# IES-P3073GC Series

IES-P3073GC Series

## *Industrial IEC 61850-3 10-port managed Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports, SFP socket*

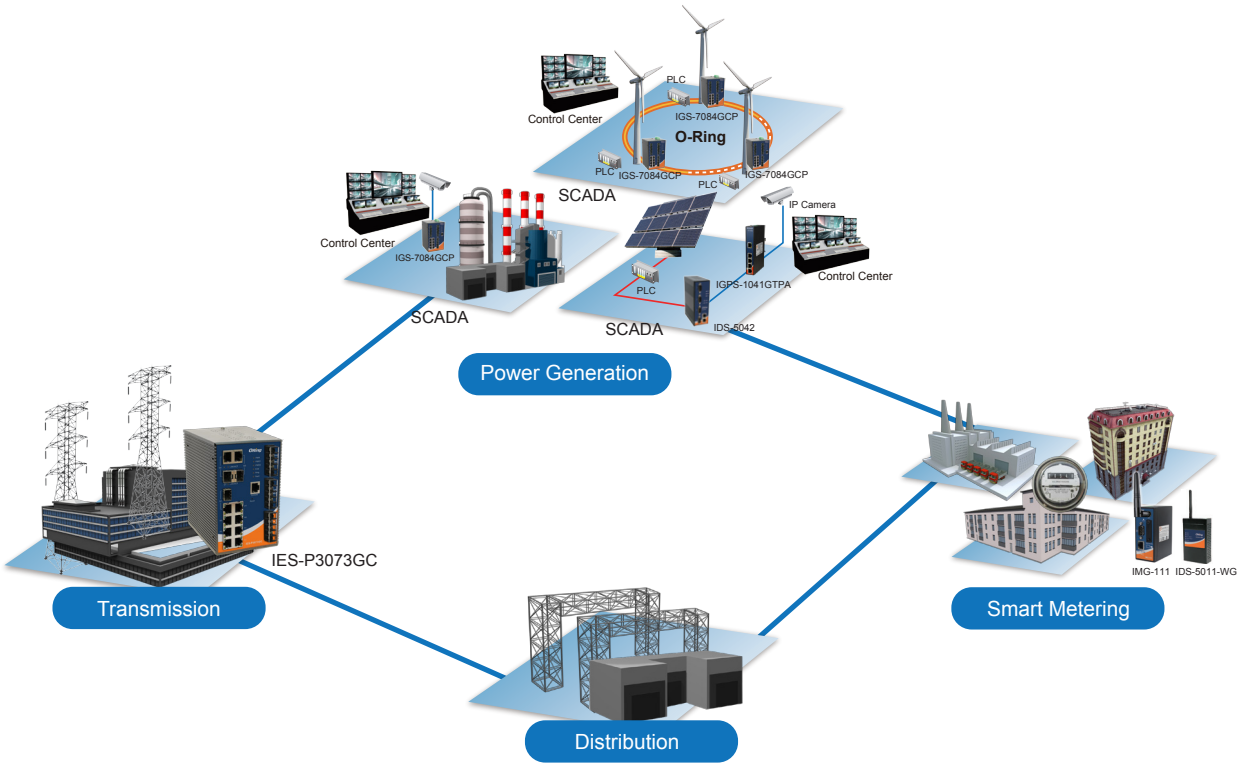
### Features

- Designed for power substation / Railway application and fully compliant with the requirement of IEC 61850-3 and IEEE 1613
- 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***NOTE (Media Redundancy Protocol) function
- STP/RSTP:2004/MSTP supported
- Support IPV6 new internet protocol version
- Support **PTP Client** (Precision Time Protocol) clock synchronization
- Provided HTTPS/SSH protocol to enhance network security
- Support Modbus/TCP protocol
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for easy of bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Supports **DDM** (Digital Diagnostic Monitoring) function
- Support LLDP protocol
- Support TACACS+ and 802.1x User Authentication for security
- Port lock to prevent access from unauthorized MAC address
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Windows utility (**Open-Vision**) support centralized management and configurable by Web-based ,Telnet, Console(CLI)
- Support 3 Gigabit combo ports
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

