



**DIGISOL**



# **DG-IS4508HP/IS4512HP/IS4514HP**

Industrial Ethernet POE L2 SWITCHES

## **User Manual**

V2.0

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As our products undergo continuous development the specifications are subject to change without prior notice

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## Chapter 1 Information of Managed Switch

This section explains the parameters of POE managed switch.

### 1.1 Overview

These Managed Ethernet Switches are designed for supporting standard industrial applications. Managed switches are easier to prioritize, partition, and organize user's network, providing a more reliable and better quality services.

### 1.2 Package Checklist

Please verify the box contains the following items:

Item	Quantity
Management Ethernet switch	1
Wall-mount plates	2
DIN-Rail CLIP	1
M3 Screws (for the wall mount plates & DIN CLIP)	4
DC power terminal block	1
SFP Ethernet port Dust cover	Same as SFP port number

Features of standard ports:

Port name	Features
Gigabit Ethernet interfaces with PoE	PoE: IEEE 802.3af, Speed: 10/100/100M auto-sense, cable: MDI/MDIX, UTP (RJ45) interface with LINK/ACT, PoE indicator.
SFP interfaces	Speed: 1000M
Console interface	Speed: 115200bps, RJ45 interface

Components of Managed POE Switch front-panel:

NO.	Name		Description
1	PWR (P1,P2)	Power indicator lights	Switch on and indicator lights.
2	ALM	Alarm	Alarm Indication lights.
3	PoE	PoE Indicator of PoE port.	Indicator lights when PoE linking is normal

### 1.3 POE Switch System Properties Parameters

Table of POE Switch property parameters:

<b>Model</b>	<b>PoE Managed Series</b>
<b>Ethernet</b>	
<b>Copper RJ45 Ports</b>	10/100/1000 Mbps speed auto-negotiation MDI/MDIX Auto-crossover
<b>SFP(pluggable Ports)</b>	100/1000Base SFP slot
<b>Fiberport connector</b>	LC typically for fiber (depends on module)
<b>Power</b>	PoE Managed series
<b>Power input</b>	Redundant Input Terminals; Reverse power protection
<b>Input voltage range</b>	12-58 VDC (with POE: 46-58 VDC)
<b>Maximum Power consumption</b>	Without PoE: 14 Watts With PoE: 265 Watts
<b>Environmental and Compliance</b>	
<b>Operating temperature</b>	-40 to +75° C (cold startup at -40° C)
<b>Storage</b>	-40 to +85° C
<b>Humidity</b>	5 to 95% RH (non-condensing)
<b>Mechanical</b>	PoE Managed series
<b>Ingress protection</b>	IP30
<b>Dimension (without DIN rail clip)</b>	154mm(H) x 128mm(D) x 77mm(W)
<b>Weight</b>	1410g
<b>Installation option</b>	DIN-Rail mounting Wall mounting

## Chapter 2

# Preparing for installation

The following discusses the considering cases of switch installation, includes two sections:

Please continue to read "switch Installation" after reading this section.

## Safety Instructions

When a fiber connection is removed during installation, testing, servicing or an active fiber is broken, ocular exposure to optical energy may be potentially hazardous, depending on the laser output power.

The primary hazards of exposing laser radiation from an optical-fiber communication systems are:

