IES-3164GP-LA

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 < 10ms 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 Auto Negotiation Speed
- Support PTP Client (Precision Time Protocol) clock synchronization
- Support Modbus/TCP protocol
- IGMP v2/v3 (IGMP snooping for support) filtering multicast traffic
- Port Trunking for easy of bandwidth management
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- RMON for traffic monitoring
- Support LLDP protocol
- Port lock to prevent access from unauthorized MAC address
- Rigid IP-40 housing design
- DIN-Rail and wall mounting enabled
- Multiple notification for warning of unexpected event
- Web-based, Telnet and Console (CLI) configuration

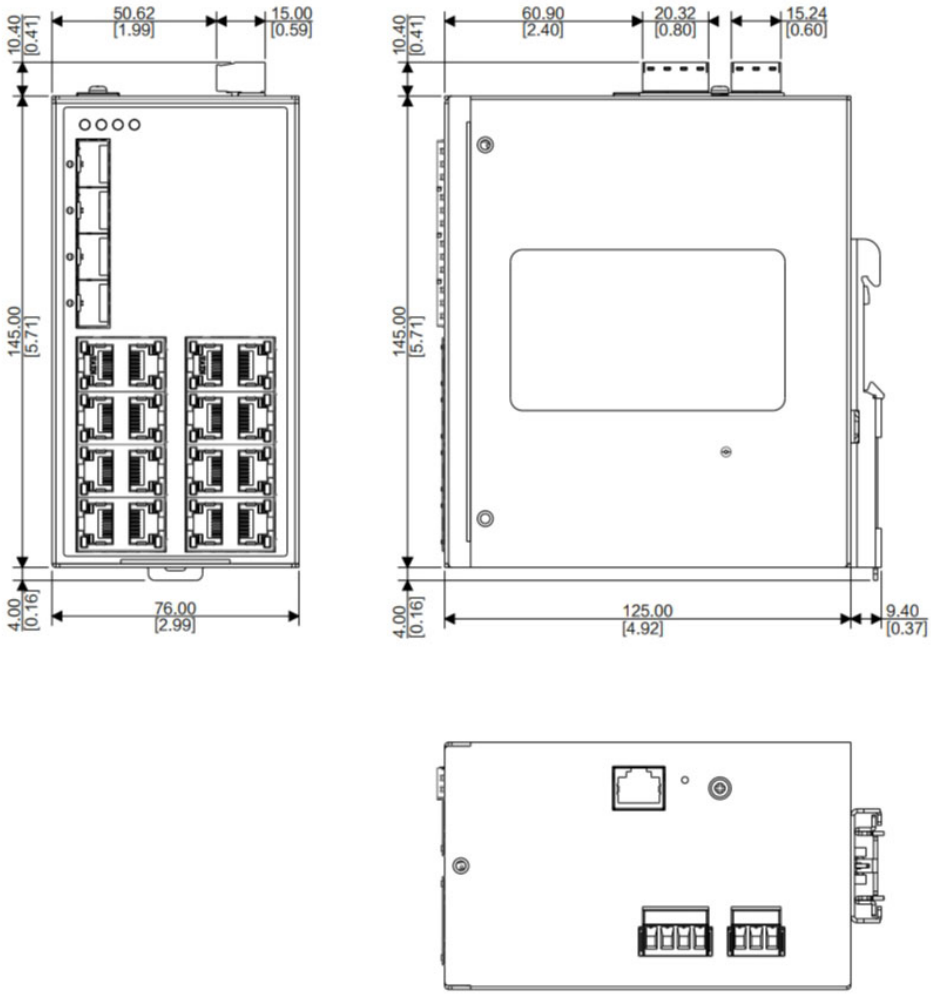
O-Ring | O-Chain | Redundant PWR | -40~75°C Temperature | IPv6 Ready | RoHS | CE | FC

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 < 10ms 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. All function of IES-3164GP-LA can be managed centralized and convenient by a powerful windows utility — Open-Vision. 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 choice for highly-managed Ethernet application.

- **O-Ring:** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 10 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 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	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic ACL SNMP V1/V2c/V3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support Modbus TCP
Network Redundancy	O-Ring O-Chain MRP MSTP/RSTP/STP
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 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
Physical Characteristic	
Enclosure	IP-40
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 x 1
- DIN-Rail Kit x 1
- Wall-mount Kit x 2
- ORing Tool CD Card x 1
- Quick Installation Guide x 1
- Console Cable x 1

Optional Accessories
- Open-Vision M500: Powerful Network Management Windows Utility Suit, 500 IP devices
- SDR/NDR Series DIN-Rail power supply