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

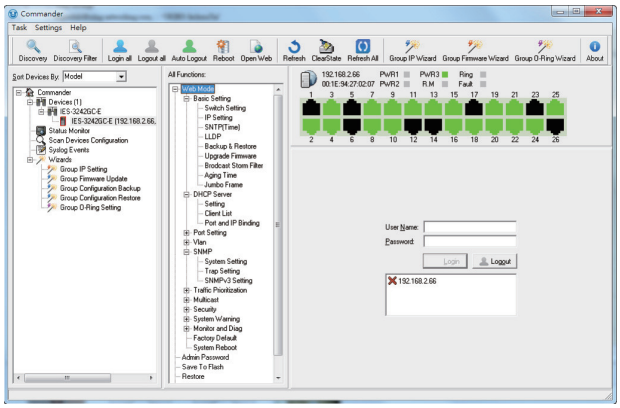
### Introduction

IES-P3073GC series are IEC 61850-3 managed Redundant Ring Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports. These switches are designed for power substation application and rolling stock application, fully compliant with the requirement of IEC 61850-3 and IEEE 1613. And these switches designed for the toughest and fully compliant with EN50155 requirement. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain, MRP*NOTE 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 provided ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology. All function of IES-P3073GC series can be managed centralized and convenient by a powerful windows utility — Open-Vision. IES-P3073GC series support new DDM (Digital Diagnostic Monitoring) function, which can monitor instantly the status of electrical voltage, current and temperature. In addition, the wide operating temperature range from -40 to 85°C can satisfy most of operating environment. Therefore, these switches are one of the most reliable choices for highly-managed Fiber Ethernet application.

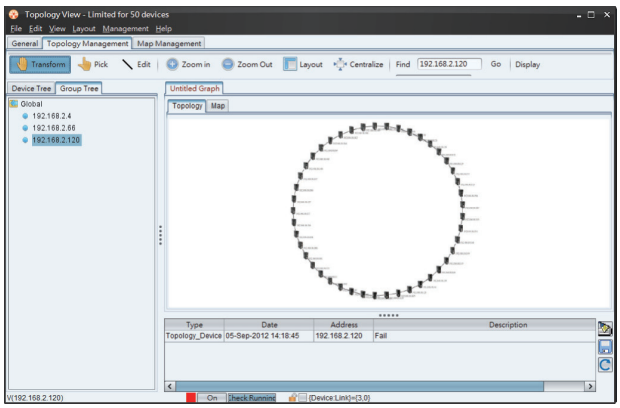



## Open-Vision

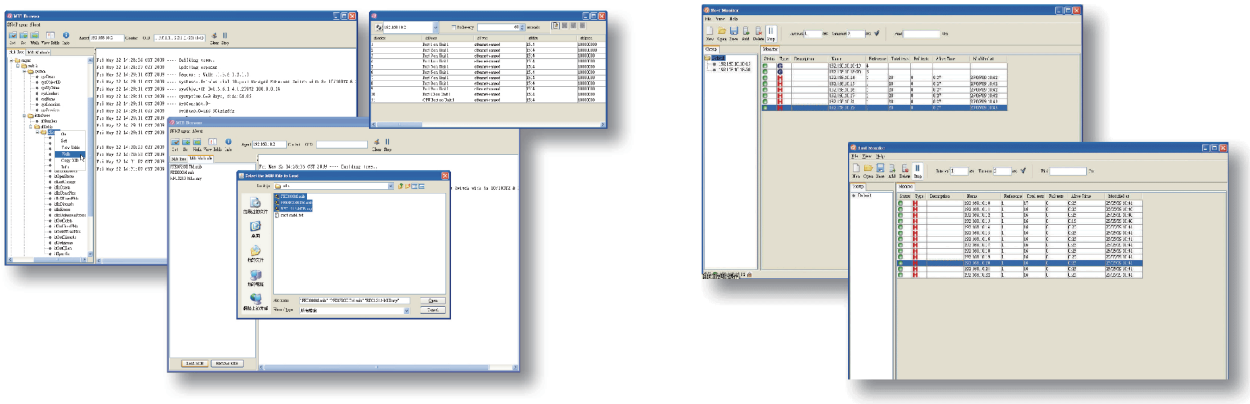
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



