IGS-P9812GP Series

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Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket

Features

- Designed for power substation / Railway application and fully compliant with the requirement of IEC 61850-3 and IEEE 1613
- Leading EN50155-compliant Ethernet switch for rolling stock application
- Support **O-Ring** (recovery time < 30ms over 250 units of connection) and MSTP(RSTP/STP compatible) 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***NOTE (Media Redundancy Protocol) function
- Support IEEE 1588v2 clock Synchronization
- Support IPV6 new internet protocol version
- Support Modbus TCP protocol
- Support IEEE 802.3az **Energy-Efficient Ethernet** technology
- Provided HTTPS/SSH protocol to enhance network security
- Support SMTP client & NTP server
- Support IP-based bandwidth management
- Support application-based QoS management
- Support Device Binding security function
- Support DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Support SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Support 9.6K Bytes Jumbo Frame
- Support **DBU-01** backup unit device to quickly backup/restore configuration
- Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (**Open-Vision**) configuration
- Support LLDP Protocol
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

Introduction

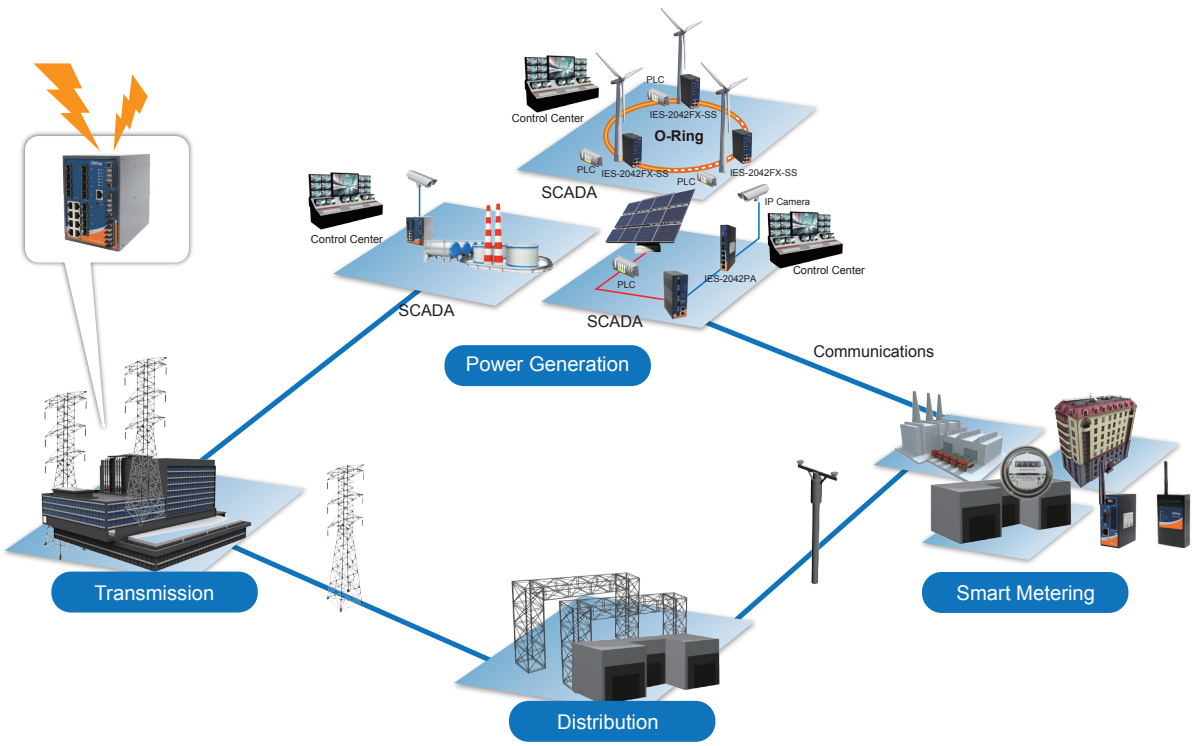
IGS-P9812GP is IEC 61850-3 managed redundant ring Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X SFP ports. The switch is designed for power substation application and rolling stock application, fully compliant with the requirement of IEC 61850-3 and IEEE 1613. And the switch designed for the toughest and fully compliant with EN50155 requirement. 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 oC to 75 oC. IGS-P9812GP can also be managed centralized and convenient by Open-Vision, Except the Web-based interface, Telnet and console (CLI) configuration. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet power substation and rolling stock 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