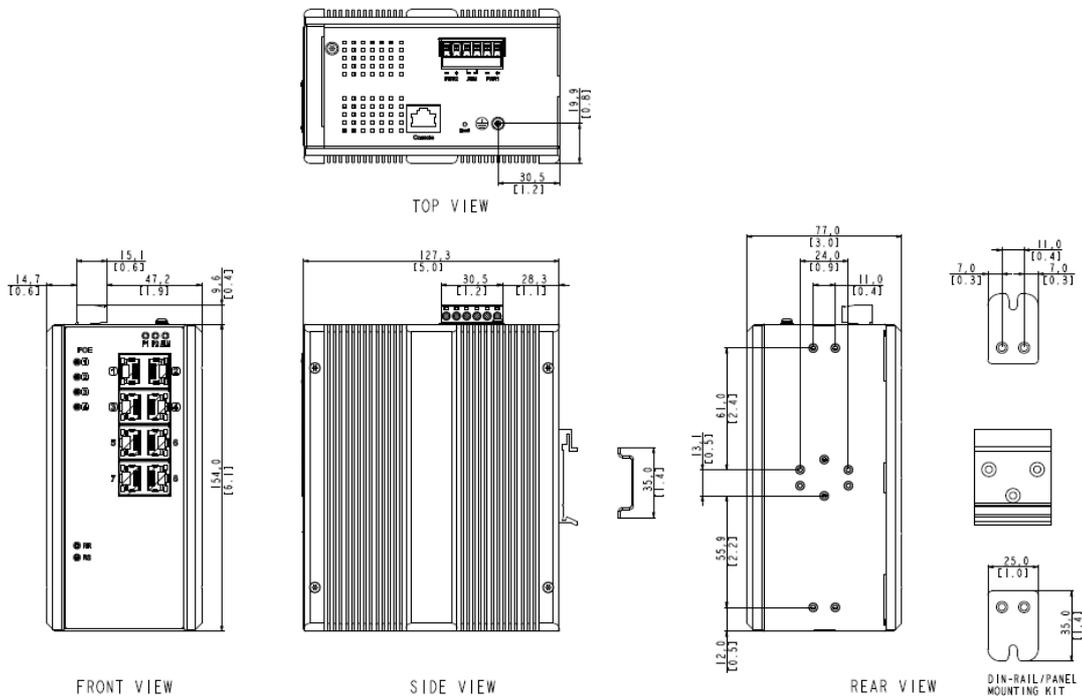
- ✧ Damage to eyes from accidental exposure to a beam emitted by a laser source.
- ✧ Damage to eyes from viewing the connector that attaches to a broken fiber or an energized fiber.

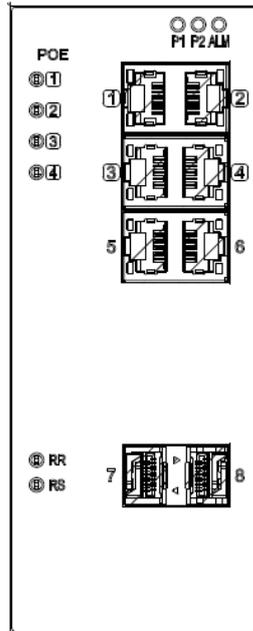
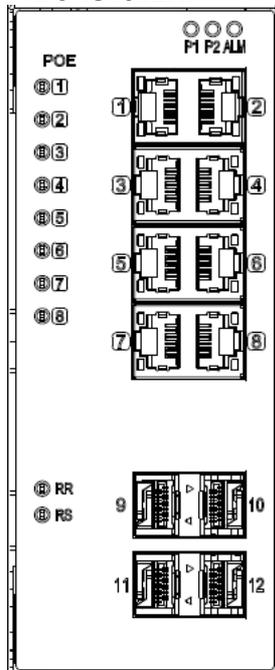
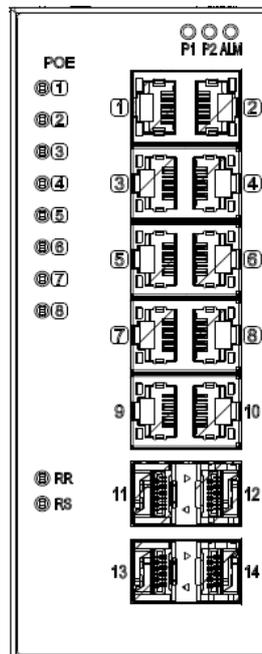
## Chapter 3 Installing switch

This section explains the detail of POE Switch installation:

**Warning:**

Only qualified mechanics are allowed to install or replace the device.



**PoE Managed Series**
**DG-IS4508HP**

**DG-IS4512HP**

**DG-IS4514HP**


## 3.1 Installation tools and devices

Tools and devices needed for POE switch are optional devices. Users have to buy according to their needs. The following tools and devices are typical for POE switch:

- ✧ screw driver
- ✧ static ring
- ✧ screws
- ✧ Ethernet Cable
- ✧ other Ethernet terminal devices
- ✧ console terminal

## 3.2 Switch Case Installation

Switches can be placed on the table, mounting or other surfaces. To install your network correctly, follow the steps in this section. The content includes:

### 3.2.1 Install on the desk

POE Switch can be placed on a smooth and safe desk.

