PoE SWITCH INDUSTRIAL

Quick Installation Guide

IPS-3082GC Series

Industrial PoE Managed Ethernet Switch

Introduction

IPS-3082GC Series is managed redundant ring Ethernet switch with 8x10/100Base-T(X) ports with PoE (P.S.E.) function and 2xGigabit combo ports. With completely support of Ethernet redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-RSTP 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. I**PS-3082GC Series** also supports Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each I**PS-3082GC Series** switch has 8X10/100Base-T(X) P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (or hub for instance) that will provide power in a PoE setup. I**PS-3082GC Series** support new DDM (Digital Diagnostic Monitoring) function, which can monitor instantly the status of electronic voltage, current and temperature. All function of **IPS-3082GC Series** can be managed centralized by a powerful windows utility**:** Open-Vision. In addition, the wide operating temperature range from -40 to 70℃ can satisfy most of operating environment. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet application with PoE function.

Features

▷ **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 two Gigabit combo ports**

▷ **8 ports P.S.E. fully compliant with IEEE802.3af standard, provide up to 15.4 Watts per port**

▷ **IPS-3082GC-AT is fully compliant with IEEE802.3at standard provide up to 30watts per port**

▷ **Provide PoE power on delay function**, users can define delay time for PoE power supply

▷ **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**

▷ **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)**

▷ **Rigid IP-30 housing design**

PoE Pin Definition

RJ-45 Pin Definition	
Pin No.	Description
#1	TD+ with PoE Power input +
#2	TD- with PoE Power input +
#3	RD+ with PoE Power input -
#6	RD- with PoE Power input -

Specifications

ORing Switch Model	IPS-3082GC	IPS-3082GC -AT	IPS-3082GC -24V
Physical Ports			
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX with P.S.E.	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 802.1D for STP (Spanning Tree Protocol) IEEE 802.3ad for LACP (Link Aggregation Control Protocol), IEEE 802.3x for Flow control 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) IEEE 802.3af/at PoE specification		
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, O-chain, 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/PoE indicator	Green: Power LED x 3, Green: PoE LED x 8		
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. 48VDC on 6-pin terminal block	Dual DC inputs. 50~57VDC on 6-pin terminal block	Dual DC inputs. 24~36VDC on 6-pin terminal block
Power consumption(Typ.)	9 Watts (power consumption of P.S.E. is not included)		
Overload current protection	Present		
Reverse polarity protection	Not Presented		
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)	1100 g	1090 g	1260g

Environmental

Storage Temperature	-40 to 85℃ (-40 to 185°F)
Operating Temperature	-40 to 70℃ (-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.
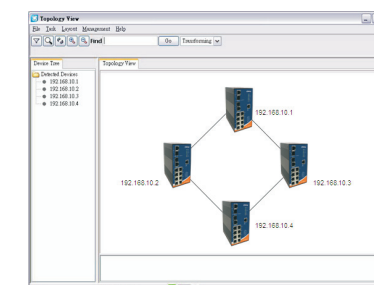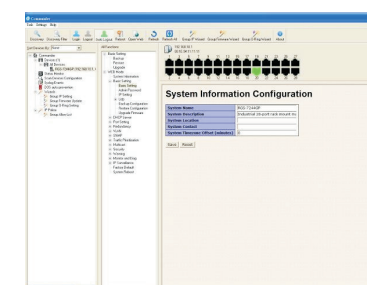
◉ **Network connection**
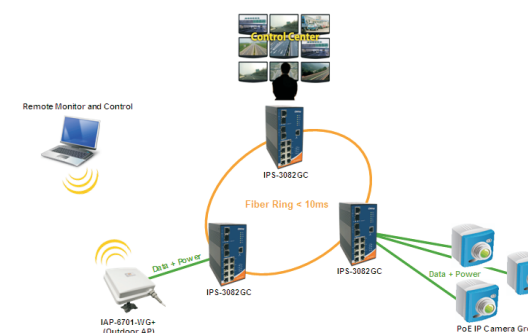
◉ **DDM function**

◉ **Topology View**

◉ **Monitoring and Configuration interface**
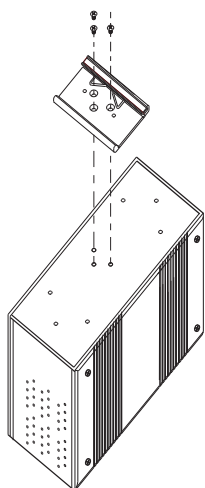
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Quick Installation Guide
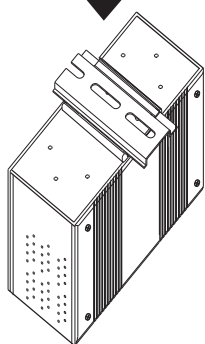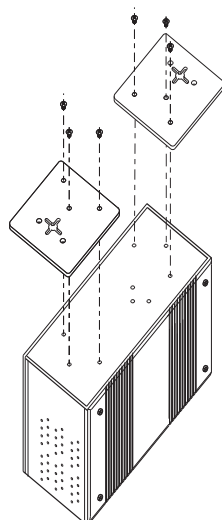
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Installation

