HIRSCHMANN
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Product Bulletin

Full Gigabit OCTOPUS

IP67 Ethernet Switches

Hirschmann's Full Gigabit managed OCTOPUS PoE switches are enclosed in a L-shaped IP67 housing, reducing space for cabling while maximizing bandwidth, even in harsh settings.

- **Maximize network performance** and guarantee high-speed connections with full Gigabit Ethernet options on all ports
- **Power connected devices** up to 60 W through PoE with standard voltage of the switch
- **Ensure network reliability under extreme conditions** with vibration and waterproof IP67 housing design
- **Save precious operating space** with L-shaped housing for reduced cabling space and IP67 protection for cabinet-less mounting

Key Features

- Full Gigabit Ethernet switch and router in IP67 housing
- 120 W Power over Ethernet with optional PoE supply
- Configurable feature sets including three housing sizes for 8, 16 or 24 ports
- HiOS software up to Layer 3 advanced for switching and routing
- Power supply variants include 24 V DC, 110 V DC, 110 V AC and 230 V AC
- IP67 and IP65 protection degree
- Vibration-proof M12 connectors
- Extensive operating temperature range (-40°C to +70°C)
- Rail approvals for safe usage onboard, as well as along tracks, including EN 50121-4, EN 50155, EN45545-2

With Gigabit Ethernet on all ports, the Full Gigabit managed OCTOPUS PoE switches are an evolutionary step in meeting real-time data demands with high-speed connections in condensed industrial spaces.

Be certain.
Belden.

Full Gigabit OCTOPUS IP67 Ethernet Switches

Hirschmann's Full Gigabit OCTOPUS IP67 Ethernet switches offer a powerful, yet economical, solution for industrial engineers seeking to optimize network performance in harsh, condensed operating spaces.

The unique L-shaped housing takes up less space for cabling both onboard and along rail system tracks and the PoE port options save costs by eliminating the need for separate cabling to power end devices, such as IP cameras. The compact design and cabinet-less mounting make installation and maintenance simple and cost-effective.

Highly configurable, the Full Gigabit OCTOPUS switches are available in a variety of feature sets including three housing sizes with 8, 16 or 24 ports to allow expansion tailored to meet individual network demands. Combined with advanced redundancy mechanisms and IP67 protection against water and dust, industrial engineers can now ensure high-speed connections in harsh conditions with increased reliability, no matter the industrial environment.

Applications

Built in compliance with international train standards, the Full Gigabit OCTOPUS switches from Hirschmann are ideal solutions for industrial engineers needing a high-end switch for use onboard trains and alongside tracks. The switches are also well-suited for applications requiring superior data transfer rates, such as high-definition IP cameras in production and embedded quality control, as well as situations where devices need to withstand extreme temperatures and exposure to vibration and dust.

Markets

Hirschmann's Full Gigabit OCTOPUS switches are designed for a variety of industrial markets, including transportation settings—specifically mass transit systems, traffic control systems, rail-rolling stock and railway and train stations, as well as general manufacturing, automotive and machine building industries.

Hirschmann's Full Gigabit OCTOPUS switches are extremely reliable and enclosed in a IP67-protected, L-shaped housing for condensed spaces, making them specifically-designed to meet high network data demands in extreme environments.