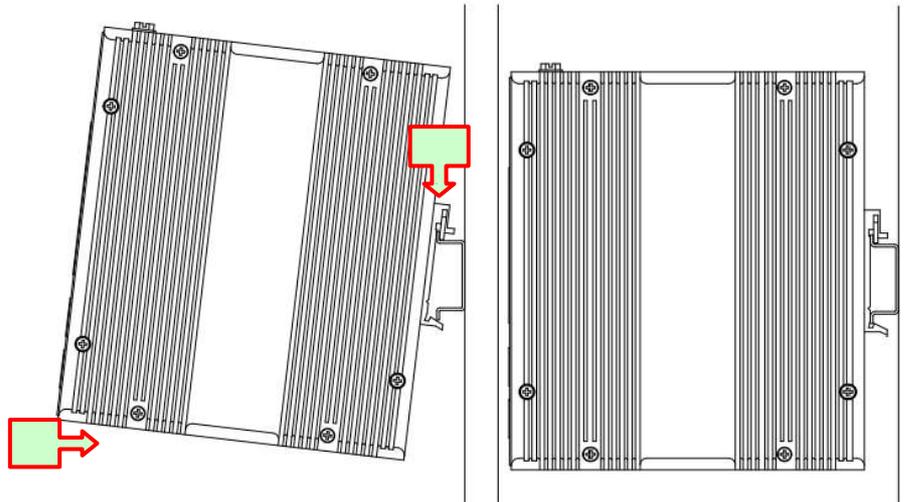
**Note:**

Do not press on the switch. Any pressure more than 4.5kg may cause damage to switch.

### 3.2.2 DIN-Rail Mounting

**Mounting steps:**

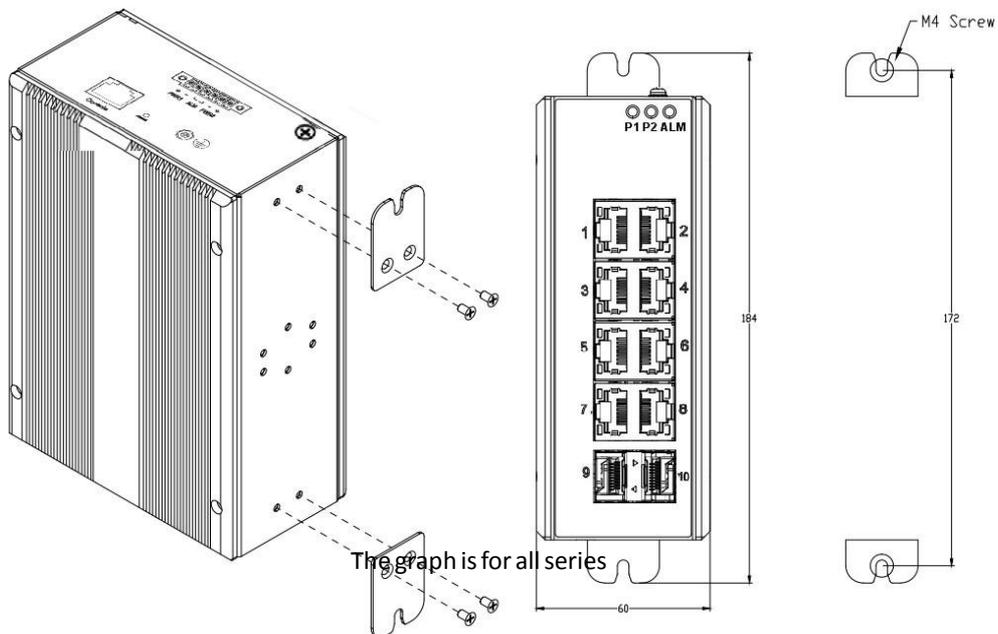
- Screw the din-clip with screws in the accessory kit.
- Hook the unit onto the din-rail.
- Push the bottom of the unit towards the din-rail until it locks in place.



