PoE GIGABIT SWITCH INDUSTRIAL

ORing

Quick Installation Guide

IGPS-9084GP-LA-24V Industrial Managed PoE Gigabit Switch

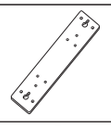
Introduction

IGPS-9084GP-LA-24V is layer2 managed PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E. ports and 4x100/1000Base-X SFP ports. The switch support Ethernet Redundancy protocol, O-Ring (recovery time < 30ms) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. **IGPS-9084GP-LA-24V** also support Power over Ethernet, a system to transmit electrical power up to 30 watts, total PoE power budget is 120W max, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. **IGPS-9084GP-LA-24V** switch has 8x10/100/1000Base-T(X) P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (switch or hub for instance) that will provide power in a PoE connection. And support wide operating temperature from -40 ℃ to 75 ℃. **IGPS-9084GP-LA-24V** can also be managed centralized and convenient by Open-Vision, except the Web-based interface, Telnet and console (CLI) configuration.

The product is standalone and open type, intended to be installed in and industrial control panel or an enclosure.

Package Contents

The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

Contents	Pictures	Number
IGPS-9084GP-LA-24V		X 1
CD		X 1
DIN-rail Kit		X 1
Wall-mount Kit		X 1
Console Cable		X 1
QIG		X 1

Preparation

Before you begin installing the switch, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

Safety & Warnings

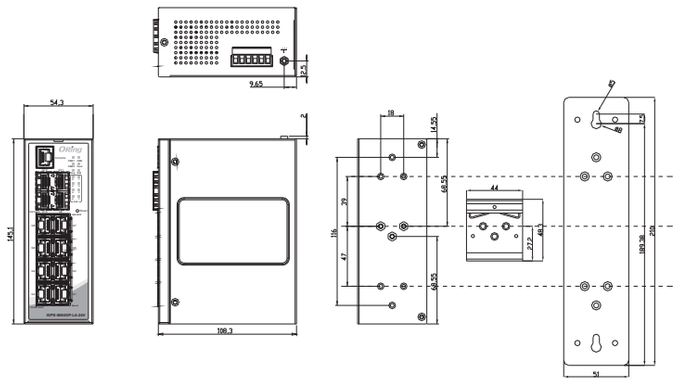
Elevated Operating Ambient: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

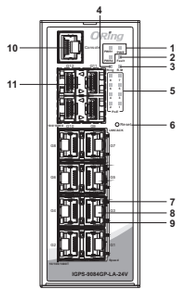
Dimension



Unit =mm (Tolerance ±0.5mm)

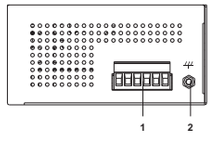
Panel Layouts

Front View



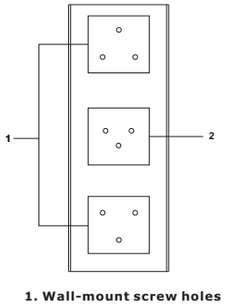
1. PWR indicators
2. Faulty relay indicator
3. R.M. status LED
4. Ring status LED
5. PoE indicators for LAN ports
6. Reset button
7. Link/Act LED for Gigabit LAN ports
8. Gigabit PoE LAN ports
9. Speed LED for Gigabit LAN ports
10. Console port
11. SFP Ports

Top View



1. Terminal blocks: PWR1, PWR2 , Relay
2. Ground wire.

Rear View



1. Wall-mount screw holes
2. Din-rail screw holes

Warning [AVERTISSEMENT]

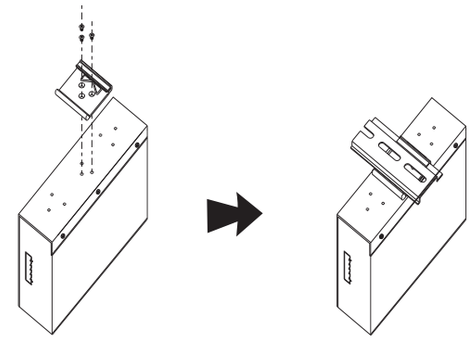
Take into consideration the following guidelines before wiring the device
[Tenez compte des directrices suivantes avant de câbler l'appareil.]
1. Terminal block is mating with Plug and suitable for 12-24AWG.
Torque value 4.5 lb-in.
[Le bornier est compatible avec les connecteurs et convient pour 12-24AWG.
Valeur de couple 4,5 lb-in.]
2. The temperature rating of the input connection cable should higher than 105°C
[La température de service nominale du câble d'entrée doit être supérieure à 105 °C]
3. Use Copper Conductors Only.
[Utilisez uniquement des conducteurs en cuivre.]

