



8+12 Managed Gigabit SFP Ethernet Switch

PRELIMINARY

High SFP Port Count Industrial Ethernet Switch

RLH managed industrial switches are engineered to provide reliable network performance in demanding environments. The 8+12 Managed Gigabit SFP switch provides 8 copper Gigabit Ethernet ports and 12 fiber Gigabit Ethernet SFP ports for maximum connectivity in a compact form factor. A comprehensive set of management features provide a wide array of configuration and monitoring options required for various industrial applications.

This environmentally hardened, layer 3 Ethernet switch may be DIN rail or wall mounted, and is engineered to meet the demands of networking, utility and automation environments.

Features

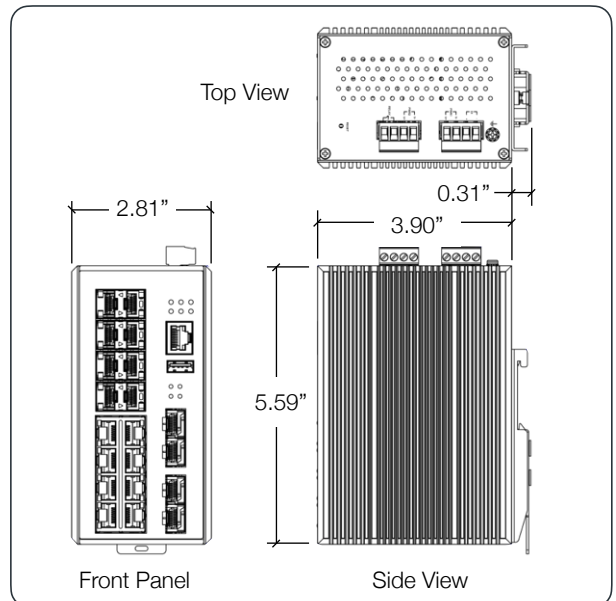
- Hardened design has a wide operating temperature range -40°F to +167°F (-40°C to +75°C)
- 8 ports - 10/100/1000Base-T(X) Ethernet
- 12 ports - 100/1000Base-(FX SFP slots)
- Supports Jumbo Frames
- Auto MDI/MDI-X
- Store-and-forward switching architecture
- Rugged IP30 housing
- 12~48VDC redundant power inputs with built-in alarm relay
- Overload and reverse polarity protection
- DIN rail & wall mountable

Management

- Layer 3 switch
- Static Routing
- Configuration via Web, CLI command, Telnet, SNMP & SSH
- Supports SNMPv3
- Supports IEEE 802.1q VLANs



8+12 Managed Gigabit SFP Ethernet Switch



Dimensions





Specifications

Switch Characteristics

Data Process	Store & Forward
Standards	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3z 1000Base-X Gigabit Fiber IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)

Processing Type	Store and Forward
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Flow Control	IEEE 802.3x flow control, back pressure flow control
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Network Management

Management	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, USB configuration backup/restore, Power lost warning, relay trigger
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Security	Port-based/Single/Multi 802.1X, ACL(Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
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L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMP snooping v2/v3, MLD snooping v1/v2, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, G.8032 v1/v2
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L3 Switching	DHCP option82, static routes
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QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
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Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
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Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
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Configuration	HTTP, HTTPS, Telnet, SSH, CLI, TFTP, SNMP v3
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System Diagnostics	Dual Image Protection, PING, PING6
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SNMP MIBs & RFC Standards	<p>RFC 2674 VLAN MIB</p> <p>IEEE-802.1Q bridge MIB 2008</p> <p>RFC 2819 RMON (group 1, 2, 3, and 9)</p> <p>RFC 1213 MIB II</p> <p>RFC 1215 TRAPS</p> <p>RFC 4188 bridge</p> <p>RFC 4292 IP forwarding table</p> <p>RFC 4293 management information base for the Internet Protocol (IP)</p> <p>RFC 5519 multicast group membership discovery</p> <p>RFC 4668 RADIUS auth. client</p> <p>RFC 4670 RADIUS accounting</p> <p>RFC 3635 Ethernet-like</p> <p>RFC 2863 interface group MIB using SMI v2</p> <p>RFC 3636 802.3 MAU</p> <p>RFC 4133 entity MIB v3</p> <p>RFC 3411 SNMP management frameworks</p> <p>RFC 3414 user-based security model for SNMPv3</p> <p>RFC 3415 view-based access control model for SNMP</p> <p>RFC 2613 SMON – PortCopy</p> <p>IEEE 802.1 MSTP</p> <p>IEEE 802.1AB LLDP-MIB (LLDP MIB included in a clause of the STD)</p> <p>IEEE 802.3ad (LACP MIB included in a clause of the STD)</p> <p>IEEE 802.1X (PAE MIB included in a clause of the STD)</p> <p>TIA 1057 LLDP-MED (MIB is part of the STD)</p> <p>Private MIB support</p>
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Switch Properties

Switching Fabric (Back-Plane)	40Gbps
Priority Queues	8
Max. Number of VLANs	4095
VLAN ID Range	VID 1 to 4095
Memory Buffer	4Mbits
Jumbo Frame	9.6Kbytes
MAC Table Size	8K
IGMP Group	1024
Transfer Rate	<p>14,880pps for Ethernet port</p> <p>148,800pps for Fast Ethernet port</p> <p>1,488,000pps for Gigabit Ethernet port</p>
Interface	
RJ45 Ports	<p>8*10/100/1000 Base-T(X)</p> <p>Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X</p>
Fiber Port	12*100/1000Base-(F)X SFP slots
Wavelength	Depends on SFP modules
LED Indicators	<p>System: Power 1, Power 2, Status, Master, Ring</p> <p>Ethernet ports: Speed/Link/Active</p> <p>SFP: Link/Active</p>
RS232 Serial Console	1 - RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
Configuration Backup	1 - USB 2.0 host (type-A) for configuration backup/restore
Relay Contact	24 VDC, 1A resistive
DI	1 - Digital Input (DI): State 0: -30~8VDC / State 1: 10~30VDC, Max. input current: 8mA



Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 4-pair UTP/STP Cat.5/5E cable; EIA/TIA-568 100-ohm (100m)
Optical Cable	Multi-mode cable - 50/125um or 62.5/125um, Single-mode cable - 9/125um or 10/125um
Power Requirements	
Input Voltage	Dual 12-48VDC redundant power inputs
Power Connection	2 ea. removable 4-contact terminal blocks
Overload Current Protection	Slow-Blow Fuse
Reverse Polarity Protection	Built in
System Power Consumption	Max. 19W full loading
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions (W x H x D)	71.5 x 142 x 99 mm (2.81 x 5.59 x 3.9 inch)
Weight	Unit weight: 1.444 kg (3.18 lbs.), Shipping weight: 1.784 kg (3.93 lbs.)
Mounting	DIN-Rail Mounting, Wall Mounting
Environmental	
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory	
EMI	FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A
EMS	CE EN55035/EN61000-6-2: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
Free Fall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Safety	CE, FCC Class A, UL 61010-1 and UL 61010-2-201, File Number: E544369, RoHS and REACH compliant
Compliance	NEMA TS2 (ITS)
MTBF (Telcordia SR-332, Issue 3, GB, 25°C)	481,511 hrs.
Warranty	Limited 5 years Visit www.fiberopticlink.com for warranty details