406	88306476
<b>Interfaces</b>		
User Ports (RJ45)	10x 1000Base-T	
Uplink Ports (SFP)	4x 100/1000Mbps	
HSR/PRP Ports (SFP)	2x 100/1000Mbps	
RJ45 Ports	Auto-Negotiation, MDI/MDI-X Auto-Cross Over and Auto-Polarity	
Digital Diagnostics Monitoring Interface	Yes	
Twisted Pair Cable Diagnostic	Yes	
I/O Interface Connector	Optionally via iOption, see Accessories	
<b>Power over Ethernet (optional)</b>		
Max. Number of PoE+ Ports	8	-
Max. PoE Power Budget	240W	-
PoE Mode	30W per Port, Mode A, Pin 1-2/3-6	-
<b>General</b>		
Dimensions [WxHxD]	95mm x 184mm x 125mm	
IP Protection Class	IP30 (EN 60529)	
Mounting	35mm DIN-Rail Mounting according to EN 60715, (EN 50022) Different mounting positions of DIN-Rail clip - vertical and horizontal switch mounting. Optional: wall mounting.	
Material	Anodised/Varnished Aluminium	
Colour	Black	
Ambient Temperature	Operation: -40 ... 85°C, Storage: -40 ... 85°C	Operation: -40 ... 70°C, Storage: -40 ... 85°C
Relative Humidity	20 - 90% (non-condensing)	
Weight	1800g	
MTBF	> 500,000h	
<b>Power Supply</b>		
Input voltage for switch	18 ... 60V DC	90 ... 264V AC / 127 ... 370V DC
Input voltage for PoE+	46 ... 57 V DC (typ. 54V DC)	-
Power consumption (without PoE)	13W (standby) ... 15W (typ.) ... 28W (fully connected)	
Heat output	52 BTU(IT)/h (typ.)	
Connector	2x 3-pin terminal blocks, screw-on type (up to 2.5 mm <sup>2</sup> ) / (+) (-) (FPE)	1x 3-pin terminal blocks, screw-on type (up to 2.5 mm <sup>2</sup> ) / (PE) (L/+) (N/-)
Connector PoE	3-pin terminal blocks, screw-on type (up to 2.5 mm <sup>2</sup> ) / (+) (-) (FPE)	-
<b>CE - Conformity</b>		
Electro Magnetic Capability Directive	2014/30/EU	
Low Voltage Directive	-	2014/35/EU
RoHS 2	2011/65/EU	
Engineering Standards	EN 62368-1, EN 61000-6-2, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 50581, IEC 61850-3, -6, -7-1, -7-2, -7-3, -7-4, -8-1, -9-1, -9-2	

# iGigaSwitch 1606 HSR HW5 Series

## Contact

Nexans LAN Systems  
Tel.: +49 (0) 2166 27 2220  
sales.ans@nexans.com  
www.nexans.com/LANactiveIndustry

## Software Features

### Switching Parameters

Switching Type	Store-and-Forward, self-learning
Switching Capacity	50Gbps, non-blocking
Packet Forwarding Rate	2x 1.488Mpps per port
Max. Frame Size	9.600Bytes (Support of Jumbo frames)
Packet Buffer	512 kBytes
Latency (RFC1242)	100Mbps / 64Byte (FIFO/LIFO) 9µs / 9.3µs 100Mbps / 1518Byte (FIFO/LIFO) 125µs / 4µs 1000Mbps / 64Byte (FIFO/LIFO) 2.7µs / 2.2µs 1000Mbps / 1518Byte (FIFO/LIFO) 15µs / 2.5µs
MAC-Address Table	8.192 MAC-Addresses
VLANs	IEEE802.1q with up to 256 Groups
Quality of Service Layer 2	IEEE802.1p Class of Service (4 Queues per Port)
Quality of Service Layer 3	RFC2474/3168 DSCP (4 Queues per Port)
Bandwidth Limitation	Bitrate and Number of Packets
Energy Efficient Ethernet	IEEE802.3az
Flow Control	IEEE802.3x
Fabric Attach	Basic Fabric Attach Client Support