***NOTE: This function is available by request only**

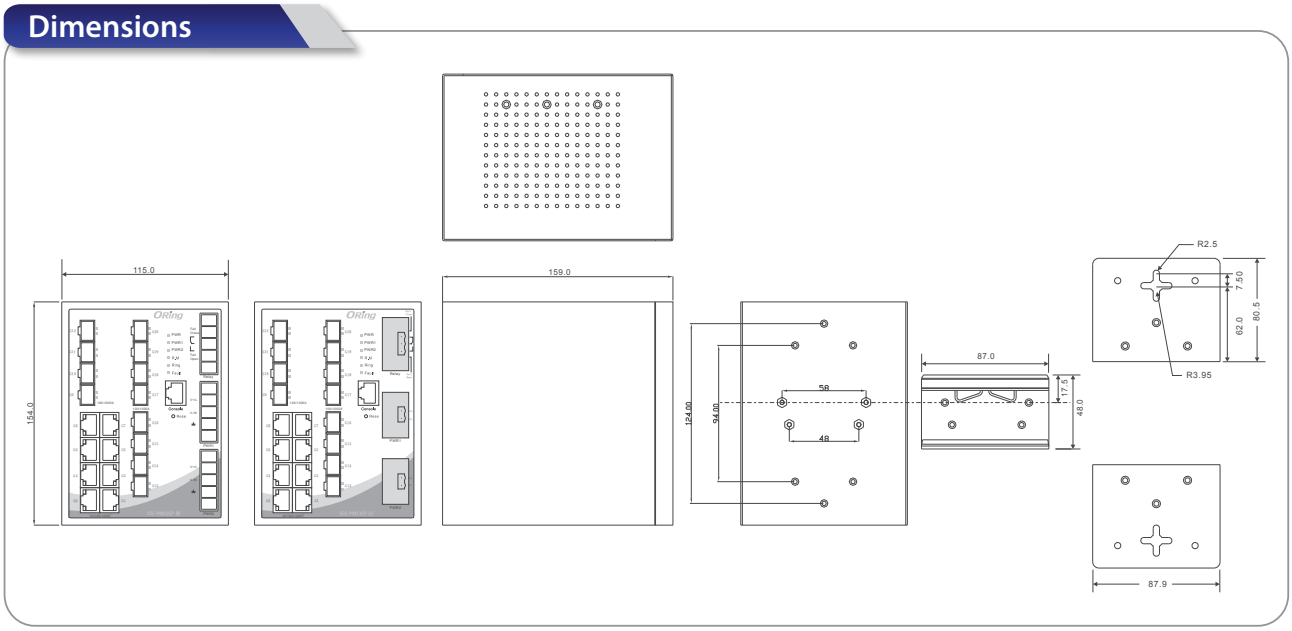
ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.

- **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-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.
- **MRP*NOTE** : 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.
- **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.



*NOTE: This function is available by request only

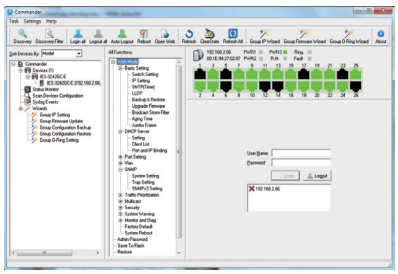
Dimensions



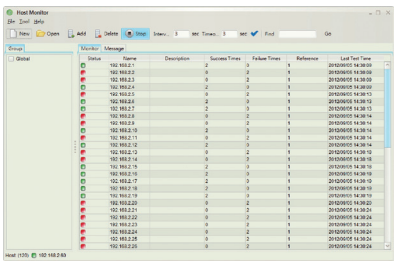
(Unit=mm)