Technical Information

Product Description			
Type	**OS3-4x-xx24xx**	**OS3-4x-xx16xx**	**OS3-4x-xx08xx**
Example Images			
Description	Managed IP65/IP67 switch in accordance with IEEE 802.3, store-and-forward-switching and routing, Fast-Ethernet (10/100 MBit/s) and Gigabit-Ethernet (10/100/1000 MBit/s), M12 ports, PoE+		
Port Type and Quantity	24 Ports	16 Ports	8 Ports
Additional Interfaces			
Power Supply	M12-Power L-coded (24 to 54 V DC)/K-coded (72 to 110 V DC/110 to 230 V AC)		
Signalling Contact	M12 plug A-coded		
USB (ACA)	M12 socket A-coded		
RS232	M12 socket A-coded		
Network Size – Length of Cable			
Twisted Pair (TP)	0 to 100 m		
Power Requirements			
Operating Voltage	24 to 110 V DC, 110 to 230 V AC; 54 V for 120 W PoE+		
Ambient Conditions			
Operating Temperature	-40 °C to +70 °C		
Relative Humidity (also condensing)	10% to 100%		
Mechanical Construction			
Dimensions (W x H x D)	478 x 138 x 198 mm	401 x 138 x 198 mm	324 x 138 x 198 mm
Weight	8 kg	5 kg	4 kg
Protection Class	IP65 and IP67		
Software			
Switching	Independent VLAN Learning; Fast Aging; Static Unicast/Multicast Address Entries; QoS / Port Prioritization (802.1D/p); TOS/DSCP Prioritization; Interface Trust Mode; CoS Queue Management; IP Ingress DiffServ Classification and Policing; IP Egress DiffServ Classification and Policing; Queue-Shaping / Max. Queue Bandwidth; Flow Control (802.3X); Egress Interface Shaping; Ingress Storm Protection; Jumbo Frames; VLAN (802.1Q); Protocol-based VLAN; VLAN Unaware Mode; GARP VLAN Registration Protocol (GVRP); Voice VLAN; MAC-based VLAN; IP subnet-based VLAN; GARP Multicast Registration Protocol (GMRP); IGMP Snooping/Querier per VLAN (v1/v2/v3); Unknown Multicast Filtering; Multiple VLAN Registration Protocol (MVRP); Multiple MAC Registration Protocol (MMRP); Multiple Registration Protocol (MRP)		
Redundancy	HIPER-Ring (Ring Switch); HIPER-Ring over Link Aggregation; Link Aggregation with LACP; Link Backup; Media Redundancy Protocol (MRP) (IEC62439-2); MRP over Link Aggregation; Redundant Network Coupling; Sub Ring Manager; RSTP 802.1D-2004 (IEC62439-1); MSTP (802.1Q); RSTP Guards; VRRP; VRRP Tracking; HiVRRP (VRRP enhancements)		
Management	DNS Client; Dual Software Image Support; TFTP; SFTP; SCP; LLDP (802.1AB); LLDP-MED; SSHv2; V.24; HTTP; HTTPS; Traps; SNMP v1/v2/v3; Telnet		
Diagnostics	Management Address Conflict Detection; MAC Notification; Signal Contact; Device Status Indication; TCPDump; LEDs; Syslog; Persistent Logging on ACA; Email Notification; Port Monitoring with Auto-Disable; Link Flap Detection; Overload Detection; Duplex Mismatch Detection; Link Speed and Duplex Monitoring; RMON (1,2,3,9); Port Mirroring 1:1; Port Mirroring 8:1; Port Mirroring N:1; RSPAN; SFLOW; VLAN Mirroring; Port Mirroring N:2; System Information; Self-Tests on Cold Start; Copper Cable Test; SFP Management; Configuration Check Dialog; Switch Dump		
Configuration	Automatic Configuration Undo (roll-back); Configuration Fingerprint; Text-based Configuration File (XML); BOOTP/DHCP Client with Auto-Configuration; DHCP Server: per Port; DHCP Server: Pools per VLAN; AutoConfiguration Adapter ACA31 (SD card); AutoConfiguration Adapter ACA21/22 (USB); HiDiscovery; DHCP Relay with Option 82; Command Line Interface (CLI); CLI Scripting; Full-featured MIB Support; Web-based Management; Context-sensitive Help		
Security	MAC-based Port Security; Port-based Access Control with 802.1X; Guest/unauthenticated VLAN; Integrated Authentication Server (IAS); RADIUS VLAN Assignment; RADIUS Policy Assignment; Multi-Client Authentication per Port; MAC Authentication Bypass; DHCP Snooping; IP Source Guard; Dynamic ARP Inspection; Denial-of-Service Prevention; LDAP; Ingress MAC-based ACL; Egress MAC-based ACL; Ingress IPv4-based ACL; Egress IPv4-based ACL; Time-based ACL; VLAN-based ACL; Ingress VLAN-based ACL; Egress VLAN-based ACL; ACL Flow-based Limiting; Access to Management restricted by VLAN; Device Security Indication; Audit Trail; CLI Logging; HTTPS Certificate Management; Restricted Management Access; Appropriate Use Banner; Configurable Password Policy; Configurable Number of Login Attempts; SNMP Logging; Multiple Privilege Levels; Local User Management; Remote Authentication via RADIUS; User Account Locking		
Time Synchronization	PTPv2 Transparent Clock two-step; PTPv2 Boundary Clock; Buffered Real Time Clock; SNTP Client; SNTP Server		
Industrial Profiles	EtherNet/IP Protocol; IEC61850 Protocol (MMS Server, Switch Model); ModbusTCP; PROFINET IO Protocol		
Miscellaneous	PoE (802.3af); PoE+ (802.3at); PoE+ Manual Power Management; PoE Fast Startup; Manual Cable Crossing; Port Power Down		
Routing	IP/UDP Helper; Full Wire-Speed Routing; Port-based Router Interfaces; VLAN-based Router Interfaces; Loopback Interface; ICMP Filter; irected Broadcasts; OSPFv2; RIP v1/v2; ICMP Router Discovery (IRDP); Equal Cost Multiple Path (ECMP); Static Unicast Routing; Proxy ARP; Static Route Tracking		
Multicast Routing	DVMRP; IGMP v1/v2/v3; IGMP Proxy (Multicast Routing); PIM-DM (RFC3973); PIM-SM / SSM (RFC4601)		
Approvals			
Safety of Industrial Control Equipment	EN 62368-1, cUL61010-1, cUL 61010-2-201		
Along Track and Onboard Train	EN 50155, EN 50121-4, EN 45545		

