IES-3082GC

ORing WEB-site

➤ *Industrial 10-port managed Ethernet switch with 8x10/100Base-T(X) and 2xGigabit combo ports, SFP socket*

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
- Support LLDP protocol
- 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
- Multiple notification for warning of unexpected event
- Web-based, Telnet, Console (CLI), and Windows Utility (**Open-Vision**) configuration
- Support LLDP Protocol

EN50155 · O-Ring · O-Chain · Redundant PWR · -40~75°C Temperature · R6 READY · ROHS · c UL us LISTED · CE · FC

*NOTE: This function is available by request only

Introduction

IES-3082GC is managed redundant ring Ethernet switch with 8x10/100Base-T(X) ports and 2xGigabit combo ports which is compliant with EN50155 request. The Ethernet switch is designed for industrial applications, such as rolling stock, vehicle, and railway applications. 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-3082GC supports DDM (Digital Diagnostic Monitoring) function, which can monitor instantly the status of electronic voltage, current and temperature. IES-3082GC also provided machine operating temperature detects function, which can monitor operating temperature every time. IES-3082GC provided hardware watchdog function, which can keep machine working all the time. All function of IES-3082GC can be managed centralized by a powerful windows utility — Open-Vision. In addition, the wide operating temperature range from -40 to 75°C can satisfy most of operating environment. 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 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 of industrial Ethernet switches on the industrial network.
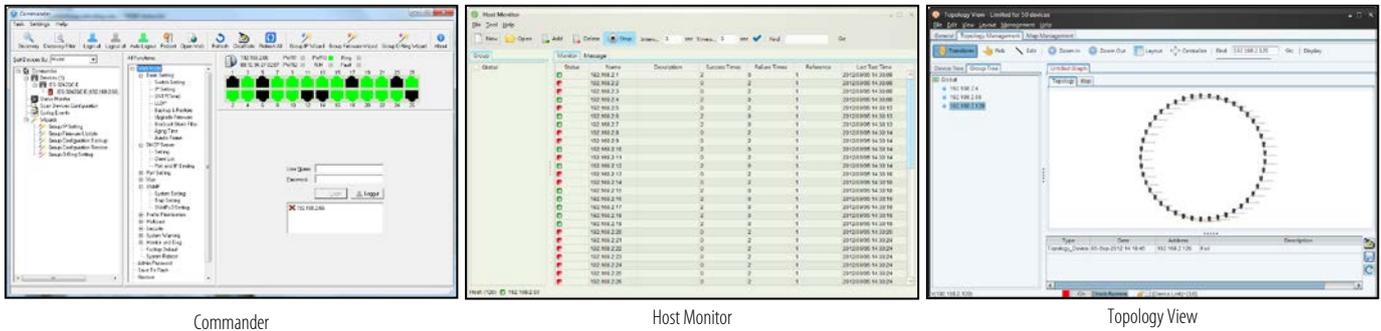

Commander

Host Monitor

Topology View

Dimensions

Unit = mm (Tolerance ± 0.5mm)
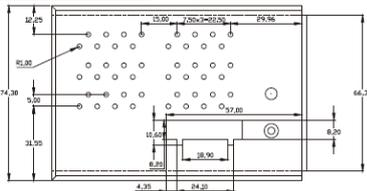
Specifications

ORing Switch Model	IES-3082GC
Physical Ports	
10/100Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
Gigabit Combo Ports With 10/100/1000Base-T(X) And 100/1000Basde-(F)X SFP Port	2
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: <2.5 µs Switching bandwidth: 5.6Gbps Throughput (packet per second): 4.166Mpps@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

*NOTE: This function is available by request only

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) RJ45 Port Indicator With Combo Port	Green for 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
100/1000Base-(F)X SFP Port Indicator With Combo Port	Green for Link/Act indicator: On for link-up, Off for link-down, Blinking for act.

Fault Contact

Relay	Relay output to carry capacity of 1A at 24VDC

Reset Function

Reset Button	< 5 sec: System reboot, > 5 sec: Factory default

Power

Redundant Input Power	Dual DC inputs, 12~48VDC on 6-pin terminal block
Power Consumption (Typ.)	10.8Watts, 12-48VDC/0.9A-0.2A
Overload Current Protection	Present
Reverse Polarity Protection	Present on terminal block

Physical Characteristic

Enclosure	IP-30 Aluminum
Dimension (W x D x H)	74.3 (W) x 107.5 (D) x 153.6 (H)mm 2.93 (W) x 4.2 (D) x 6.05 (H) inch
Weight (g)	1140 g

Environmental

Storage Temperature	–40 to 85ºC (–40 to 185ºF)
Operating Temperature	–40 to 75ºC (–40 to 167ºF)
Operating Humidity	5% to 95% Non-condensing

Regulatory Approvals

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)) – Waiting for EMC test results
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN 62368-1 (LVD), UL 61010-1, UL 61010-2-201
MTBF	366,529.1948 hrs.
Warranty	5 years

Ordering Information

IES-3AA B CC
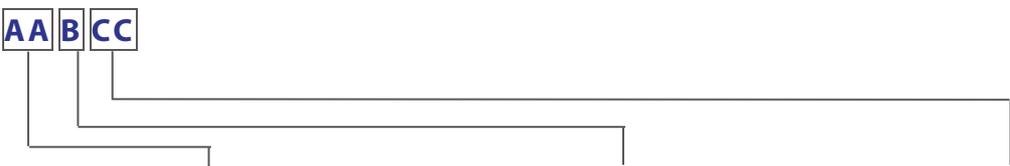
Code Definition	10/100Base-T(X) Port Number	Additional Port Number	Additional Port Type
Option	**- 08:** 08 ports	**- 2:** 2 ports	**-GC:** Gigabit combo with SFP ports

Available Model	Model Name	Description
	IES-3082GC	Industrial 10-port managed Ethernet switch with 8x10/100Base-T(X) and 2xGigabit combo ports, SFP socket

Packing List
- IES-3082GCx 1
- DIN-Rail Kit x 1
- Wall-mount Kit x 2
- 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
- SFP100 series: 100Mbps SFP optical transceiver
- SFP 1G series: 1Gbps SFP optical transceiver
- SDR/NDR Series DIN-Rail power supply