

RGS-9168GCP Series

Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo ports and 8x100/1000Base-X, SFP socket

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Features

- Support O-Ring (recovery time < 30ms) and MSTP(RSTP/STP compatible) for Ethernet Redundancy</p>
- O-Chain allow multiple redundant network rings
- Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- 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 and 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 and 802.1x User Authentication for security
- Support 10K Bytes Jumbo Frame
- SFP socket support DDM function
- > Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (Open-Vision) configuration
- Support LLDP Protocol
- > 19 inches rack mountable design













Introduction

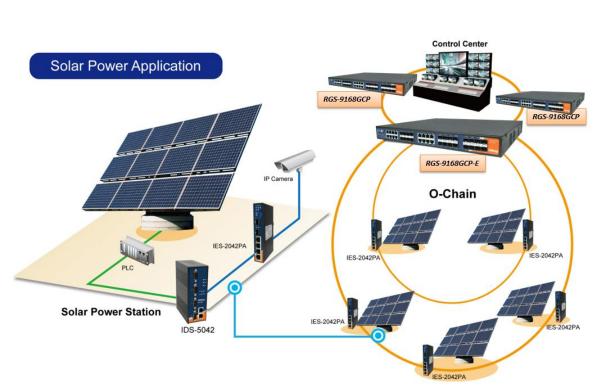
RGS-9168GCP series are Gigabit managed redundant ring Ethernet switch with 16xGigabit combo ports and 8x100/1000Base-X, SFP socket. These switches support Ethernet Redundancy protocol, **O-Ring** (recovery time < 30ms over 250 units of connection) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. And RGS-9168GCP series support wide operating temperature from -40 °C to 75 °C. RGS-9168GCP series 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 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.
- <u>O-Chain</u>: 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

Optic Fiber

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.
- 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.
- 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.



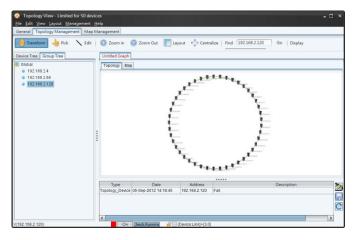
Network connection

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.



