



EN50155 SWITCH INDUSTRIAL MANAGED

Quick Installation Guide

IES-3082GC

EN50155 Industrial Managed Ethernet Switch

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 < 10ms over 250 units of connection), Open-Ring 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. **IES-3082GC** support new 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. 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 70°C can satisfy most of operating environment. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet application.

Features

- > Leading EN50155-compliant Ethernet switch for rolling stock application
- > 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
- > STP/RSTP/MSTP supported
- > Support PTP Client (Precision Time Protocol) clock synchronization
- > IGMP v2/v3 (IGMC snooping support) for filtering multicast traffic
- > Port Trunking for easy of bandwidth management
- > SNMP v1/v2c/v3 support for secured network management
- > Support LLDP (Link Layer Discovery Protocol)
- > Supports DDM (Digital Diagnostic Monitoring) function
- > Operating temperature detection support
- > Event notification through Syslog, Email, SNMP trap, and Relay Output
- > 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

Specifications

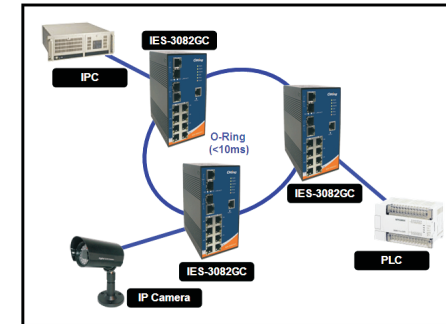
ORing Switch Model	IES-3082GC
Physical Ports	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
Gigabit Combo Ports with 10/100/1000Base-T(X) and 100/1000Base-X SFP port	2
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T, IEEE 802.3u for 100Base-TX and 100Base-FX, IEEE 802.3z for 1000Base-X IEEE 802.3ab 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	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 5.6Gbps Max. Number of Available VLANs: 4096 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 10ms over 250 units 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
Network Redundancy	O-Ring, Open-Ring, STP, RSTP, MSTP
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
DDM Function	Voltage / Current / Temperature
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
O-Ring indicator	Green: Indicate system operated in O-Ring mode
R.M. indicator	Green: Indicate system operated in O-Ring Master mode
Fault indicator	Amber: Indicate unexpected event occurred
10/100Base-T(X) RJ45 port indicator	Green for Link/Act. Amber for Duplex/Collision.
10/100/1000Base-T(X) RJ45 Port Indicator	Green for Link/Act. Amber for 100Mbps indicator.
100/1000Base-X Fiber Port Indicator	Green for port Link/Act.
Fault contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Redundant Input power	Dual DC Inputs. 12~48VDC on 6-pin terminal block
Power consumption(Typ.)	9 Watts
Overload current protection	Present
Reverse polarity protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	74.3 (W) x 109.2 (D) x 153.6 (H)mm (2.93x 4.3 x 6.05inch)

Weight (g)	1150g
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	
EMI	FCC Part 15, CISPR (EN55022) class A
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

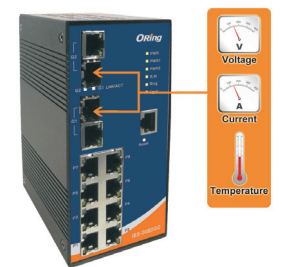
Open-Vision

ORing's switches are intelligent switches. Being 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.

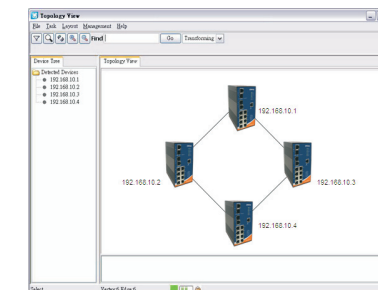
Network connection



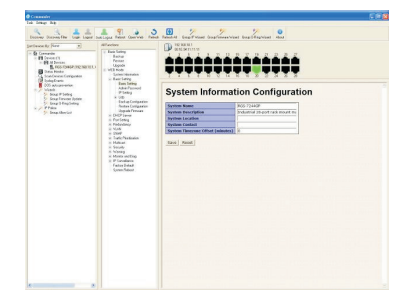
DDM function



Topology View



Monitoring and Configuration interface



ORing Industrial Networking Corp.

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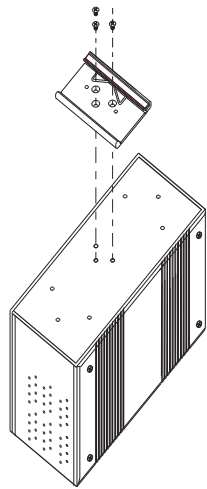
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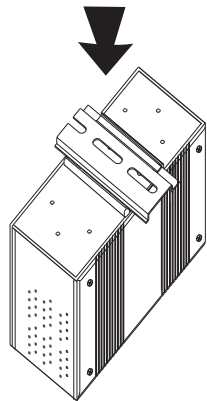
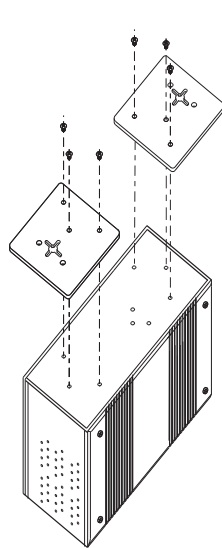
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Installation

