

# IGPS-3164GP-LA



O-Ring WEB-site

## ➤ Industrial 20-port managed Gigabit PoE Ethernet switch with 16x10/100/1000Base-T(X) P.S.E. 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)
- 16 ports P.S.E. fully compliant with IEEE802.3at standard, provide up to 30 Watts per port
- Provide PoE power on delay function, users can define delay time for PoE power supply
- Supports Auto Negotiation Speed
- 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-30 housing design
- DIN-Rail mounting enabled
- Multiple notification for warning of unexpected event
- Web-based, Telnet and Console (CLI) configuration
- Support LLDP Protocol

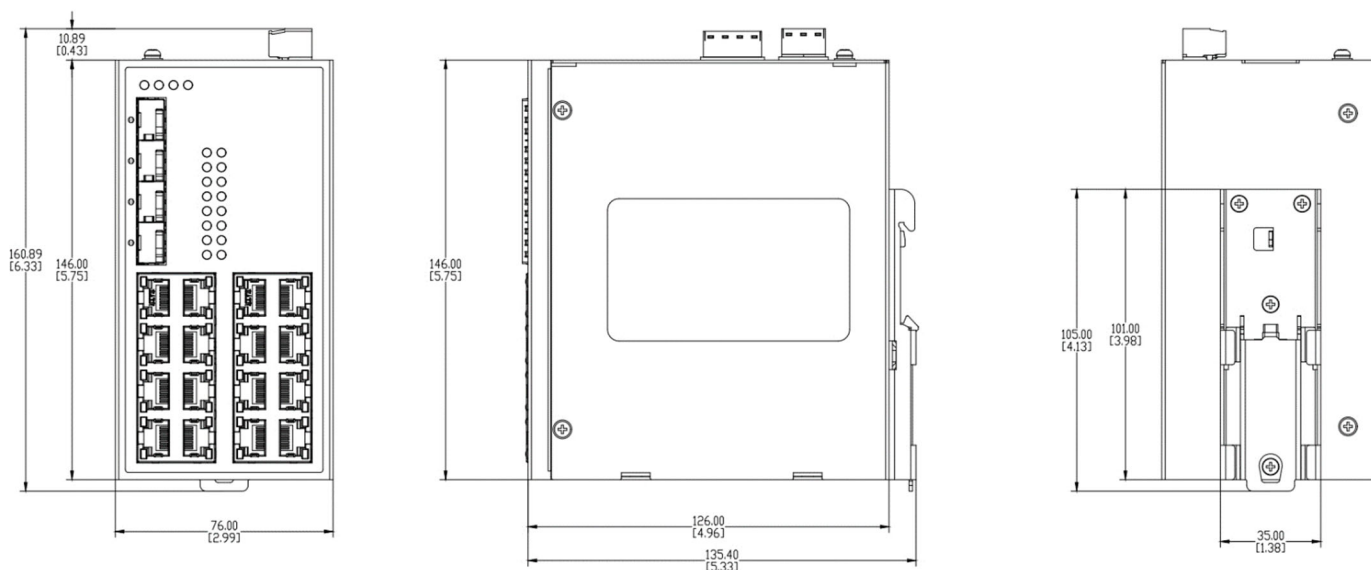


### Introduction

IGPS-3164GP-LA is managed redundant ring Gigabit PoE Ethernet switch with 16x10/100/1000Base-T(X) ports with 30Watts PoE (P.S.E.) function and 4x100/1000Base-(F)X SFP sockets. 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. Another 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. IGPS-3164GP-LA also supports Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each IGPS-3164GP-LA switch had 16X10/100/1000Base-T(X) 30Watts P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (switch or hub for instance) that will provide power in a PoE setup. IGPS-3164GP-LA supports DDM (Digital Diagnostic Monitoring) function, which can monitor instantly the status of electronic voltage, current and temperature. In addition, the wide operating temperature range from -40 to 75°C can satisfy most of operating environment. Therefore, these switches are one of the most reliable choices for highly-managed and Fiber Ethernet application with PoE function.