Open-Vision

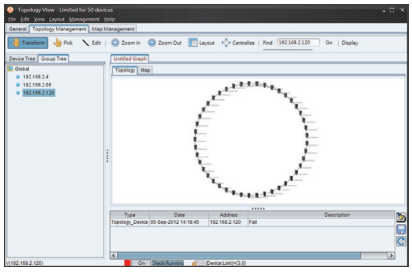
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



Host Monitor



Topology View

Specifications

ORing Switch Model	IGS-P9812GP-LV	IGS-P9812GP-HV
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-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X 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	Switching latency: 7 us Switching bandwidth: 40Gbps Max. Number of Available VLANs: 4095 VLAN ID Range: VID 1 to 4094 IGMP multicast groups: 256 for each VLAN Port rate limiting: User Define Https / SSH enhance network security	
Jumbo frame	Up to 9.6K Bytes	
Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) 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 30ms 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 NTP Server SNMP v1/v2c/v3, MIB, RMON IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP NTP server	
Network Redundancy	O-Ring Open-Ring O-Chain MRP***NOTE** Fast Recovery MSTP (RSTP/STP compatible)	
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 3	
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.	
Fault Indicator (Fault)	Amber : Indicate unexpected event occurred	
10/100/1000Base-T(X) RJ45 Port Indicator	Green for Link/Act. Dual color LED for speed indicator: Green for 1000Mbps, Amber for 100Mbps, Off-light for 10Mbps	
100/1000Base-X SFP Port Indicator	Green for port Link/Act.	
Fault contact		
Relay	Relay output to carry capacity of 1A at 24VDC	
Power		
Redundant Input power	Dual DC inputs. 12~48VDC on 6-pin terminal block	Dual power inputs. 85~264VAC / 88~373VDC on 6-pin terminal block
Power consumption (Typ.)	22 Watts	24 Watts
Overload current protection	Present	
Reverse Polarity Protection	Present	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	115 (W) x 159 (D) x 154 (H)mm (4.53 x 6.26 x 6.06 inch)	
Weight (g)	1520 g	1870 g
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 75°C (-40 to 167°F)	

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Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
Power Automation	IEC 61850-3, IEEE 1613
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
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

Ordering Information

IGS-P9 A BB CC - DD

Code Definition	10/100/1000Base-T(X) Port Number	100/1000Base-(F)X SFP Port Number	Additional Port Type	Voltage Type
Option	**- 8:** 8 ports	**- 12:** 12 ports	**-GP:** Gigabit SFP ports	**-LV:** 12~48VDC power inputs model **-HV:** 85~264VAC / 88~373VDC power inputs model

	Model Name	Description
Available Model	IGS-P9812GP-LV	Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket, low-voltage power inputs
	IGS-P9812GP-HV_US	Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket, high-voltage power inputs, US power cord
	IGS-P9812GP-HV_UK	Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket, high-voltage power inputs, UK power cord
	IGS-P9812GP-HV_EU	Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket, high-voltage power inputs, EU power cord
	IGS-P9812GP-HV_JP	Industrial IEC 61850-3 20-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X, SFP socket, high-voltage power inputs, JP power cord

Packing List

- IGS-P9812GP x 1
- DIN-Rail Kit x 1
- ORing Tool CD x 1
- Wall-mount Kit x 2
- Quick Installation Guide x 1
- Console Cable x 1

Optional Accessories

- Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices
- DR-45 series : 45 Watts DIN-Rail power supply
- DR-75 series : 75 Watts DIN-Rail power supply
- DR-120 series : 120 Watts DIN-Rail power supply
- SFP100 series : 100Mbps SFP optical transceiver
- SFP 1G series : 1Gbps SFP optical transceiver
- DBU-01 : backup unit device

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
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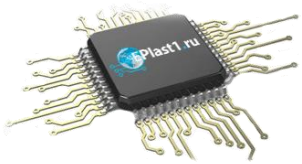
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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