Drawing Number: IES-A3 Series
Revision Date: 2016-05-20
Revision: v1.0

SWITCH C1D2/ATEX INDUSTRIAL

ORing

Quick Installation Guide

IES-A3162GC

Industrial C1D2/ATEX Managed Ethernet Switch

Introduction

IES-A3162GC is managed Redundant Ring Ethernet switch with 16x10/100Base-T(X) ports and 2xgigabit combo ports which is specifically designed for the C1D2/ATEX certified with hazardous locations requirement. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain, MRP and MSTP/RSTP:2004/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. Another Open-Ring technology is also supported which can applied for other vendor's proprietary ring. 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-A3162GC** can be managed centralized and convenient by a powerful windows utility : Open-Vision. In addition, the wide operating temperature range from -40 to 70°C can satisfy most of operating environment. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet in hazardous location application.

Features

- C1D2 and ATEX compliant for harsh industrial environments application
- World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- 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
- STP/RSTP:2004/MSTP supported
- Supports Ipv6 new internet protocol version
- Supports Auto Negotiation Speed
- Support PTP Client (Precision Time Protocol) clock synchronization
- Provided HTTPS/SSH protocol for enhance network
- IGMP v2/v3 (IGMP snooping for support) filtering multicast traffic
- Port Trunking for easy of bandwidth management
- SNMP V1/V2c/V3 support for secured network management
- RMON for traffic monitoring
- Support LLDP protocol
- Support TACACS+ and 802.1x User Authentication for security
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Port lock to prevent access from unauthorized MAC address
- Windows utility (Open-Vision) support centralized management and configurable by Web-based ,Telnet, Console, CLI
- Support two Gigabit combo ports
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

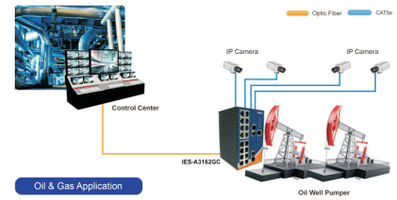
Specifications

ORing Switch Model	IES-A3162GC
Physical Ports	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	16
Gigabit combo Ports with 10/100/100Base-T(X) and 100/1000Base-X SFP port	2
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 802.3ad for LACP (Link Aggregation Control Protocol), IEEE 802.3x for Flow control, IEEE 802.1D for STP (Spanning Tree Protocol), IEEE 802.1p for COS (Class of service), IEEE 802.1Q for VLAN Tagging, IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol), IEEE 802.1s for MSTP (Rapid Spanning Tree Protocol), IEEE 802.1x for Authentication, IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switch latency: 9 us Switch bandwidth: 7.2Gbps Max. Number of Available VLANs: 4096 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 Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMPv3 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 MVR (Multicast VLAN Registration) support Modbus TCP
Network Redundancy	O-Ring, Open-Ring, O-RSTP, STP, RSTP:2004, MSTP
Network Redundancy	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
RS-232 Serial Console Port	RS-232in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1
LED indicators	
Power Indicator	Green: Power LED x3
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
Fault Indicator	Amber: Indicate unexpected event occurred
10/100 Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for Duplex/Collision
10/100/1000Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for 100Mbps 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.)	12 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)	1200 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
Regulatory approvals	
EMC	EN 55022, EN 55024(CE EMC), FCC, EN 61000-6-2, EN 61000-6-4,IEC 61000-3-2 ,IEC 61000-3-3
EMI	CISPR 22, EN 55011, FCC Part 15B 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(PFMF), EN61000-4-11(DIP)
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31 (IEC60068-2-32)
Vibration	IEC60068-2-6
Safety	EN60950-1, UL/ cUL class 1 division 2 Group A/B/C/D, ATEX class 1 Zone 2
Warranty	5 years

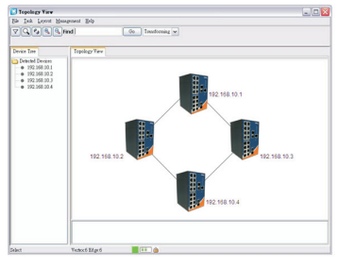
Open-Vision

Oring's switches are intelligent switches. Different form 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.