NOTE: All specifications must be determined from the user documentation. This information is subject to change without notice.

Full Gigabit OCTOPUS Configurations

Design

OS3-30 = Fast Ethernet and Gigabit Ethernet Ports
OS3-34 = Fast Ethernet and Gigabit Ethernet Ports with PoE+
OS3-40 = Gigabit Ethernet Ports
OS3-44 = Gigabit Ethernet Ports with PoE+

Total Number of PoE+ Ports

00 = no PoE+ Ports
08 = 8 PoE+ Ports
16 = 16 PoE+ Ports
24 = 24 PoE+ Ports

Fast Ethernet PoE+ Ports

00 = no Fast Ethernet PoE+ Ports
08 = 8 Fast Ethernet PoE+ Ports
16 = 16 Fast Ethernet PoE+ Ports

Gigabit Ethernet PoE+ Ports

00 = no Gigabit Ethernet PoE+ Ports
08 = 8 Gigabit Ethernet PoE+ Ports
16 = 16 Gigabit Ethernet PoE+ Ports
24 = 24 Gigabit Ethernet PoE+ Ports

Fast Ethernet Ports

00 = no Fast Ethernet Ports
08 = 8 Fast Ethernet Ports
16 = 16 Fast Ethernet Ports

Gigabit Ethernet Ports

08 = 8 Gigabit Ethernet Ports
16 = 16 Gigabit Ethernet Ports
24 = 24 Gigabit Ethernet Ports

10 Gigabit Ethernet Ports

00 = no 10 Gigabit Ethernet Ports

Typ 1 Uplink Port

T6 = M12 X-coded
R6 = M12 X-coded with bypass relay

Typ 2 Uplink Port

(see Type 1 Uplink Port)

Temperature Range

T = -40 °C to +70 °C

Power Supply

BB = 2 x 24 V DC (16,8 to 30 V DC)
N9 = 1 x 72/110 V DC (50,4 V to 138 V DC)
HH = 2 x 36/48 V DC (25,2 to 60 V DC)
M9 = 1 x 110/120/220/230 V AC (88 to 265 V AC)
QQ = 2 x 24/36/48 V DC (16,8 to 60 V DC)
PP = 2 x 47 to 57 V (PoE) / 2 x 53 to 57 V (PoE+)

Approvals

Z9 = CE, FCC, EN 61131, EN 62368-1
S9 = CE, FCC, EN 61131, EN 62368-1, EN 50121-4, EN 50155, EN 45545
Y9 = CE, FCC, EN 61131, EN 6368-1, cUL 61010

Software Packages

99 = Reserved
UR = Unicast Routing
MR = Multicast Routing

OEM-Type

HH = Standard

Hardware Configuration

S = Standard

Software Configuration

E = Reserved
P = Profinet I/O
I = Ethernet/IP
B = BDEW

Software Version

2A = HiOS Layer 2 Advanced
3A = HiOS Layer 3 Advanced

Software Release

XX.X = Current Software Release