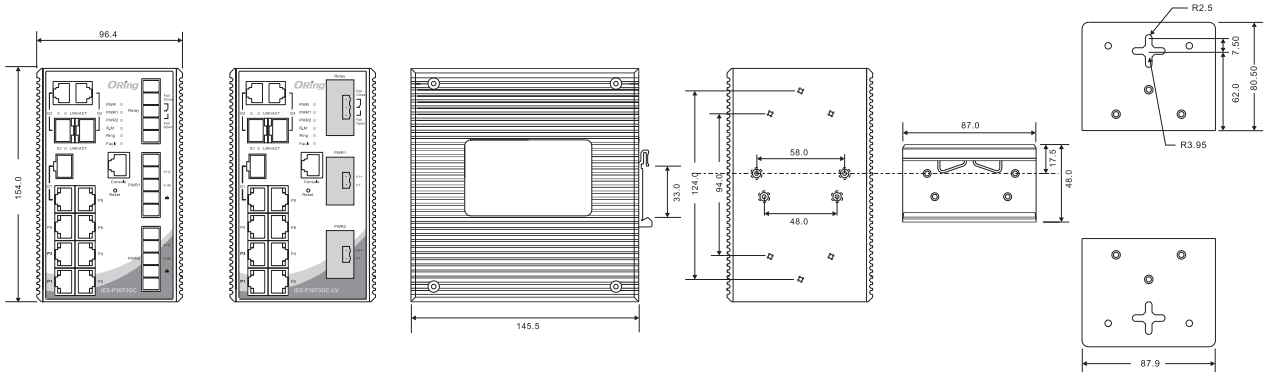
Topology View



Monitoring and Configuration interface

## Dimensions

Dimension (Unit =mm)




(Unit=mm)

## Specifications

| ORing Switch Model | IES-P3073GC-LV | IES-P3073GC-HV |
|---|---|---|
| **Physical Ports** | | |
| 10/100Base-T(X) Port in RJ45<br>Auto MDI/MDIX | 7 | |
| Gigabit combo Ports with 10/100/1000Base-T(X) and 100/1000Base-X SFP Port | 3 | |
| **Technology** | | |
| Ethernet Standards | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX and 100Base-FX<br>IEEE 802.3z for 1000Base-X<br>IEEE 802.3ab for 1000Base-T<br>IEEE 802.3x for Flow control<br>IEEE 802.3ad for LACP (Link Aggregation Control Protocol )<br>IEEE 802.1p for COS (Class of Service)<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1D for STP (Spanning Tree Protocol)<br>IEEE 802.1w for RSTP (Rapid Spanning Tree Protoco)<br>IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004)<br>IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) | |
| MAC Table | 8192 MAC addresses | |
| Priority Queues | 4 | |
| Processing | Store-and-Forward | |
| Switch Properties | Switching latency: 7 us<br>Switching bandwidth: 7.4Gbps<br>Max. Number of Available VLANs: 4096<br>IGMP multicast groups: 1024<br>Port rate limiting: User Define | |
| Security Features | Enable/disable ports, MAC based port security<br>Port based network access control (802.1x)<br>VLAN (802.1Q ) to segregate and secure network traffic<br>Supports Q-in-Q VLAN for performance & security to expand the VLAN space<br>Radius centralized password management<br>SNMP v1/v2c/v3 encrypted authentication and access security<br>Https / SSH enhance network security | |