* Indoor use and pollution degree II, it must be wiped with a dry cloth for clean up the device and label.
* Utilisation en intérieur et degré de pollution II, il faut l'essuyer avec un chiffon sec pour nettoyer l'appareil et son étiquette.
* Do not block air ventilation holes.
* Ne bouchez pas les orifices de ventilation.
* If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired."
* Si l'appareil est utilise d'une maniere non specifiee par le fabricant, la protection qu'il apporte peut se voir diminuee."
* Shall be mounted in the Industrial Control Panel and ambient temperature is not exceed 75 degree C
* doit être monté dans le panneau de commande industriel et la température ambiante ne doit pas dépasser 75 degrés C

Installation

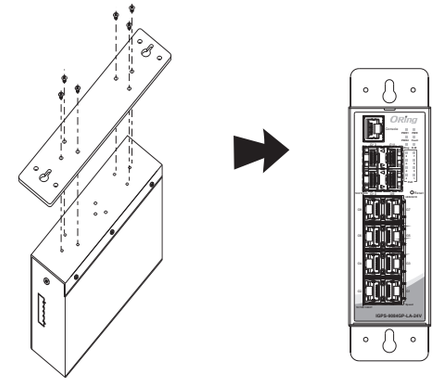
DIN-rail Installation

Step 1: Slant the switch and screw the Din-rail kit onto the back of the switch, right in the middle of the back panel.
Step 2: Slide the switch onto a DIN-rail from the Din-rail kit and make sure the switch clicks into the rail firmly.



Wall-mounting

Step 1: Screw the wall-mount kit onto the rear panel of the switch. A total of six screws are required, as shown below.
Step 2: Use the switch, with wall mount plates attached, as a guide to mark the correct locations of the four screws.
Step 3: Insert a screw head through the large parts of the keyhole-shaped apertures, and then slide the switch downwards. Tighten the screws for added stability.



Network Connection

The switch provides standard Ethernet ports. According to the link type, the switch uses CAT 3,4,5,5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000BASE-T	Cat. 5 / Cat. 5e 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

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For pin assignments for different types of cables, please refer to the following tables.

10/100Base -T(X) P.S.E. RJ-45 port	
Pin No.	Description
#1	TD+ with PoE Power Input +
#2	TD - with PoE Power Input +
#3	RD+ with PoE Power Input -
#4	N.C.
#5	N.C.
#6	RD - with PoE Power Input -
#7	N.C.
#8	N.C.

1000Base -T P.S.E. RJ-45 port	
Pin No.	Description
#1	BI_DA+ with PoE Power Input +
#2	BI_DA - with PoE Power Input +
#3	BI_DB+ with PoE Power Input -
#4	BI_DC+
#5	BI_DC -
#6	BI_DB - with PoE Power Input -
#7	BI_DD+
#8	BI_DD -

10/100 Base-T(X) MDI/MDI-X		
Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

1000Base-T MDI/MDI-X		
Pin Number	MDI port	MDI-X port
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

Console Port Pin Definition

To connect the console port to an external management device, you need an RJ-45 to DB-9 cable, which is also supplied in the package. Below is the console port pin assignment information.

PC (male) pin assignment	RS-232 with DB9 (female) pin assignment (RJ45-DB9 cable)	RJ45 pin assignment
PIN#2 RxD	PIN#2 RxD	PIN#2 RxD
PIN#3 TxD	PIN#3 TxD	PIN#3 TxD
PIN#5 GND	PIN#5 GND	PIN#5 GND

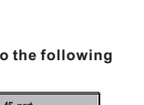
Wiring

Power inputs

The switch supports dual redundant power supplies, Power Supply1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1, PWR2 and the RELAY are located on the terminal block.

