

# 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 < 10ms 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



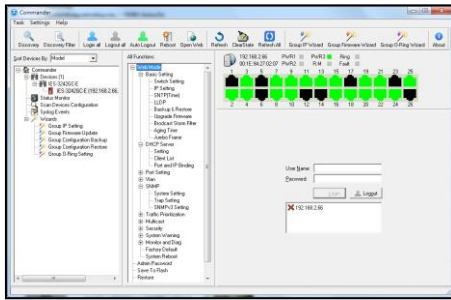
### Introduction

IES-2050A is a lite-managed Ethernet switch. With very compact size of housing, you can install IES-2050A easily. In addition, it also supports of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms 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 support the simple DIP-Switch setting function which offer great flexibility to set up the Ring. IES-2050A is with rigid IP-30 housing design and can operate under harsh environment. The feature of wide operating temperature ranges from -40°C to 75°C can satisfy most requirement of operation.

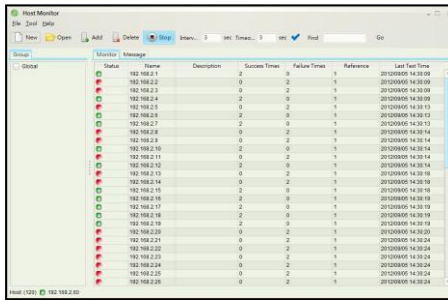
- **O-Ring:** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 10 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **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

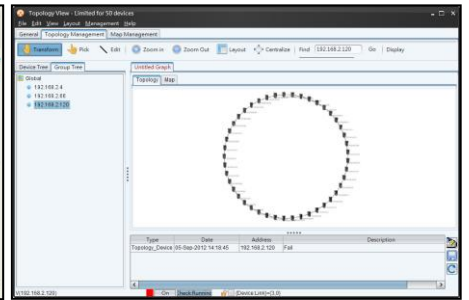
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows Utility (Open-Vision) for user to manage and monitor all industrial Ethernet switches on the industrial network.



