

# IES-2050A



ORing WEB-site

## Industrial 5-port slim type lite-managed Ethernet switch with 5x10/100Base-T(X)

### Features

- World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 30ms over 250 units of connection)
- O-Chain allow multiple redundant network rings
- Provided Fast recovery technology for Ethernet multi-redundancy
- Support STP/RSTP standard redundant protocol
- SNMP v1/v2c/v3, http server, telnet server support
- Support LLDP protocol
- Web-based interface, telnet server and Windows utility (Open-Vision) configuration
- Event notification through Syslog, Email, SNMP trap and relay
- Provided Web / Windows Utility / DIP-Switch function to set Ring
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled



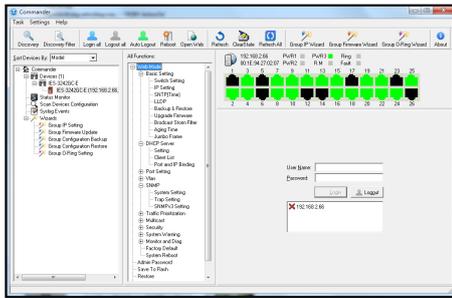
### Introduction

IES-2050A is a lite-managed Ethernet switch. With the very compact size of housing, you can install IES-2050A easily. In addition, it also supports Ethernet Redundancy protocol, O-Ring (recovery time < 30ms over 250 units of connection), O-Chain and STP/RSTP (IEEE802.1w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. IES-2050A provides the setting ability of Web-GUI and Windows Utility, also supports the simple DIP-Switch setting function which offers great flexibility to set up the Ring. IES-2050A is with rigid IP-30 housing design and can operate in harsh environments. The feature of wide operating temperature ranges from -40oC to 75oC can satisfy the most requirements of the operation.

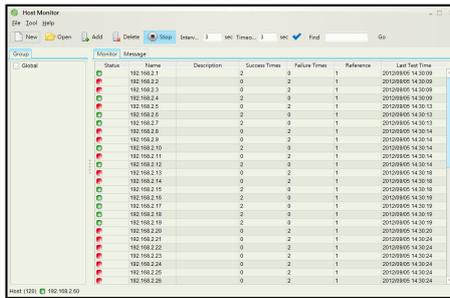
- **O-Ring:** O-Ring is O-Ring's proprietary redundant ring technology, with recovery time of less 30 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **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.

### Open-Vision

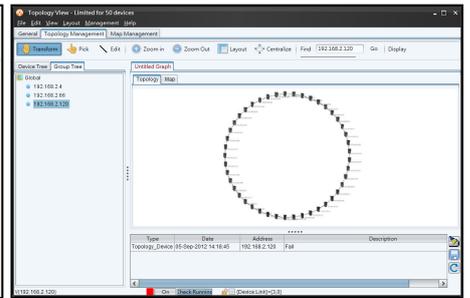
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows Utility (Open-Vision) for user to manage and monitor all industrial Ethernet switches on the industrial network.



