IES-A3080 / IES-A3062 Series

ORing WEB-site

Industrial C1D2/ATEX 8-port managed Ethernet switch

Features

- World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10/30ms over 250 units of connection)
- O-Chain allow multiple redundant network rings
- Support standard IEC 62439-2 MRP*NOTE (Media Redundancy Protocol) function
- MSTP/RSTP/STP (IEEE 802.1s/w/D)
- Supports Auto Negotiation Speed
- Support PTP Client (Precision Time Protocol) clock synchronization
- 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
- Port lock to prevent access from unauthorized MAC address
- Windows utility (Open-Vision) supports centralized management and configurable by Web-based, Telnet, Console (CLI)
- Completely combination of 10/100Base-T(X), 100Base-FX, 1000Base-T, 1000Base-SX, and 1000Base-LX ports
- C1D2 and ATEX compliant for harsh industrial environments application
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled
- Multiple notifications for warning of an unexpected event
- Web-based, Telnet, Console (CLI), and Windows Utility (**Open-Vision**) configuration
- Support LLDP Protocol

O-Ring | O-Chain | Redundant PWR | -40~70°C Temperature | R6 READY | ROHS | Ex | c UL us LISTED | CE | FC

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

Introduction

IES-A3080 / IES-A3062 series are managed Redundant Ring Ethernet switches with 6x10/100Base-T(X) and 2x10/100Base-T(X), 100Base-FX, 1000Base-T, 1000Base-SX or 1000Base-LX 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 < 10/30ms over 250 units of connection), O-Chain, MRP*NOTE 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. 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. IES-A3080 / IES-A3062 series can be managed centralized and convenient by a powerful windows utility — Open-Vision. In addition, the wide operating temperature range from -40°C to 70°C can satisfy most of operating environment. Therefore, the switch is one of the most reliable choice for highly-managed Fiber Ethernet application.

- **O-Ring:** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 10/30 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.
  NOTE 1. Fast Ethernet ports supports less 10 milliseconds recovery time.
  NOTE 2. Gigabit Ethernet ports supports less 30 milliseconds recovery time.
- **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.

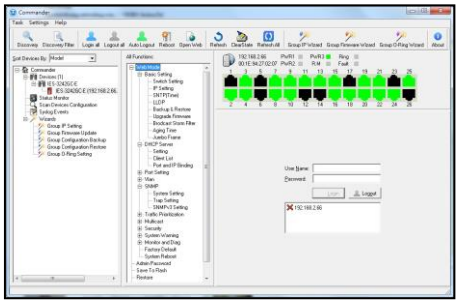
O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.

- **MRP: Media Redundancy Protocol** (**MRP**) *NOTE 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.

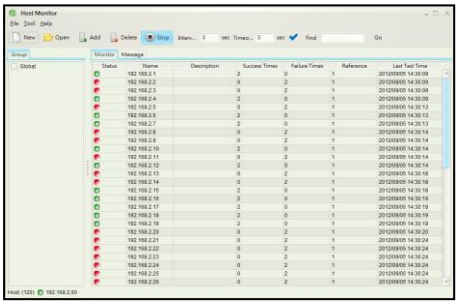
***NOTE: This function is available by request only**

Open-Vision

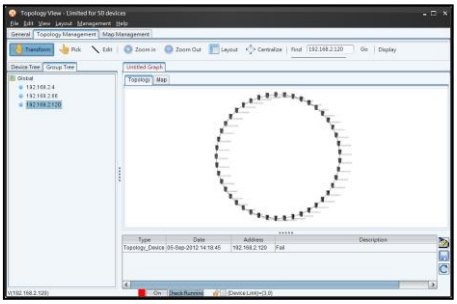
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows Utility (Open-Vision) for user to manage and monitor all industrial Ethernet switches on the industrial network.