### 3.2.3 Wall Mounting

#### Mounting steps:

- ✧ wall-mount brackets with screws in the accessory kit.



### 3.3 Ethernet Interface (RJ45 Ethernet)

The switch provides two types of Ethernet interfaces: electrical (RJ45) and optical (SFP) interfaces.

Connecting the Ethernet interface via RJ45:

- To connect the switch to a PC, use straight-through or cross-over Ethernet cables,
- To connect the switch to an Ethernet device, use UTP ( Unshielded Twisted Pair) or STP (Shielded Twisted Pair) Ethernet cables.

The pin assignment of RJ-45 connector is shown in the following figure and table.

Pin	Assignment	PoE Assignment
1,2	T/Rx+,T/Rx-	Positive $V_{Port}$
3,6	T/Rx+,T/Rx-	Negative $V_{Port}$
4,5	T/Rx+,T/Rx-	X
7,8	T/Rx+,T/Rx-	X

### 3.4 Ethernet Interface (Fiber, SFP)

For both 100/1000 Mbps fiber speed connections, the SFP slots are available. The SFP slot accepts the fiber transceivers that typically have an LC connector.

The fiber transceivers have options of multimode, single mode, long-haul or special-application transceivers.

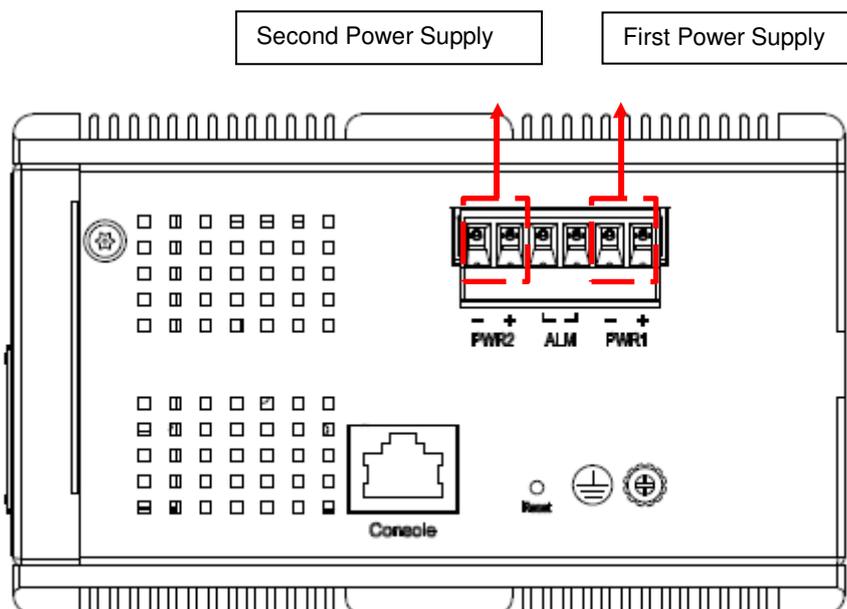
**DANGER:** Never attempt to view optical connectors that might be emitting laser energy.

Do not power up the laser product without connecting the laser to the optical fiber and putting the dust cover in position, as laser outputs will emit infrared laser light at this point.

### 3.5 Connecting Power Terminal Block

The switch can be powered from two power supplies (input range 12V – 58V). Insert the positive and negative wires into V+ and V- contacts on the terminal block respectively and tighten the wire-clamp screws to prevent the wires from being loosened.