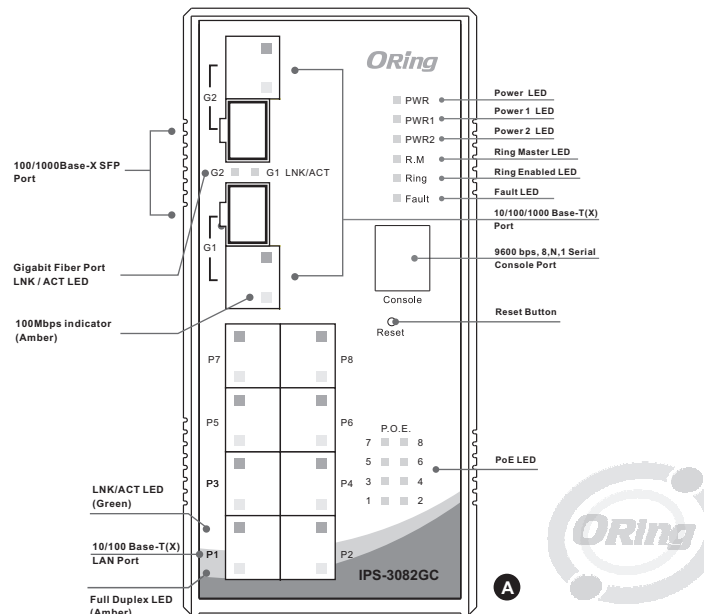### ● DIN-Rail Install Step

● Wall-mounted Install Step

ORing Industrial Networking Corp.

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Power Connection Guide

Power Supply
GND
+24V
Warning Device

Power Supply
48 VDC (IPS-3082GC)
50 VDC (IPS-3082GC-AT)
24 VDC (IPS-3082GC-24V)

V+
V-

Power Supply
48 VDC (IPS-3082GC)
50 VDC (IPS-3082GC-AT)
24 VDC (IPS-3082GC-24V)

V-
V+

PWR-2   Fault   PWR-1
1A@24V
V2- V2+   V1- V1+

Frame Ground

Front Panel

G2
G2   G1 LNK/ACT
G1

100/1000Base-X SFP Port
Gigabit Fiber Port LNK / ACT LED
100Mbps indicator (Amber)

PWR — Power LED
PWR1 — Power 1 LED
PWR2 — Power 2 LED
R.M — Ring Master LED
Ring — Ring Enabled LED
Fault — Fault LED

10/100/1000 Base-T(X) Port
9600 bps, 8,N,1 Serial Console Port
Console
Reset — Reset Button

P7   P8
P5   P6
P.O.E.
7   8
5   6
P3   P4   3   4
1   2

LNK/ACT LED (Green)
10/100 Base-T(X) LAN Port
P1   P2
Full Duplex LED (Amber)

PoE LED

IPS-3082GC
A

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
IPS-3082GC	Industrial 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2xGigabit combo ports, SFP socket	◉X 1, ◉X 1, ◉X 2, ◉X 10, ◉X 2, ◉X 1, ◉X 1, ◉X 1
IPS-3082GC-AT	Industrial 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) 802.3at-P.S.E. and 2xGigabit combo ports, SFP socket	◉X 1, ◉X 1, ◉X 2, ◉X 10, ◉X 2, ◉X 1, ◉X 1, ◉X 1
IPS-3082GC-24V	Iindustrial 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2xGigabit combo ports, SFP socket, 24V power input	◉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	PoE Power output+
2	PoE Power output+
3	PoE Power output-
6	PoE Power output-
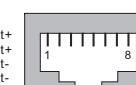
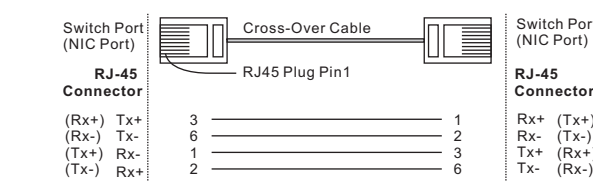■ RJ45 (8-pin, MDI-X) Port Pinouts

| Pin	Single
1	PoE Power output+
2	PoE Power output+
3	PoE Power output-
6	PoE Power output-
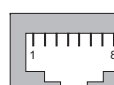
■ RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring

Switch Port   Straight-Through Cable   NIC Port
RJ-45 Connector   RJ45 Plug Pin1   RJ-45 Connector

Tx+	3	3	Rx+
Tx-	6	6	Rx-
Rx+	1	1	Tx+
Rx-	2	2	Tx
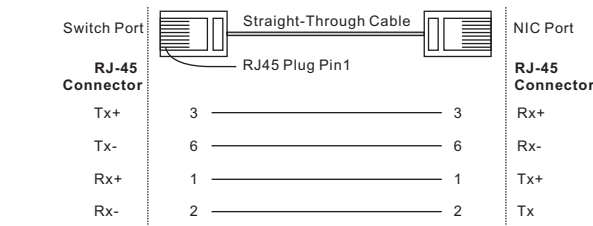
■ RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring

Switch Port (NIC Port)   Cross-Over Cable   Switch Port (NIC Port)
RJ-45 Connector   RJ45 Plug Pin1   RJ-45 Connector

(Rx+)	Tx+	3	1	Rx+ (Tx+)
(Rx-)	Tx-	6	2	Rx- (Tx-)
(Tx+)	Rx-	1	3	Tx+ (Rx+)
(Tx-)	Rx+	2	6	Tx- (Rx-)

● 1000Base-T Ethernet Port Connection

■ RJ45 (8-pin, MDI) Port Pinouts

Pin	MDI
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-
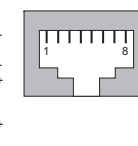
■ RJ45 (8-pin, MDI-X) Port Pinouts

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-
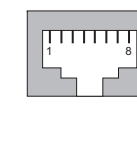
● 100/1000Base-X SFP Port Connection

LC-Port Pinouts   LC-Port Pinouts

LC-Port to LC-Port Cable Wiring

Tx   Cable Wiring   Rx
Rx   Tx