IES-3164GP-LA

ORing WEB-site

Industrial 20-port managed Ethernet switch with 16x10/100Base-T(X) and 4x100/1000Base-(F)X， SFP socket

Features

- World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 30ms over 250 units of connection)
- O-Chain allow multiple redundant network rings
- Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- MSTP/RSTP/STP (IEEE 802.1s/w/D) supports
- Supports IPV6 new internet protocol version
- Supports Auto Negotiation Speed
- Support Modbus TCP protocol
- Provided HTTPS/SSH protocol to enhance network security
- IGMP v2/v3 (IGMP snooping for support) filtering multicast traffic
- Supports SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Supports ACL, TACACS+ and 802.1x User Authentication for security
- Port Trunking for easy of bandwidth management
- Event notification through Syslog server / client, Email and SNMP trap
- RMON for traffic monitoring
- Support LLDP protocol
- Rigid IP-30 housing design
- DIN-Rail mounting enabled
- Web-based, Telnet and Console (CLI) configuration

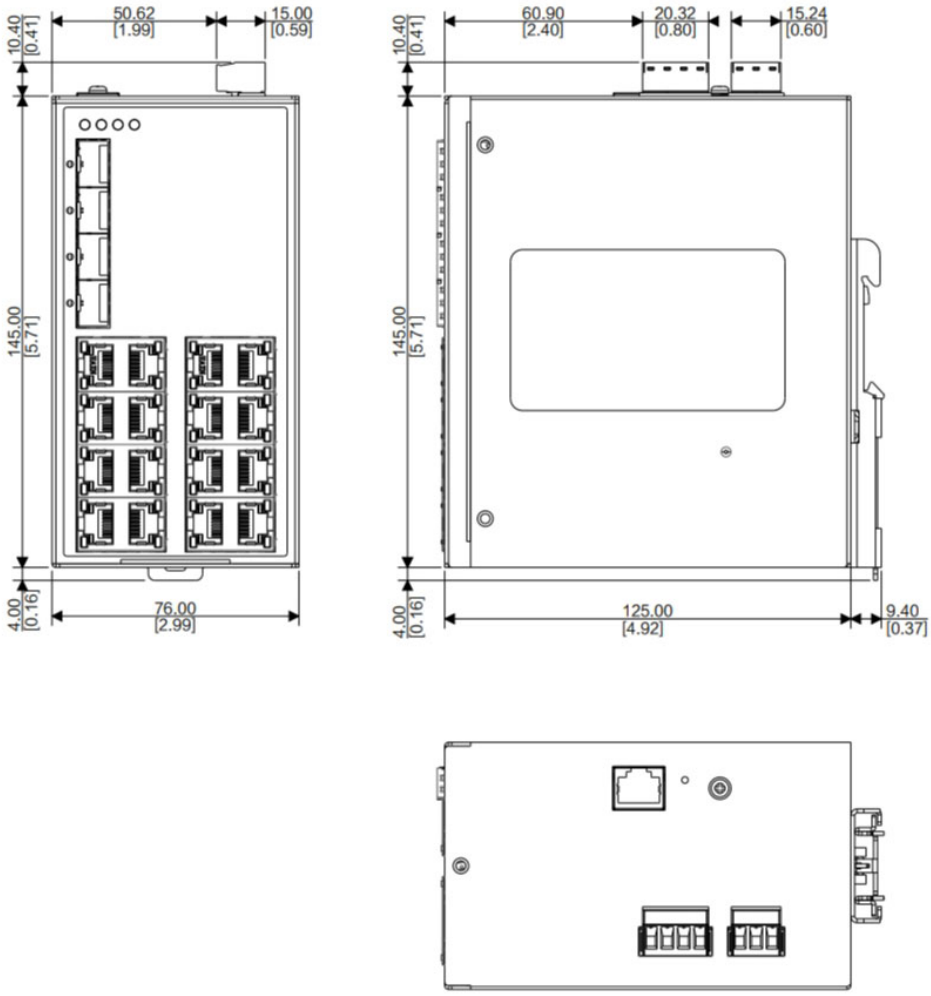
O-Ring | O-Chain | Redundant PWR | -40~75°C Temperature | IPv6 Ready | RoHS | CE | FC

Introduction

IES-3164GP-LA is managed Redundant Ring Ethernet switch with 16x10/100Base-T(X) ports and 4x100/1000Base-X，SFP socket. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 30ms over 250 units of connection), O-Chain, MRP and MSTP/RSTP/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. O-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, O-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology. In addition, the wide operating temperature range from -40 to 75°C can satisfy most of operating environment. Therefore, the switch is one of the most reliable choices for highly-managed Ethernet application.