**Note:** The DC power should be connected to a well-fused power supply.

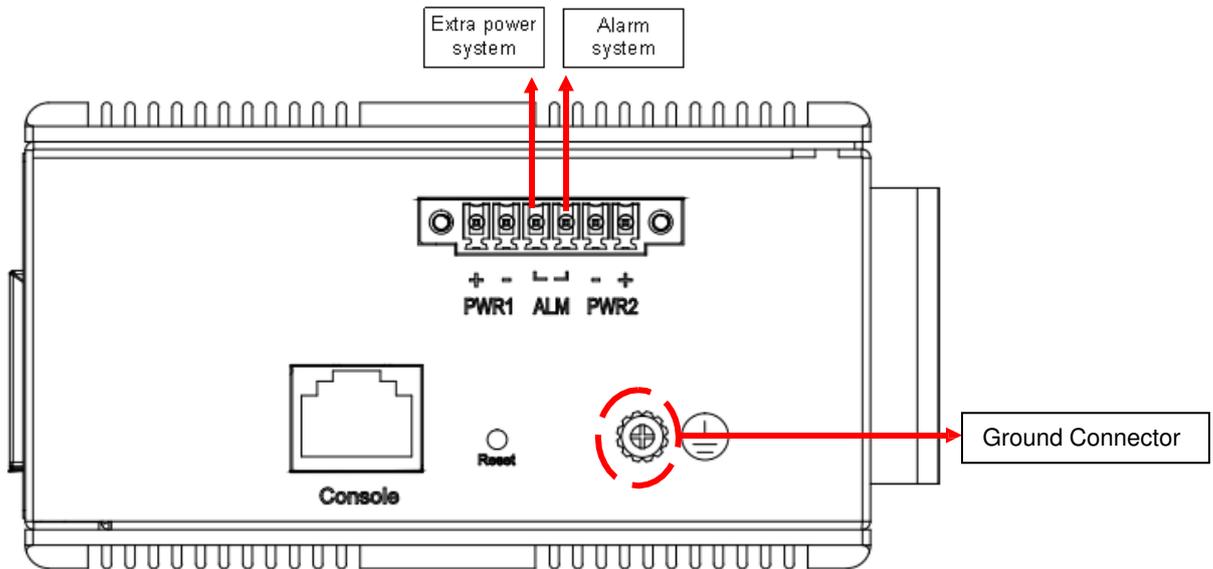


### 3.6 Alarm Relay and Ground

The alarm relay output contacts are in the middle of the DC terminal block connector as shown in the figure below.

The alarm relay out is “Normal Open”, and it will be closed when detected any predefined failure such as power failures or Ethernet link failures.

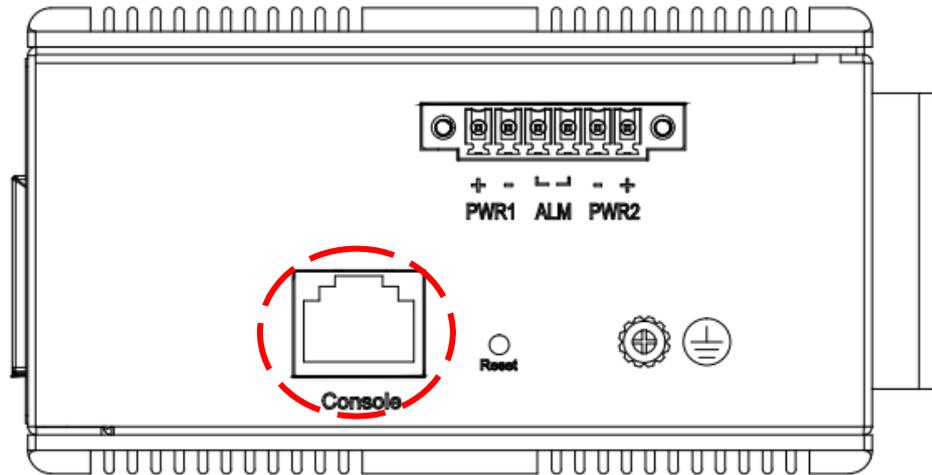
The relay output with current carrying capacity of 0.5A @ 24 VDC



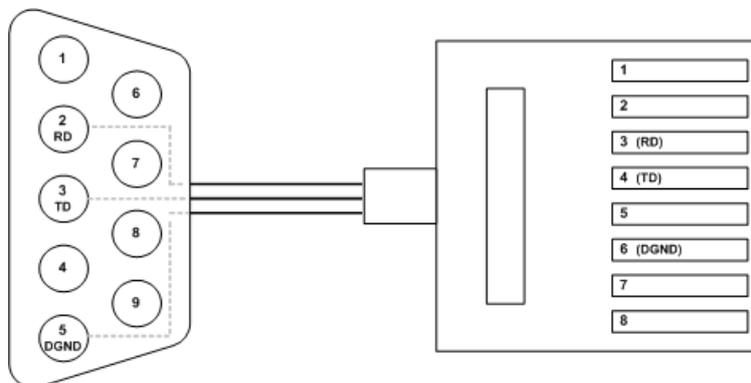
### 3.7 Console Connection

The Console port is for local management by using a terminal emulator or a computer with terminal emulation software.