Commander



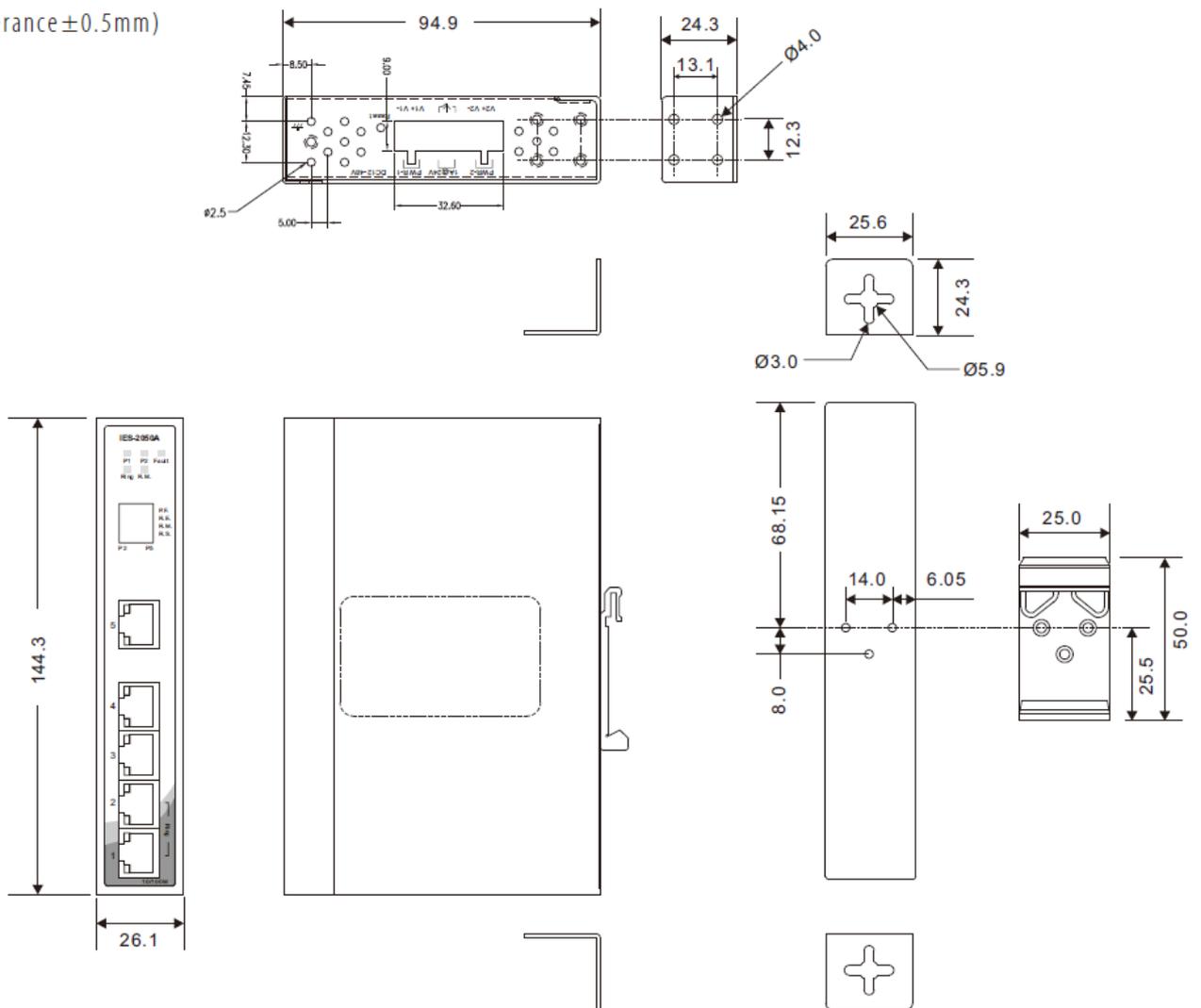
Host Monitor



Topology View

## Dimensions

Unit = mm (Tolerance ±0.5mm)



## Specifications

ORing Switch Model	IES-2050A
<b>Physical Ports</b>	
10/100Base-T(X) Ports in RJ45 Auto MDI/MDIX	5
<b>Technology</b>	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3x for Flow control IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	1K
Packet Buffer Size	1Mbits
Processing	Store-and-Forward
Switch Properties	Switching latency: 8.94 $\mu$ s Switching bandwidth: 1Gbps Throughput (packet per second): 744Kpps@64Bytes packet VLAN: Port based
Security Features	Enable/disable ports VLAN to segregate and secure network traffic
Software Features	STP/RSTP (IEEE 802.1D/w) Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units DHCP Client Port Base VLAN LLDP (Link Layer Discovery Protocol) Port configuration, status, statistics, monitoring, security SNMP v1/v2c/v3 and private MIB support
Network Redundancy	O-Ring O-Chain Fast recovery RSTP/STP
<b>DIP-Switch Setting</b>	
P.F.	When power fault enables relay warning system (On: Enable, Off: Disable function)
R.E.	Enable/Disable O-Ring function (On: Enable, Off: Disable)
R.M.	Enable/Disable Ring Master Mode (On: Enable, Off: Disable)
R.S.	O-Ring redundant port select (On: ring port set to port-1 and port-5, Off: ring port set to port-1 and port-2)
<b>LED Indicators</b>	
Power Indicator (PWR)	Green: Power LED x 2
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.
<b>Fault Contact</b>	
Relay	Relay output to carry capacity of 1A at 24VDC
<b>Reset Function</b>	
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default
<b>Power</b>	
Redundant Input Power	Dual DC inputs, 12~48VDC on 6-pin terminal block
Power Consumption (Typ.)	$\leq$ 6Watts, 12-48VDC/0.5A-0.12A
Overload Current Protection	Present

Reverse Polarity Protection	Present
<b>Physical Characteristic</b>	
Enclosure	IP-30, Iron
Dimension (W x D x H)	26.1 (W) x 94.9 (D) x 144.3 (H)mm 1.03 (W) x 3.74 (D) x 5.68 (H) inch
Weight (g)	395 g
<b>Environmental</b>	
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
<b>Regulatory Approvals</b>	
EMC	CE EMC (EN 55024, EN 55032, EN 61000-6-2, EN 61000-6-4), FCC Part 15 B
EMI	EN 55032, EN 61000-6-4, CISPR32, EN 61000-3-2, EN 61000-3-3, VCCI class A, 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)) EN 61000-6-2 (IEC/EN 61000-4-2 (ESD: Contact 4KV, Air 8KV), IEC/EN 61000-4-3 (RS: 10V), IEC/EN 61000-4-4 (EFT Power 2KV, Signal 1KV), IEC/EN 61000-4-5 (Surge: Power 0.5KV), IEC/EN 61000-4-6 (CS: 10V), 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 62368-1, UL 61010-1, UL61010-2-201
MTBF	1796601.9604 hrs.
Warranty	5 years

## Ordering Information

Available Model	Model Name	Description
	IES-2050A	Industrial 5-port slim type lite-managed Ethernet switch with 5x10/100Base-T(X)
<b>Packing List</b>		<b>Optional Accessories</b>
<ul style="list-style-type: none"> <li>IES-2050A x 1</li> <li>Wall-mount Kit x 2</li> <li>ORing Tool CD x 1</li> <li>Quick Installation Guide x 1</li> </ul>		<ul style="list-style-type: none"> <li>Open-Vision M500: Powerful Network Management Windows Utility Suit, 500 IP devices</li> <li>SDR/NDR Series DIN-Rail power supply</li> </ul>