Commander



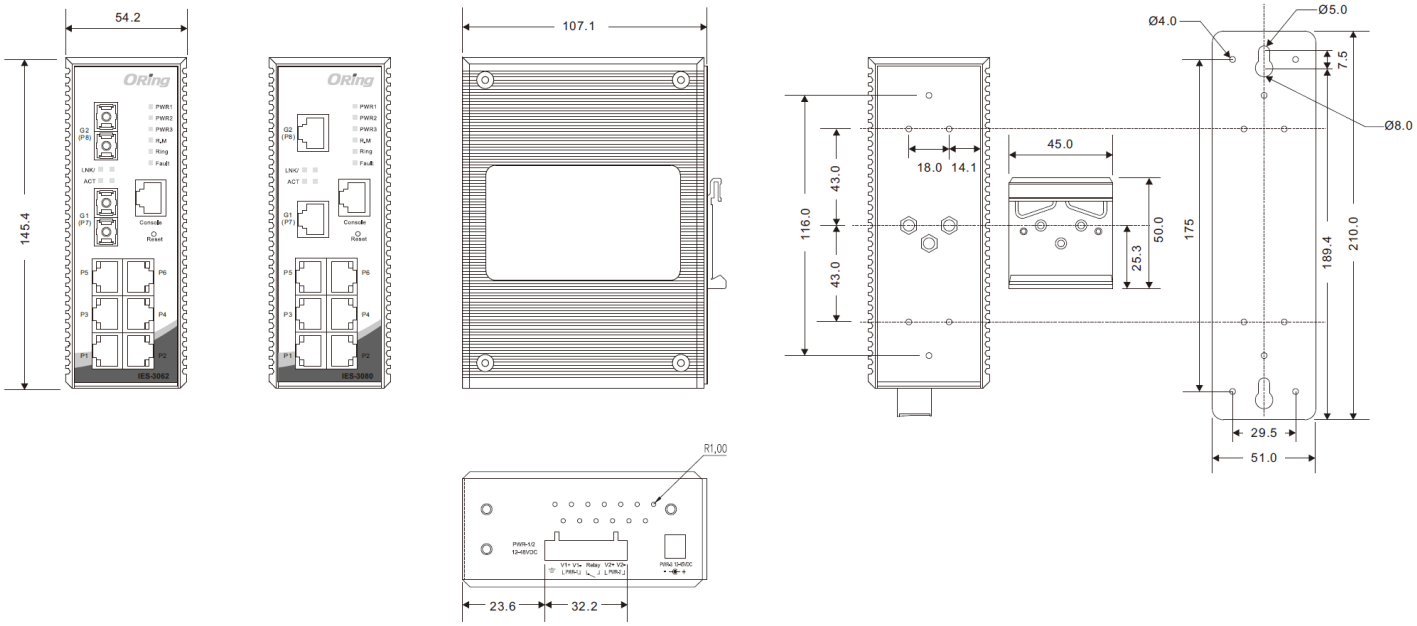
Host Monitor



Topology View

Dimensions

Unit = mm (Tolerance ±0.5mm)



Specifications

ORing Switch Model		IES-A3080	IES-A3062GT	IES-A3062FX -MM	IES-A3062FX-SS	IES-A3062GF -MM	IES-A3062GF-SS
Physical Ports							
10/100Base-T(X) Ports in RJ45 Auto MDI/MDIX		8	6	6	6	6	6
10/100/1000Basde-T(X) Ports in RJ45 Auto MDI/MDIX		-	2	-	-	-	-
Fiber Ports Specifications	Fiber Ports Number	-	-	2	2	2	2
	Fiber Ports Standard	-	-	100Base-FX	100Base-FX	1000Base-SX	1000Base-LX
	Fiber Mode	-	-	Multi-mode	Single-mode	Multi-mode	Single-mode
	Fiber Diameter (μm)	-	-	62.5/125 μm 50/125 μm	9/125 μm	62.5/125 μm 50/125 μm	9/125 μm
	Fiber Optical Connector	-	-	SC	SC	SC	SC
	Typical Distance (km)	-	-	2 km	30 km	0.55km	10 km
	Wavelength (nm)	-	-	1310 nm	1310 nm	850 nm	1310 nm
	Max. Output Optical Power (dBm)	-	-	-14 dBm	-8 dBm	-4 dBm	-3 dBm
	Min. Output Optical Power (dBm)	-	-	-23.5 dBm	-15 dBm	-9.5 dBm	-9.5 dBm
	Max. Input Optical Power (Saturation)	-	-	0 dBm	0 dBm	0 dBm	-3 dBm
	Min. Input Optical Power (Saturation)	-	-	-31 dBm	-34 dBm	-18 dBm	-20 dBm
	Link Budget (dB)	-	-	7.5 dBm	19 dBm	8.5 dBm	10.5 dBm

Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX 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 802.1D for STP (Spanning Tree 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
Packet Buffer Size	1Mbits
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 2.03 μs Switching bandwidth: IES-3080/IES-3062FX Series: 1.6Gbps IES-3062GT/IES-3062GF Series: 5.6Gbps Throughput (packet per second): IES-3080/IES-3062FX Series: 1.19Mpps@64Bytes packet IES-3062GT/IES-3062GF Series: 3.869Mpps@64Bytes packet Max. Number of Available VLANs: 4096 VLAN ID Range: VID 1 to 4095 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 SNMP V1/V2c/V3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10/30ms over 250 units **NOTE 1.** Fast Ethernet ports supports less 10 milliseconds recovery time. **NOTE 2**. Gigabit Ethernet ports supports less 30 milliseconds recovery time. 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 O-Chain MRP ***NOTE** MSTP/RSTP/STP
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 9600bps, 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
10/100Base-T(X) RJ45 Port Indicator	Green for Link/Act indicator: on for link-up, off for link-down, Blinking for act. Amber for Duplex/Collision indicator: on for full-duplex, off for half-duplex, blinking for half-duplex and collision occurred.
10/100/1000Base-T(X) Port Indicator	Green for port Link/Act. indicator: on for link-up, off for link-down, Blinking for act. Amber for 100Mbps indicator: on for 100Mbps, off for 10/1000Mbps
100Base-FX Port Indicator	Green for port Link/Act. indicator: on for link-up, off for link-down, Blinking for act. Amber for port link indicator: on for link-up, off for link-down.
1000Base-SX/LX Port Indicator	Green for port Link/Act. indicator: on for link-up, off for link-down, Blinking for act. Amber for port link indicator: on for link-up, off for link-down.
Reset Function	
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default
Power	
Redundant Input Power	Triple DC inputs: 12~48VDC on 7-pin terminal block 12~45VDC on power jack **(NOTE. power jack cannot use in C1D2/ATEX hazardous location application)**
Power Consumption (Typ.)	5 Watts 12-48VDC (0.6-0.15A) / 8 Watts 12-48VDC (0.9-0.2A) / 9 Watts 12-48VDC (0.9-0.22A) / 9 Watts 12-48VDC (0.9-0.2A) / 7 Watts 12-48VDC (0.8-0.2A) / 7 Watts 12-48VDC (0.9-0.22A)
Overload Current Protection	Present
Reverse Polarity Protection	Present on terminal block
Physical Characteristic	
Enclosure	IP-30 Aluminum
Dimension (W x D x H)	54.2 (W) x 107.1 (D) x 145.4 (H)mm 2.13 (W) x 4.22 (D) x 5.72 (H) inch
Weight (g)	710 g / 722 g / 735 g / 735 g / 740 g / 740 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	

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

EMC	CE EMC (EN 55024, 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 55024 (IEC/EN 61000-4-2 (ESD: Contact 4KV, Air 8KV), IEC/EN 61000-4-3 (RS: 3V), IEC/EN 61000-4-4 (EFT Power 0.5KV, Signal 0.5KV), IEC/EN 61000-4-5 (Surge: Power 0.5KV, RJ45 1KV), IEC/EN 61000-4-6 (CS: 3V), 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 60950-1, UL 508, UL/cUL Class 1 Division 2 Group A/B/C/D, ATEX Class 1 Zone 2					
MTBF	841,599 hrs.	798,350 hrs.	550,165 hrs.	479,542 hrs.	432,000 hrs.	503,318 hrs.
Warranty	5 years					

Ordering Information

IES-A3AA B CC-DD-EE

Code Definition	10/100Base-T(X) Port Number	Additional Port Number	Additional Port Type	Fiber Optical Mode	Fiber Optical Connector
Option	**- 08:** 08 ports **- 06:** 06 ports	**- 0:** 0 ports **- 2:** 2 ports	**-GT:** 10/100/1000Base-T(X) **-FX:** 100Base-FX **-GF:** 1000Base-SX/LX	**-MM:** Multi-mode **-SS:** Single-mode	**-SC:** SC Connector

	Model Name	Description
Available Model	IES-A3080	Industrial C1D2/ATEX 8-port managed Ethernet switch with 8x10/100Base-T(X)
	IES-A3062GT	Industrial C1D2/ATEX 8-port managed Ethernet switch with 6x10/100Base-T(X) and 2x10/100/1000Base-T(X)
	IES-A3062FX-MM-SC	Industrial C1D2/ATEX 8-port managed Ethernet switch with 6x10/100Base-T(X) and 2x100Base-FX, multi-mode, 2Km/1310nm, SC connector
	IES-A3062FX-SS-SC	Industrial C1D2/ATEX 8-port managed Ethernet switch with 6x10/100Base-T(X) and 2x100Base-FX, single-mode, 30Km/1310nm, SC connector
	IES-A3062GF-MM-SC	Industrial C1D2/ATEX 8-port managed Ethernet switch with 6x10/100Base-T(X) and 2x1000Base-SX, multi-mode, 550m/850nm, SC connector
	IES-A3062GF-SS-SC	Industrial C1D2/ATEX 8-port managed Ethernet switch with 6x10/100Base-T(X) and 2x1000Base-LX, single-mode, 10Km/1310nm, SC connector

Packing List

- IES-A3080/IES-A3062 Series x 1
- DIN-Rail Kit x 1
- Wall-mount Kit x 1
- ORing Tool CD x 1
- Quick Installation Guide x 1
- Console Cable x 1

Optional Accessories

- Open-Vision M500: Powerful Network Management Windows Utility Suit, 500 IP devices
- SDR/NDR Series DIN-Rail power supply

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ORing:

IES-A3062GT IES-A3062FX-SS-SC IES-A3062FX-MM-SC IES-A3080