Commander



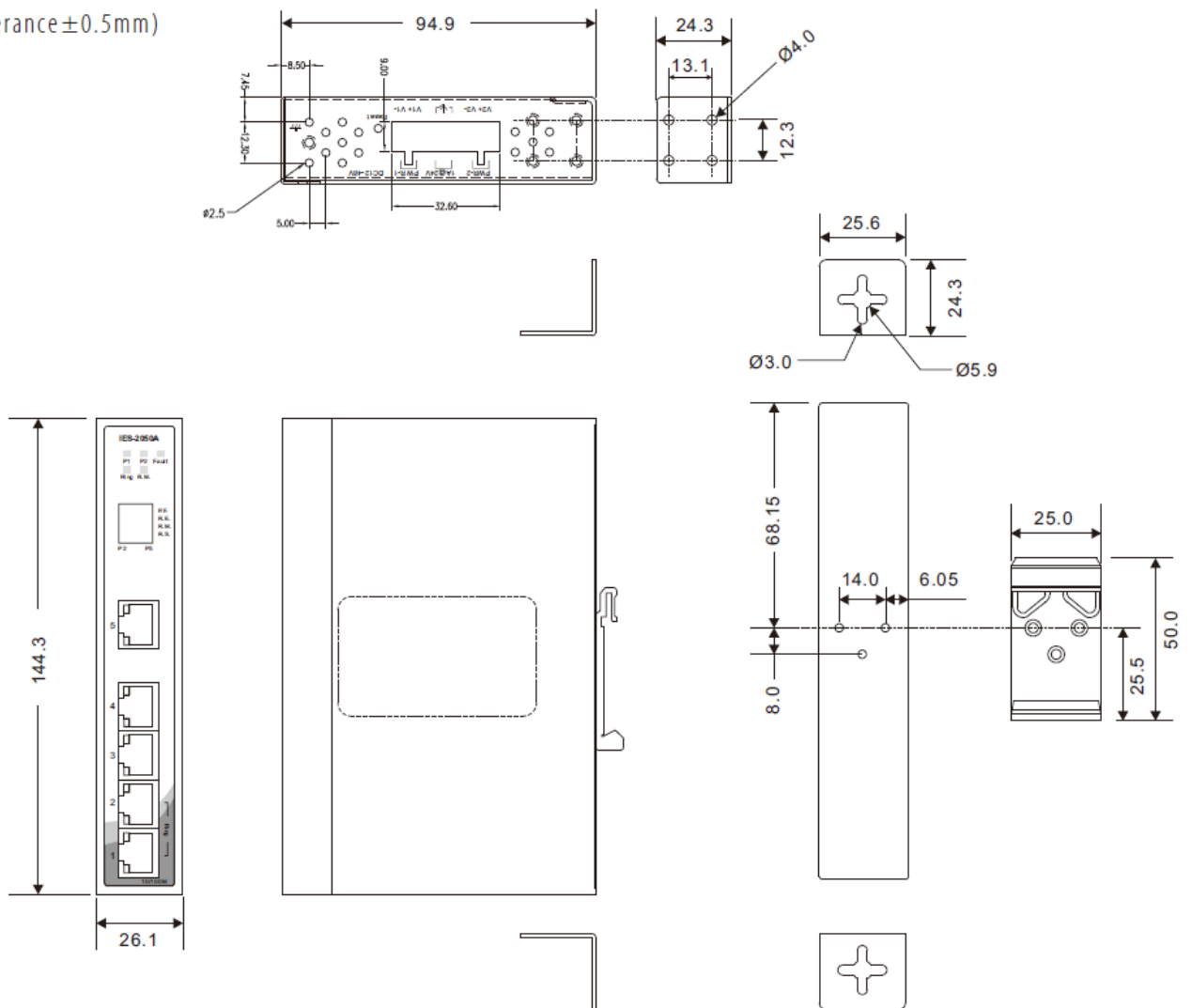
Host Monitor



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<br>IEEE 802.3u for 100Base-TX<br>IEEE 802.3x for Flow control<br>IEEE 802.1D for STP (Spanning Tree Protocol)<br>IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol)<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)                                   |
| MAC Table                                   | 2K  |
| Packet Buffer Size                          | 1Mbits  |
| Priority Queues                             | 4   |
| Processing                                  | Store-and-Forward   |
| Switch Properties                           | Switching latency: 8.94 $\mu$ s<br>Switching bandwidth: 1Gbps<br>Throughput (packet per second): 744Kpps@64Bytes packet<br>VLAN: Port based   |
| Security Features                           | Enable/disable ports<br>VLAN to segregate and secure network traffic  |
| Software Features                           | STP/RSTP (IEEE 802.1D/w)<br>Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units<br>DHCP Client<br>Port Base VLAN<br>LLDP (Link Layer Discovery Protocol)<br>Port configuration, status, statistics, monitoring, security<br>SNMP v1/v2c/v3 and private MIB support |
| Network Redundancy                          | O-Ring<br>O-Chain<br>Fast recovery<br>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<br>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.<br>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<br>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))<br>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

IES-2AA0A

|                        |  |   |
|------------------------|--|---|
| <b>Code Definition</b> | 10/100Base-T(X) Port Number  |   |
| <b>Option</b>          | -05: 5 ports   |   |
| <b>Available Model</b> | <b>Model Name</b>  | <b>Description</b>  |
|                        | IES-2050A  | Industrial 5-port slim type lite-managed Ethernet switch with 5x10/100Base-T(X) |
| <b>Packing List</b>    | <ul style="list-style-type: none"> <li>• IES-2050A x 1</li> <li>• DIN-Rail Kit 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>                   |   |
|                        | <b>Optional Accessories</b> <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> |   |

# Mouser Electronics

Authorized Distributor

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