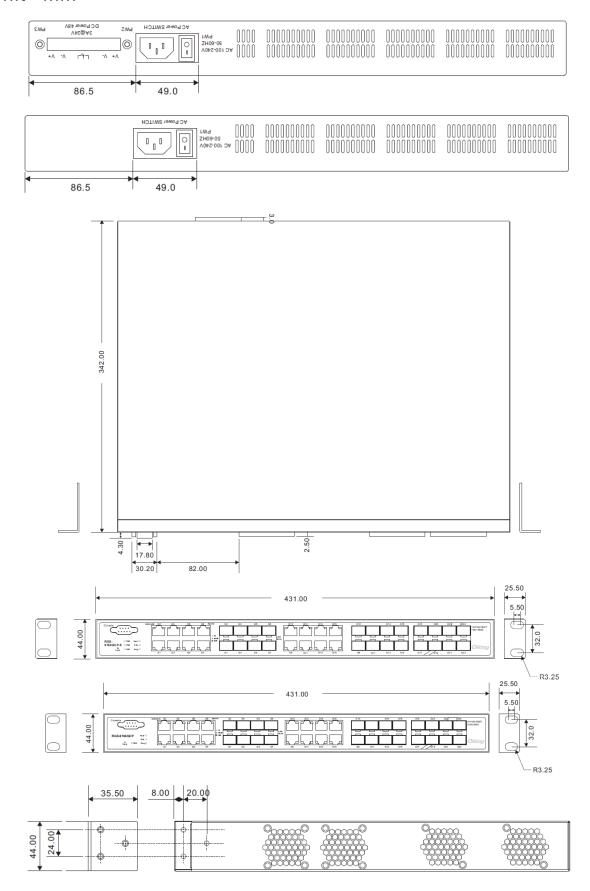
Commander Host Monitor



Topology View

Dimension

Unit =mm



Specifications

ORing Switch Model	RGS-9168GCP	RGS-9168GCP-E	
Physical Ports			
Gigabit Combo port with			
10/100/1000Base-T(X) and		16	
100/1000Base-X SFP ports			
100/1000Base-X with SFP port			
·	8		
Technology			
	IEEE 802.3 for 10Base-T		
	IEEE 802.3u for 100Base-TX		
	IEEE 802.3ab for 1000Base-T		
	IEEE 802.z for 1000Base-X		
	IEEE 802.3x for Flow control	3t \	
Ethernet Standards	IEEE 802.3ad for LACP (Link Aggregation Control F	Protocol)	
	IEEE 802.1p for COS (Class of Service)		
	IEEE 802.1Q for VLAN Tagging	col)	
	IEEE 802.1w for RSTP (Rapid Spanning Tree Proto		
	IEEE 802.1s for MSTP (Multiple Spanning Tree Prof IEEE 802.1x for Authentication	locoi)	
	IEEE 802.1A for LLDP (Link Layer Discovery Proto	ocal)	
MAC Table	8k	ocoly	
Priority Queues	8		
Processing	Store-and-Forward		
Frocessing	Switching latency: 7 us		
	Switching latericy: 7 us Switching bandwidth: 128Gbps		
	Max. Number of Available VLANs: 4095		
Switch Properties	VLAN ID Range: VID 1 to 4094		
	IGMP multicast groups: 256 for each VLAN		
	Port rate limiting: User Define		
Jumbo frame	Up to 10K Bytes		
James Traine	Device Binding security feature		
	Enable/disable ports, MAC based port security		
	Port based network access control (802.1x)		
	Single 802.1x and Multiple 802.1x		
	MAC-based authentication		
	MAC address limit		
Security Features	VLAN (802.1Q) to segregate and secure network	traffic	
	Radius centralized password management		
	SNMPv3 encrypted authentication and access secu	rity	
	Https / SSH enhance network security		
	Web and CLI authentication and authorization		
	IP source guard		
	IEEE 802.1D Bridge, auto MAC address learning/ag	ging and MAC address (static)	
	Multiple Registration Protocol (MRP)		
	MSTP (RSTP/STP compatible)		
	Redundant Ring (O-Ring) with recovery time less t	han 30ms over 250 units	
	TOS/Diffserv supported		
	Quality of Service (802.1p) for real-time traffic		
	VLAN (802.1Q) with VLAN tagging		
	IGMP v2/v3 Snooping		
Software Features	IP-based bandwidth management		
	Application-based QoS management		
	DOS/DDOS auto prevention	_	
	Port configuration, status, statistics, monitoring, so	ecurity	
	DHCP Server/Client		
	DHCP Relay		
	Modbus TCP SMTP Client		
	NTP server		
Network Redundancy	O-Ring O-Chain		
	MRP		
	PHM		

	MSTP (RSTP/STP compatible)		
RS-232 Serial Console Port	RS-232 in DB-9 connector with console cable. 115200bps, 8, N, 1		
LED indicators			
Power Indicator (PWR)	Green: Power indicator	Green LED x 3 : Power-1/2/3 indicator	
Ring Master Indicator (R.M.)	Green: Indicates that the system is operating in O-R	Ling 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 indicator. Dual color LED for speed indicator ~ Green for 1000Mbps / Amber for 100Mbps / Off-light for 10Mbps		
1000Base-X SFP Port Indicator	Green for port Link/Act.		
Fault contact			
Relay	None	Relay output to carry capacity of 1A at 24VDC	
Power			
Power Input	100 ~ 240VAC with power socket	100 ~ 240VAC with power socket and dual 48VDC (3 ~ 72VDC) at 6-pin terminal block	
Power consumption (Typ.)	28.2W	28.2W	
Overload current protection	NOT Present	Present with terminal block	
Reverse Polarity Protection	Present	Present	
Physical Characteristic			
Enclosure	19 inches rack mountable		
Dimension (W x D x H)	431 (W) x 342 (D) x 44 (H)mm (16.97 x 13.46 x 1.73 inch)		
Weight (g)	4117 g	4437 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			
EMI	FCC Part 15, CISPR (EN55022) class A		
	EN61000-4-2 (ESD)		
	EN61000-4-3 (RS),		
FMC	EN61000-4-4 (EFT),		
EMS	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



Code Definition	Gigabit Combo Port Number	Gigabit SFP Port Number	Additional Port Type	Additional Type
Option	- 16: 16 ports	- 8: 8 ports	-GCP: Gigabit Combo ports and Gigabit SFP ports	-E: enhanced model with dual DC inputs and Relay output

	Model Name	Description
	RGS-9168GCP US	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
RGS-91680	KGG-3100GGI _GG	ports and 8x100/1000Base-X, SFP socket, US power cord
	RGS-9168GCP_UK	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
		ports and 8x100/1000Base-X, SFP socket, UK power cord
	RGS-9168GCP EU	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
	NGG 3100GG1 _EG	ports and 8x100/1000Base-X, SFP socket, EU power cord
Available	RGS-9168GCP JP	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
Model RGS	1.00 0100001 _01	ports and 8x100/1000Base-X, SFP socket, JP power cord
	RGS-9168GCP-E_US	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
		ports and 8x100/1000Base-X, SFP socket, enhanced version, US power cord
	RGS-9168GCP-E UK	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
		ports and 8x100/1000Base-X, SFP socket, enhanced version, UK power cord
	RGS-9168GCP-E_EU	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
		ports and 8x100/1000Base-X, SFP socket, enhanced version, EU power cord
	RGS-9168GCP-E JP	Industrial 24-port rack mount managed Gigabit Ethernet switch with 16xGigabit combo
		ports and 8x100/1000Base-X, SFP socket, enhanced version, JP power cord

Packing List

- RGS-9168GCP / -E x 1
- ORing Tool CD x 1
- Quick Installation Guide x 1

- Rack-mount Kit x 1
- Power Cable x 1
- Console Cable x 1

Optional Accessories

- Open-Vision M500 : Powerful Network
 Management Windows Utility Suit, 500 IP devices
- DR-120-48 : 48V/120Watts DIN-Rail power
 supply (Only for -E)
- SFP100 series: 100Mbps SFP optical transceiver
- SFP1G series : 1GMbps SFP optical transceiver
- DR-75-48: 48V/75Watts DIN-Rail power supply
 (Only for -E)