- **O-Ring:** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 30 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **O-Chain:** O-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, O-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.
- **MRP: Media Redundancy Protocol** (**MRP**) is a data network protocol standardized by the IEC 62439-2. It allows rings of Ethernet switches to overcome any single failure with recovery time much faster than achievable with Spanning Tree Protocol.
- **Modbus TCP:** This is a Modbus variant used for communications over TCP/IP networks.

Dimensions



Specifications

ORing Switch Model	IES-3164GP-LA
Physical Ports	
10/100Base-T(X) Ports in RJ45 Auto MDI/MDIX	**16**
100/1000Base-(F)X, SFP socket	**4**
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8K
Packet Buffer Size	4.1Mbits

Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 10 µs Switching bandwidth: 11.2Gbps Max. Number of Available VLANs: 4096 VLAN ID Range: VID 1 to 4095 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	HTTPS/SSH enhance network security TACACS+ centralized authentication, authorization, and accounting for network devices RADIUS client forwards user authentication requests to a RADIUS server Access Management controls access to organizational resources IP source guard prevents IP spoofing Port based network access control (802.1x) Port security limit control the number of MAC addresses on a port VLAN (802.1Q) to segregate and secure network traffic SNMP V1/V2c/V3 manages and collects data from network devices. RMON enables remote monitoring and analysis of network traffic and performance. MIB organizes and stores data for managing network devices
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP/GARP supported MVR (Multicast VLAN Registration) supported Q-in-Q supported IGMP v2/v3 Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP client synchronizes the system clock with an NTP server NTP server/client for synchronizes the system clock DHCP Server/Client/Relay/Option-82 supports Port Trunk/LACP supports Port mirror for monitoring Modbus TCP enables device communication over TCP/IP networks
Network Redundancy	O-Ring O-Chain MRP MSTP/RSTP/STP ORing fast recovery
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED Indicators	
Power Indicator (PWR)	Green: Power LED x 2
Ring Master Indicator (R.M.)	Green: Indicates that the system is operating in O-Ring Master mode
O-Ring Indicator (Ring)	Green: Indicates that the system operating in O-Ring mode Green Blinking: Indicates that the Ring is broken.
10/100Base-T(X) RJ45 Port Indicator	Green for Link/Act indicator: On for link-up, Off for link-down, Blinking for act. Green for Speed indicator: On for 100Mbps, Off for 10Mbps
100/1000Base-(F)X SFP	Green for Link/Act indicator: On for link-up, Off for link-down, Blinking for act.
Fault Contact	
Relay	Relay output (NC/NO) to carry capacity of 1A at 24VDC
Reset Function	
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default
Power	
Redundant Input Power	Dual DC inputs, 12~48VDC on 4-pin terminal block
Power Consumption (Typ.)	10Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present (not working)
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	76 (W) x 125 (D) x 145 (H)mm 2.992 (W) x 4.921 (D) x 5.709 (H) inch

Weight (g)	1073 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 75°C (-40 to 167°F)
Operating Humidity	5% to 95% non-condensing
Regulatory Approvals	
EMC	CE EMC (EN 55035, EN 55032), FCC Part 15 B
EMI	EN 55032, EN 61000-6-4, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A
EMS	EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8(PFMF), IEC/EN 61000-4-11 (DIP))
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN 62368-1
Warranty	5 years

Ordering Information

Available Model	Model Name	Description
	IES-3164GP-LA	Industrial 20-port managed Ethernet switch with 16x10/100Base-T(X) ports and 4x100/1000Base-(F)X， SFP socket

Packing List
- IES-3164GP-LA (DIN-Rail Kit included) x 1
- ORing Tool CD Card x 1
- Quick Installation Guide x 1
- Console Cable x 1

Optional Accessories
- SDR/NDR Series DIN-Rail power supply