- DB9 connector connect to computer COM port
- Baud rate: 115200bps
- 8 data bits, 1 stop bit
- None Priority
- None flow control



To connect the host PC to the console port, a RJ45 (male) connector-to-RS232 DB9 (female) connector cable is required. The RJ45 connector of the cable is connected to the CID port of DG-IS45xxHP; the DB9 connector of the cable is connected to the PC COM port. The pin assignment of the console cable is shown below:



There is a console port on POE switch. This section explains the features and usage of the port.

### 3.8 Connect & Login to Managed Switch

- Connecting to the Ethernet port (RJ45 Ethernet port) of Managed Switch.
- Factory default IP: 192.0.2.1
- Login with default account and password.
- Username: admin Password: (none)

### 3.9 CLI Initialization & Configuration (Optional)

- Connecting to the Ethernet port(RJ45 Ethernet port) of Managed Switch
- Key-in the command under Telnet: telnet 192.0.2.1
- Login with default account and password.
- Username: admin Password: (none)
- Change the IP with commands listed below: CLI Command:

```
enable

configure terminal
interface vlan 1

ip      address      xxx.xxx.xxx.xxx
xxx.xxx.xxx.xxx exit
```

## Chapter 4 Hardware Troubleshooting

### 4.1 Trouble analyzing

The key to troubleshooting is to separate trouble from the system. By analyzing what system should do and what system is doing, troubleshooting becomes easy. Think of the following systems while analyzing troubles:

- ✧ Power and cooling system—Power and cooling fan;
- ✧ Ports, cables and connections—ports on the front panel of the switch and cables connected to the ports.

#### 4.1.1 Power and cooling system breakdown

Examine the following conditions to separate troubles:

- ✧ The power is “ON”. Make sure the cooling fan is working normally. If cooling fan is not working normally, check the fan;
- ✧ Examine the environment. The switch cannot be overheated. Make sure the inhale and exhale hole of the switch is clean. Refer to “General Requirement for Working Environment”. The temperature of the switch working environment is 0-40°C (32-104 °F).
- ✧ If switch is not working and “PWR” indicator is not light, check the power supply.

#### 4.1.2 Ports, cables and connections breakdown

To separate problems, check the follow status:

- ✧ If switch port is unable to link, check the connection. Make sure the connection is normal;
- ✧ If the power is “ON”, check the power supply and power cord;
- ✧ If the system is working but the console port is not, make sure the console port configurations are as follows: 115200 baud rate, 8-bit data bit, no parity bit, 1 stop bit and no flow control.

## 4.2 LED Status Indication

LEDs indicates what switches are doing. POE switch LED and functions are as follows:

LED Name	Indicator/color	Condition
P1/P2	On Green	P1/P2 power line has power
	Off	P1/P2 power line disconnect or does not have power
Alarm	On Red	Ethernet link fails, alarm or power failure alarm occurs
	Off	No Ethernet link fails and no power failure alarm
Copper port Link/Act	On Green	Ethernet link up but no traffic is detected
	Flashing Green	Ethernet link up and there is traffic detected
	Off	Ethernet link down
Copper port Speed	On Yellow	A 1000Mbps connection is detected
	Off	No link, a 10Mbps or 100 Mbps connection is detected
SFP port Link/Act	On Green	Ethernet link up
	Off	Ethernet link down
SFP port Speed	On Yellow	SFP port speed 1000Mbps connection is detected.
	Off	No link or a SFP port speed 100Mbps connection is detected
POE LED	On Yellow	POE is detected
	Off	No link