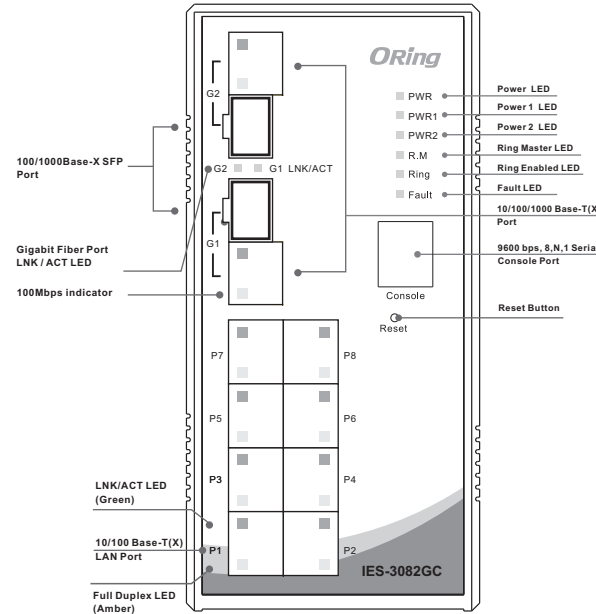
DIN-Rail Install Step



Wall-mounted Install Step

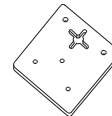
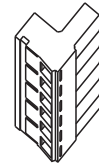
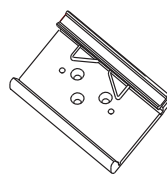


Front Panel



Accessory

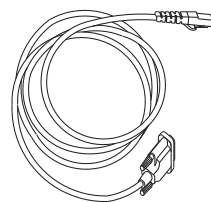
- ① 66mm DIN-Rail kit
- ② 6-Pin Terminal block
- ③ Wall-mounted Kit
- ④ Dust Cover (RJ-45)



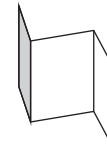
- ⑤ Dust Cover (SFP)



- ⑥ Console Cable



- ⑦ QIG



- ⑧ CD



Packing list

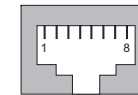
Model name	Model Description	Accessory
IES-3082GC	EN50155 10-port managed Ethernet switch with 8x10/100Base-T(X) and 2xGigabit combo ports, SFP socket	⊙ X 1, ⊙ X 1, ⊙ X 2, ⊙ X 10, ⊙ X 2, ⊙ X 1, ⊙ X 1, ⊙ X 1

Communication Connections

10/100Base-T(X) Ethernet Port Connection

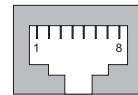
RJ45 (8-pin, MDI) Port Pinouts

Pin	Single
1	Tx+
2	Tx-
3	Rx+
6	Rx-

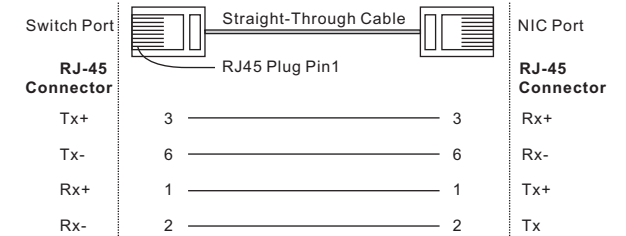


RJ45 (8-pin, MDI-X) Port Pinouts

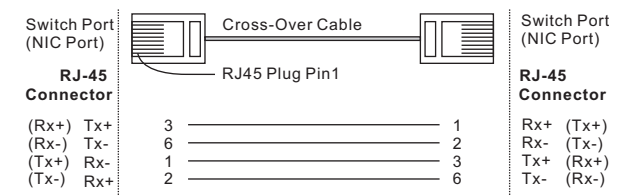
Pin	Single
1	Rx+
2	Rx-
3	Tx+
6	Tx-



RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring



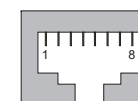
RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring



1000Base-T Ethernet Port Connection

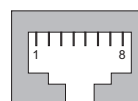
RJ45 (8-pin, MDI) Port Pinouts

Pin	MDI
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DB-
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

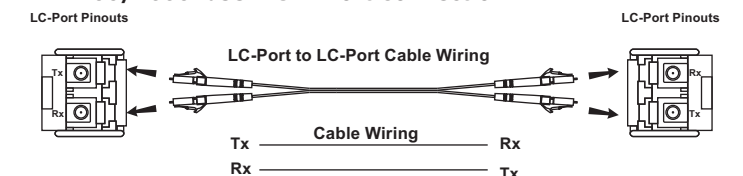


RJ45 (8-pin, MDI-X) Port Pinouts

Pin	MDI-X
1	BI_DB+
2	BI_DB-
3	BI_DA+
4	BI_DD+
5	BI_DD-
6	BI_DA-
7	BI_DC+
8	BI_DC-



100/1000Base-X SFP Port Connection



Power Connection Guide