### Management

LEDs	Management, Port Status and Activity, Memory Card
Zero-Touch Configuration	Via LANactive Manager Controller
IP-Address	IPv4, IPv6
DHCP-Client	DHCP, DHCPv6
DHCP Relay Agent	Yes
File Transfer	TFTP, SCP
Console Port	V.24 with Nexans Console Cable
Web-Interface	HTTP, HTTPS
Command Line Interface	SSH, Telnet
Scripting	Yes
SNMP	SNMPv1, v2c, v3
Further Management Protocols	Syslog, LLDP, LLDP-MED, CDP
Time Synchronisation	SNTP
Port Statistics	Detailed per Port

### Redundancy

Redundancy Protocols	STP, RSTP, MSTP, MRP
Zero-Loss Redundancy	HSR, PRP
Link Aggregation	LACP

### Security

Password Protection	Two Access Levels (R/W or R/O)
Authentication via Radius and TACACS+	CLI and LANactive Manager
Access Control List (ACL)	Layer2 und Layer3
ACL for Management Interface	Up to 16 Access Control Lists
Portsecurity via MAC-Address	Up to 3 predefined MAC-Addresses
Portsecurity via Radius	IEEE802.1x
DHCP Snooping	Yes
Loop and Broadcast Limiter	Yes
Firmware Update	Dual Firmware Image
Configuration-/Reset Button	Yes / Yes (can be configured)
Memory Card	SD-Card, optionally with fixed MAC-Address



# iGigaSwitch 1606 HSR HW5 Series

## Contact

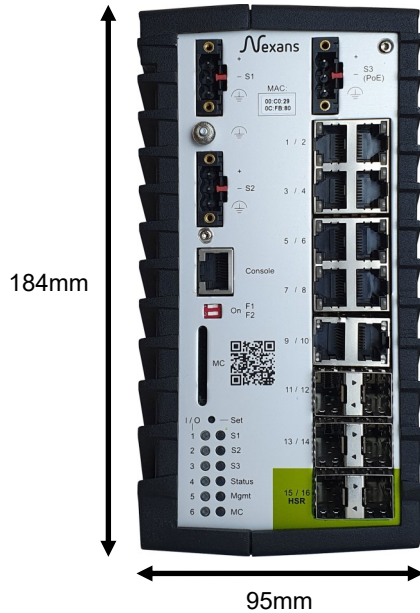
Nexans LAN Systems

Tel.: +49 (0) 2166 27 2220

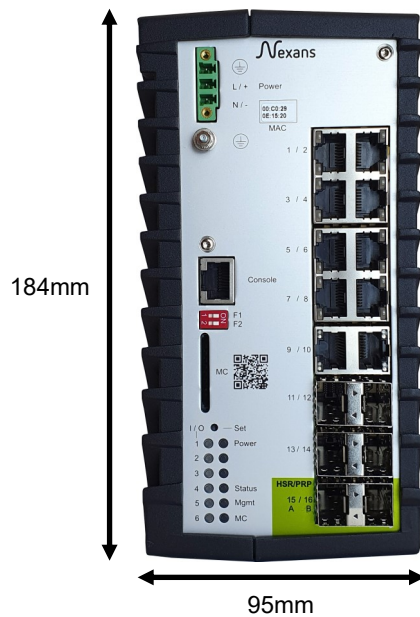
sales.ans@nexans.com

www.nexans.com/LANactiveIndustry

## Dimensions



**iGigaSwitch 1606 HSR SFP-6VI HW5 88306406**



**iGigaSwitch 1606 HSR SFP-6VI AC HW5 88306476**



## Accessories

### Ordering Information

88301604 (only available for 88306406)

88301623

### Description

iOption PoE+ 6/8P-30W

iOption I/O Digital 4xIn 2xOut 230V