- **O-Ring:** O-Ring is O-Ring'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   | IGPS-3164GP-LA   |
|--|--|
| <b>Physical Ports</b>  |  |
| 10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX with P.S.E. | 16   |
| 100/1000Base-(F)X SFP Sockets                                | 4  |
| <b>Technology</b>  |  |
| Ethernet Standards   | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX and 100Base-FX<br>IEEE 802.3z for 1000Base-X<br>IEEE 802.3ab for 1000Base-T<br>IEEE 802.3x for Flow control<br>IEEE 802.3ad for LACP (Link Aggregation Control Protocol)<br>IEEE 802.1D for STP (Spanning Tree Protocol)<br>IEEE 802.1p for COS (Class of Service)<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol)<br>IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol)<br>IEEE 802.1x for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)<br>IEEE 802.3at PoE specification (up to 30 Watts per port for P.S.E.)<br>IEEE 802.3af PoE specification (up to 15.4 Watts per port for P.S.E.) |
| MAC Table  | 8K   |
| Packet Buffer Size   | 4.1Mbits   |
| Priority Queues  | 8  |
| Processing   | Store-and-Forward  |
| Jumbo Frame  | Up to 10K bytes  |
| Switch Properties  | Switching latency: 10 us<br>Switching bandwidth: 40Gbps<br>Max. Number of Available VLANs: 4096<br>VLAN ID Range: VID 1 to 4095<br>IGMP multicast groups: 1024<br>Port rate limiting: User Define  |
| Security Features  | Enable/disable ports, MAC based port security<br>Port based network access control (802.1x)<br>VLAN (802.1Q) to segregate and secure network traffic<br>Radius centralized password management   |

|  |  |
|--|--|
|  | SNMP V1/V2c/V3 encrypted authentication and access security  |
| Software Features                        | STP/RSTP/MSTP (IEEE 802.1D/w/s)<br>Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units<br>TOS/Diffserv supported<br>Quality of Service (802.1p) for real-time traffic<br>VLAN (802.1Q) with VLAN tagging and GVRP supported<br>IGMP Snooping for multicast filtering<br>Port configuration, status, statistics, monitoring, security<br>SNTP for synchronizing of clocks over network<br>DHCP Server / Client support<br>Port Trunk support<br>Modbus TCP |
| Network Redundancy                       | O-Ring<br>O-Chain<br>MRP<br>MSTP/RSTP/STP  |
| RS-232 Serial Console Port               | RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1  |
| <b>LED Indicators</b>                    |  |
| Power Indicator (PWR1/2)                 | 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.<br>Green Blinking: Indicates that the Ring is broken.   |
| 10/100/1000Base-T(X) RJ45 Port Indicator | Top Green for Link/Act indicator: On for link-up, Off for link-down, Blinking for Act.<br>Bottom Green for Speed indicator: On for 1Gbps, Off for 10/100Mbps   |
| 100/1000Base-(F)X SFP Port Indicator     | Green for Link/Act indicator: Green for link-up, Off for link-down, Blinking for Act.  |
| PoE Indicator                            | Green for PoE indicator: On for PoE enabled, Off for PoE disabled  |
| <b>Relay</b>                             |  |
| Relay                                    | Relay output to carry capacity of 1A at 24VDC  |
| <b>Reset Function</b>                    |  |
| Reset Button                             | < 5 sec: System reboot, > 5 sec: Factory default   |
| <b>Power</b>                             |  |
| Redundant Input Power                    | Dual DC inputs, 48~57VDC on 4-pin terminal block   |
| Power Consumption (Typ.)                 | 20 Watts (PoE output power not included)   |
| PoE Total Power Budget                   | 150 Watts Max.   |
| Overload Current Protection              | Present  |
| Reverse Polarity Protection              | Presented (not working)  |
| <b>Physical Characteristic</b>           |  |
| Enclosure                                | IP-30 Aluminum   |
| Dimension (W x D x H)                    | 76 (W) x 126 (D) x 146 (H)mm<br>2.99 (W) x 4.96 (D) x 5.75 (H) inch  |
| Weight (g)                               | 1180 g (N.W) / 1560 g (G.W)  |
| <b>Environmental</b>                     |  |
| 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   |
| <b>Regulatory Approvals</b>              |  |
| EMC                                      | CE EMC (EN 55035, EN 55032), FCC Part 15 B   |
| EMI                                      | EN 55032, 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  |
|---|----------------|--|
|   | IGPS-3164GP-LA | Industrial 20-port managed Gigabit PoE Ethernet switch with 16x10/100/1000Base-T(X) P.S.E. and 4x100/1000Base-(F)X, SFP socket   |
| <b>Packing List</b> <ul style="list-style-type: none"> <li>IGPS-3164GP-LA (DIN-Rail Kit included) x 1</li> <li>ORing Tool CD Card x 1</li> <li>Quick Installation Guide x 1</li> <li>Console Cable x 1</li> </ul> |                | <b>Optional Accessories</b> <ul style="list-style-type: none"> <li>SFP100 series: 100Mbps SFP optical transceiver</li> <li>SFP 1G series: 1Gbps SFP optical transceiver</li> <li>SDR/NDR Series DIN-Rail power supply</li> </ul> |