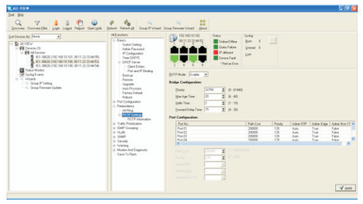
Network connection

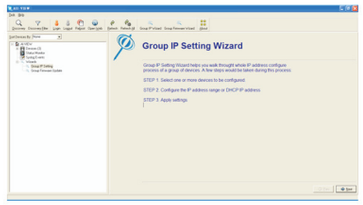


Topology View

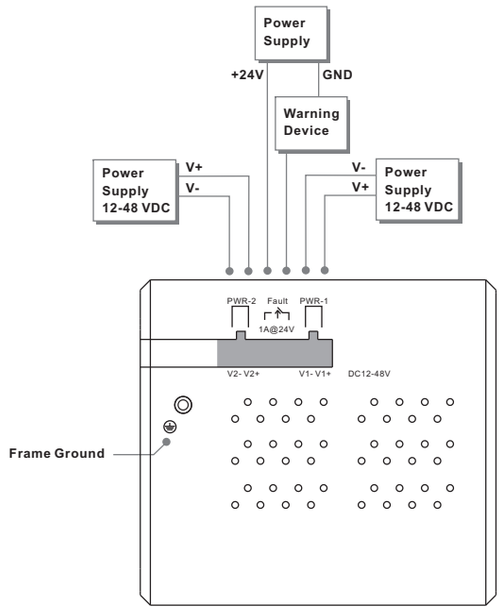


Monitoring and Configuration interface





Power Connection Guide



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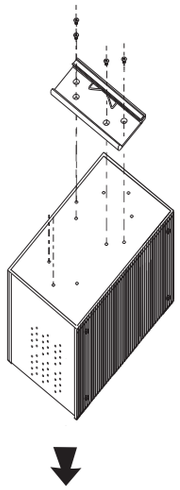
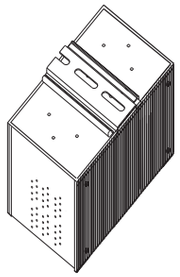
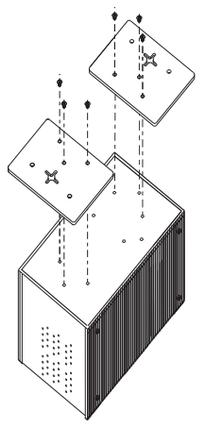
Installation

DIN-Rail Install Step

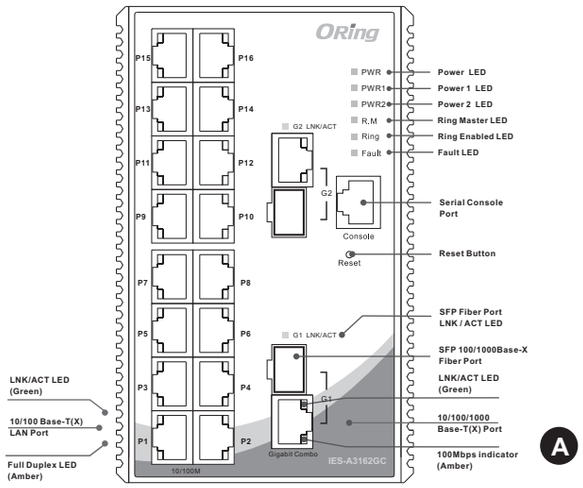




Wall-mountedl Install Step



Front Panel



Accessory

① 6-Pin Terminal block

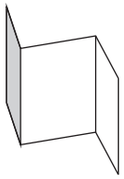
② Dust Cover (RJ-45)

③ Dust Cover (SFP)

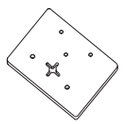
④ Flat Screw (M3 X5)

⑤ CD

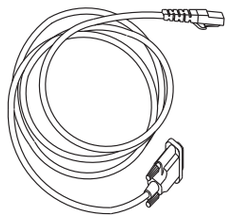
⑥ QIG



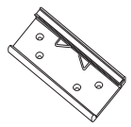
⑦ Wall-mounted kit



⑧ Console Cable



⑨ 88mm DIN-Rail kit



Packing list

Model name	Front Panel	Model Description	Accessory
IES-A3162GC	A	Industrial C1D2/ATEX 18-port managed Ethernet switch with 16x10/100Base-T(X) and 2xGigabit combo ports, SFP socket	①X 1, ②X 18, ③X 2, ④X 6, ⑤X 1, ⑥X 1, ⑦X 2, ⑧X 1, ⑨X 1

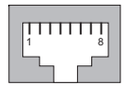
ORing
TEL: +886-2-2218-1066
FAX: +886-2-2218-1014
Website: www.oring-networking.com
E-mail: support@oring-networking.com
Address: 3F 542-2 Zhongzheng Road, Xindian District, New Taipei City 231 Taiwan

Communication Connections

10/100Base-T(X) Ethernet Port Connection

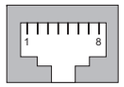
■ RJ45 (8-pin, MDI) Port Pinouts

Pin	Single
1	Tx+
2	Tx-
3	Rx+
6	Rx-



■ RJ45 (8-pin, MDI-X) Port Pinouts

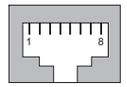
Pin	Single
1	Rx+
2	Rx-
3	Tx+
6	Tx-



1000Base-T Ethernet Port Connection

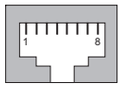
■ RJ45 (8-pin, MDI) Port Pinouts

Pin	MDI
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

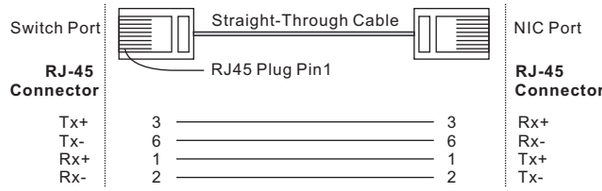


■ RJ45 (8-pin, MDI-X) Port Pinouts

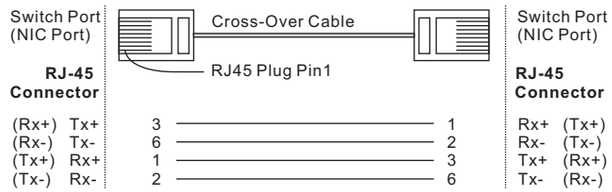
Pin	MDI-X
1	BI_DB+
2	BI_DB-
3	BI_DA+
4	BI_DD+
5	BI_DD-
6	BI_DA-
7	BI_DC+
8	BI_DC-



■ RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring



■ RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring



100/1000Base-X SFP Port Connection