STEP 1: Insert the negative/positive wires into the V-/V+ terminals, respectively.

STEP 2: To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.



Relay contact

The two sets of relay contacts of the 6-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form an close circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains opened.

Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screws to the grounding surface prior to connecting devices.

Configurations

After installing the switch, the green power LED should turn on. Please refer to the following tablet for LED indication.

LED	Color	Status	Description
PWR	Green	On	DC power on
PWR1	Green	On	DC power module 1 activated
PWR2	Green	On	DC power module 2 activated
R.M	Green	On	Ring Master
Ring	Green	On	Ring enabled
		Blinking	Ring structure is broken (i.e. part of the ring is disconnected)
Fault	Amber	On	Faulty relay (power failure or port disconnected)
PoE	Green	On	Power supplied over Ethernet
10/100/1000Base-T(X) Gigabit PoE Ethernet ports			
LNK/ACT	Green	On	Port link up
		Blinking	Data transmitted
Speed	Green	On	Port link at 1000Mbps
	Amber	On	Port link at 100Mbps
	Green/Amber	Off	Port link at 10Mbps
SFP ports			
LNK/ACT	Green	On	Port link up
		Blinking	Data transmitted

Follow the steps to set up the switch:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.1**

2. Log in with default user name and password (both are **admin**). After logging in, you should see the following screen. For more information on configurations, please refer to the user manual. For information on operating the switch using ORing's Open-Vision management utility, please go to ORing website.

Resetting

To reboot the switch, press the **Reset** button for 2-3 seconds.

To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

Contact for maintenance and repair service:

ORing

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Specifications

ORing Switch Model	IGPS-9084GP-LA-24V
Physical Ports	
10/100/1000Base-T(X) with P.S.E. Ports in RJ45 Auto MDI/MDIX	8
100/1000Base-X with SFP port	4
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1D for STP (Spanning Tree Protocol) 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 802.3at PoE specification (up to 30 Watts per port for P.S.E.)
PoE Power Supply Type	Endspan mode
MAC Table	8K
Priority Queues	8
Processing	Store-and-Forward
Share Data Buffer	4Mbit
Switch Properties	Switching latency: 7 us Switching bandwidth: 6Gbps Throughput (packet per second) : 8.928Mpps@64Bytes packet Max. Number of Available VLANs: 4095 VLAN ID Range : VID 0 to 4094 IGMP multicast groups: 256 for each VLAN Port rate limiting : User Define
Jumbo frame	Up to 9.6K Bytes
Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security
Software Features	MSTP (RSTP/STP compatible) Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP NTP server
Network Redundancy	O-Ring, O-Chain, MRP ***Note**, MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 115200bps, 8, N, 1
Fault Contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Reset Function	
Reset Function	< 5 sec: System reboot, > 5 sec: Factory default
Power	
Redundant Input power	Dual 12~57 VDC on 6-pin terminal block ⚠ * Supplied by SELV source evaluated by UL 61010-1 or 61010-2-201 power supply only. * Fourni par la source SELV évaluée uniquement par l'alimentation UL 61010-1 or 61010-2-201.
Power consumption(Typ.)	13.2 Watts
PoE Power Budget	60W at 12~24VDC, 120W at 24~57VDC
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Dimension (W x D x H)	54.3 (W) x 108.3 (D) x 145.1 (H) mm (2.13 x 4.26 x 5.71 inches)
Weight (g)	935g
Environmental	
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
Operating Alttitude	Up to 2000m
Regulatory Approvals	
EMC	CE EMC (EN 55024, EN 55032), FCC Part 15 B
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A
EMS	EN 55024 (IEC/EN 61000-4-2(ESD), IEC/EN 61000-4-3(RS), IEC/EN 61000-4-4(EFT), IEC/EN 61000-4-5(Surge), IEC/EN 61000-4-6(CS), 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	UL61010-1 , EN62368-1
MTBF (hrs)	TBD
Warranty	5 years

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