| | | |
|---|---|---|
| Software Features | STP/RSTP:2004/MSTP (IEEE 802.1D/w/s)<br>Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units<br>TOS/Diffserv supported<br>Quality of Service (802.1p) for real-time traffic<br>VLAN (802.1Q) with VLAN tagging and GVRP supported<br>IGMP Snooping for multicast filtering<br>Port configuration, status, statistics, monitoring, security<br>SNTP for synchronizing of clocks over network<br>Support **PTP Client** (Precision Time Protocol) clock synchronization<br>DHCP Server / Client support<br>Port Trunk support<br>MVR (Multicast VLAN Registration) support<br>Modbus TCP | |
| Network Redundancy | O-Ring<br>Open-Ring<br>O-Chain<br>MRP***NOTE**<br>STP / RSTP:2004 / MSTP | |
| Warning / Monitoring System | Relay output for fault event alarming<br>Syslog server / client to record and view events<br>Include SMTP for event warning notification via email<br>Event selection support | |
| RS-232 Serial Console Port | RS-232 in RJ45 connector with console cable. 9600bps, 8, N, 1 | |
| **LED Indicators** | | |
| Power Indicator | Green : Power LED x 3 | |
| R.M. Indicator | Green : Indicates that the system is operating in O-Ring master mode | |
| Fault Indicator | Amber : Indicates unexpected event occurred | |
| 10/100Base-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 SFP Port Indicator | Green for port Link/Act. | |
| **Fault Contact** | | |
| Relay | Relay output to carry capacity of 1A at 24VDC | |
| **Power** | | |
| Redundant Input Power | Dual power inputs. 12~48VDC on dual 2-pin terminal block | Dual power inputs. 85~264VAC/88~373VDC on dual 3-pin terminal block |
| Power Consumption (Typ.) | 12 Watts | 12 Watts |
| Overload Current Protection | Present | |
| Reverse Polarity Protection | Present on terminal block | |
| **Physical Characteristics** | | |
| Enclosure | IP-30 | |
| Dimensions (W x D x H) | 96.4 (W) x 145.5 (D) x 154 (H)mm<br>3.8 (W) x 5.73 (D) x 6.06 (H)inch | 96.4 (W) x 145.5 (D) x 154 (H)mm<br>3.8 (W) x 5.73 (D) x 6.06 (H)inch |
| Weight (g) | 1415 g | 1935g |
| **Environmental** | | |
| Storage Temperature | -40 to 85°C (-40 to 185°F) | |
| Operating Temperature | -40 to 85°C (-40 to 185°F) | |
| Operating Humidity | 5% to 95% Non-condensing | |
| **Regulatory Approvals** | | |
| Power Automation | IEC 61850-3, IEEE 1613 | |
| EMI | FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4) | |
| EMS | EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11 | |
| Shock | IEC60068-2-27 | |
| Free Fall | IEC60068-2-32 | |
| Vibration | IEC60068-2-6 | |
| Safety | EN60950-1 | |
| Warranty | 5 years | |

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

## Ordering Information

**IES-P3 AA B CC**

| Code Definition | 10/100Base-T(X) Port Number | Additional Port Number | Additional Port Type |
|---|---|---|---|
| **Option** | **- 07 :** 7 ports | **- 3 :** 3 ports | **- GC :** Gigabit combo port |

| | Model Name | Description |
|---|---|---|
| Available Model | IES-P3073GC-LV | Industrial IEC 61850-3 10-port managed Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports, SFP socket, low-voltage power inputs |
| | IES-P3073GC-HV_US | Industrial IEC 61850-3 10-port managed Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports, SFP socket, high-voltage power inputs, US power cord |
| | IES-P3073GC-HV_UK | Industrial IEC 61850-3 10-port managed Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports, SFP socket, high-voltage power inputs, UK power cord |
| | IES-P3073GC-HV_EU | Industrial IEC 61850-3 10-port managed Ethernet switch with 7x10/100Base-T(X) and 3xGigabit combo ports, SFP socket, high-voltage power inputs, EU power cord |

### Packing List

- IES-P3073GC
- DIN-Rail Kit
- Wall-mount Kit
- Console Cable
- Power Cable
- ORing Tool CD
- Quick Installation Guide

### Optional Accessories (Can be purchased separately)

- Open-Vision M500, Powerful Network Management Windows Utility Suite, 500 IP devices
- SFP100 series, 100Mbps SFP optical transceiver
- SFP1G series, 1Gbps SFP optical transceiver
- DR-45 series, 45W DIN-Rail power supply
- DR-75 series, 75W DIN-Rail power supply
- DR-120 series, 120W DIN-Rail power supply

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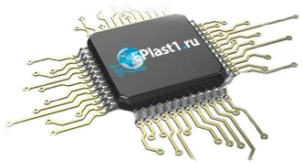
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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