

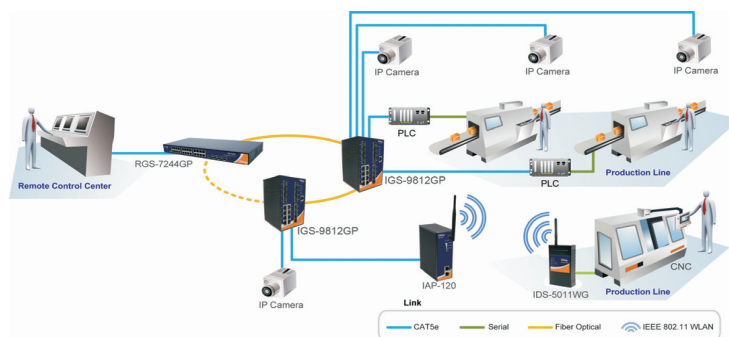


Quick Installation Guide

Introduction

IGS-9812GP is managed redundant ring Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X SFP ports. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 30ms over 250 units of connection) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. And support wide operating temperature from -40 °C to 70 °C. **IGS-9812GP** can also be managed centralized and convenient by Open-Vision, Except the Web-based interface, Telnet and console (CLI) configuration are also supported. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet application.

- **O-Ring** : O-Ring is ORing's proprietary redundant ring technology, with recovery time of less than 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.
- **Open-Ring** : Open-Ring is an enhanced redundant technology that makes ORing's switches compatible with other vendor's proprietary redundant ring technologies. It enables ORing's switches to form a single ring with other vendor's switch. In cases where the ring is setup using proprietary technology, ORing offers a compatibility service where ORing can make its switches compatible with your particular network requirements.
- **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-recover, swiftness flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.
- **IP-based Bandwidth Management** : The switch provide advanced IP-based bandwidth management which can limit the maximum bandwidth for each IP device. User can configure IP camera and NVR with more bandwidth and limit other device bandwidth.
- **Application-Based QoS** : The switch also support application-based QoS. Application-based QoS can set highest priority for data stream according to TCP/UDP port number.
- **Device Binding Function** : ORing special Device Binding function can only permit allowed IP address with MAC address to access the network. Hacker cannot access the IP surveillance network without permission. It can avoid hacker from stealing video privacy data and attacking IP camera, NVR and controllers.
- **Advanced DOS/DDOS Auto Prevention** : The switch also provided advanced DOS/DDOS auto prevention. If there is any IP flow become big in short time, the switch will lock the source IP address for certain time to prevent the attack. It's hardware based prevention so it can prevent DOS/DDOS attack immediately and completely.
- **IEEE 1588 Technology** : The IEEE 1588 technology can fulfill precision time synchronization requirements for protection and control applications.
- **Modbus TCP** : This is a Modbus variant used for communications over TCP/IP networks.
- **IEEE 802.3az Energy-Efficient Ethernet** : This is a set of enhancements to the twisted-pair and backplane Ethernet family of networking standards that will allow for less power consumption during periods of low data activity. The intention was to reduce power consumption by 50% or more.



Specifications

ORing Switch Model	IGS-9812GP
Physical Ports	
10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
100/1000Base-X with SFP port	12
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T, IEEE 802.3u for 100Base-T(X) and 100Base-FX, IEEE 802.3z for 1000Base-X, IEEE 802.3ab for 1000Base-T, IEEE 802.3x for Flow control, IEEE 802.3ad for LACP (Link Aggregation Control 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
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switch latency: 7 us Switch bandwidth: 40Gbps Max. Number of Available VLANs: 256 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Define
Jumbo Frame	Up to 9.6K Bytes
Security Features	IP Police security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security HTTPS / SSH enhance network security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 20ms 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 IP based bandwidth management Application based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Client/Server SMTP Client Modbus TCP
Network Redundancy	O-Ring, Open-Ring, O-Chain, MRP, MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 115200bps, 8, N, 1
LED Indicators	
Power Indicator	Green: Power LED x2
R.M. Indicator	Green: Flashing to indicate system operated in O-Ring Master mode
O-Ring indicator	Green: Indicate system operated in O-Ring mode Green Blinking : Indicates that the Ring is broken.
Fault Indicator	Amber: Indicate unexpected event occurred
10/100/1000Base-T(X) RJ45 Port Indicator	Green for 1000Mbps Link/Act indicator. Amber for Duplex indicator
100/1000Base-X Fiber Port Indicator	Green for port Link/Act.
Fault Contact	
Relay	Relay output to carry capacity of 1A at 24 VDC
Power	
Redundant Input power	Dual DC Input 12-48VDC on 6-pin terminal block
Power consumption(Typ.)	10 Watts
Overload current protection	Present
Reverse polarity protection	Present on terminal block
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	96.4(W)x108.5(D)x154(H) mm (3.8x4.27x6.06 inch.)
Weight (g)	1420 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing

Industrial Managed Gigabit Switch

Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years

Features

- Supports O-Ring (recovery time < 20ms over 250 units of connection), MSTP/RSTP/STP (IEEE 802.1s/w/D) for Ethernet Redundancy
- Open-Ring support the other vendor's ring technology in open architecture
- O-Chain allow multiple redundant network rings
- Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- Support IEEE 1588v2 clock Synchronization
- Supports IPV6 new internet protocol version
- Support Modbus TCP protocol
- Provided HTTPS/SSH protocol to enhance network security
- Support IEEE 802.3az Energy-Efficient Ethernet technology
- Supports SMTP client
- Supports IP based bandwidth management
- Supports application based QoS management
- Supports Device Binding security function
- Supports DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Supports SNMP v1/v2c/v3, RMON and 802.1Q VLAN Network Management
- Support ACL, 802.1x User Authentication for security
- Supports 9.6K Bytes Jumbo Frame
- Multiple notification for warning of unexpected event
- Windows utility (Open-Vision) support centralized management and configurable by Web-based interface, Telnet and Console(CLI)
- Support LLDP Protocol
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled



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Quick Installation Guide

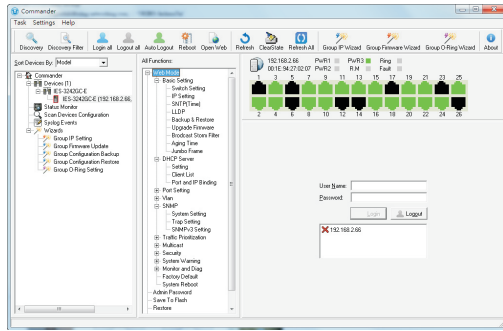
IGS-9812GP

Industrial Managed Gigabit Switch

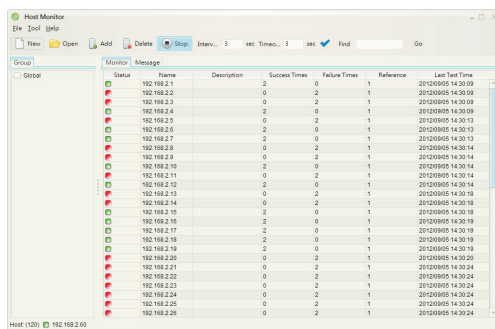
Open-Vision

ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network

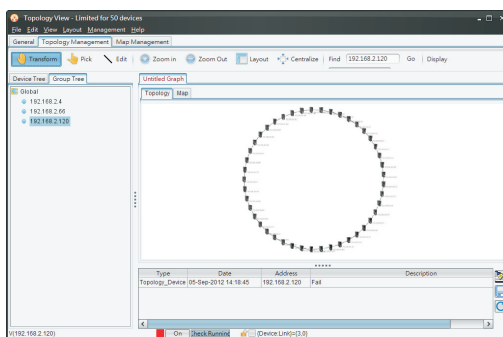
Commander



Host Monitor



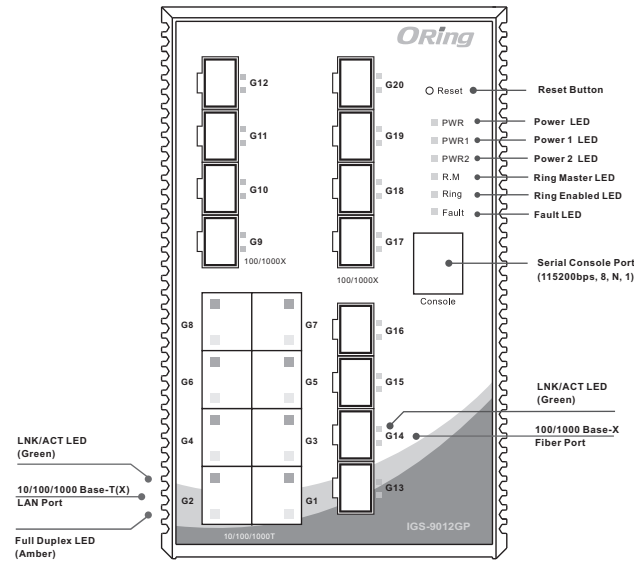
Topology View



Packing list

Model name	Front Panel	Model Description	Accessory
IGS-9812GP	A	Industrial 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket	<ul style="list-style-type: none"> ⊙ X1, ⊙ X8, ⊙ X12, ⊙ X6, ⊙ X1, ⊙ X1, ⊙ X2, ⊙ X1, ⊙ X1

Front Panel

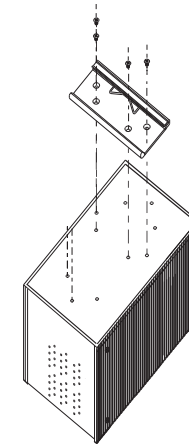


Accessory

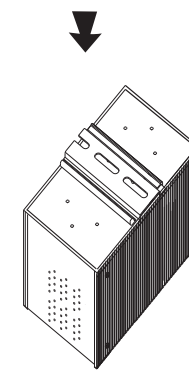
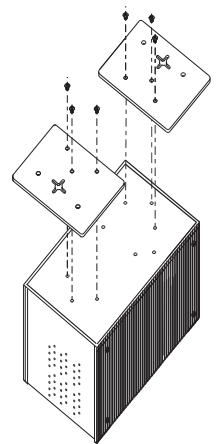
- ① 6-Pin Terminal block
- ② Dust Cover (RJ-45)
- ③ Dust Cover (SFP)
- ④ Flat Screw (M3 X5)
- ⑤ CD
- ⑥ QIG
- ⑦ Wall-mounted kit
- ⑧ Console Cable
- ⑨ 88mm DIN-Rail kit

Installation

DIN-Rail Install Step



Wall-mounted Install Step



Power Connection Guide

