

DGS-1008P

8-PORT GIGABIT DESKTOP SWITCH WITH 4 PoE PORTS

USER GUIDE



FCC Warning

This equipment has been tested and found to comply with the regulations for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Warning

This is a product of VCCI Class B Compliance.

注意

この装置は、情報処理装置等電波障害自主規制協議(VCCI)の基準に基づくクラス B 情報技術装置です。

この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

UL Warning

a) Elevated Operating Ambient Temperature- 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 manufacturer's maximum rated ambient temperature (Tmra).

b) 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.

c) Mechanical Loading- mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

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

e) Reliable Earthing- Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

f) The Installation instructions clearly state that the ITE is to be connected only to POE networks without routing to the outside plant.

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About This Guide

This guide provides instructions to install the D-Link 8-port Gigabit Ethernet PoE Switch DGS-1008P.

Terms/Usage

In this guide, the term “Switch” (first letter capitalized) refers to the DGS-1008P, and “switch” (first letter lower case) refers to other Ethernet switches. Some technologies refer to terms “switch”, “bridge” and “switching hubs” interchangeably, and both are commonly accepted for Ethernet switches.



A **NOTE** indicates important information that helps a better use of the device.



A **CAUTION** indicates potential property damage or personal injury.

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1 Product Introduction

The DGS-1008P Switch provides 8 Gigabit Ethernet ports, of which 4 ports supporting Power over Ethernet (PoE) for PoE applications such as wireless Access Points (APs), IP cameras, and IP phones, and the other 4 ports without PoE for computers, printers and Network Attached Storage (NAS) onto a network. With wirespeed Gigabit capacity, DGS-1008P provides non-blocking switching for both home and office environment.

IEEE 802.3af Power over Ethernet

The first 4 ports of the DGS-1008P support the IEEE 802.3af PoE protocol. Each of the 4 ports can supply 48V, up to 15.4 watts power to the IEEE 802.3af-compliant Powered Device (PD) directly. It minimizes the clutter of extra cables making the network deployment more easily especially when device are far from power outlets.

Easy to Use, Safe and Excellent Performance

DGS-1008P is a Plug-and-Play device that requires no configuration. It supports auto-MDI/MDI-X on all ports, and eliminates the need of crossover cables for connection to another switches or hubs. Auto-Negotiation on each port senses the link speed (either 10, 100 or 1000M) of a network device and intelligently adjusts the compatibility and optimal performance. Fanless design extends the product life time and also reduces the noise when operating. DGS-1008P also features diagnostic LEDs, which display the status and activity, allowing you to quickly detect and correct problems on the device.

DGS-1008P features many safety functions to prevent the unexpected overloading of the PoE power. The Switch will cut off the power feed immediately when any error is detected, protecting both the PoE device and the Switch from damage.

The Gigabit PoE ports provide a larger bandwidth for high speed network applications, especially IEEE802.11n AP, high resolution video cameras, and phones. Combining the convenience of PoE, superior performance, and ease of use, DGS-1008P is the ideal PoE solution for both home and small business networks.

Product Outlook

Front Panel

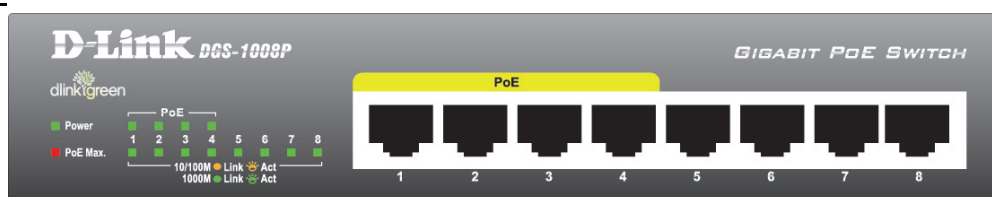


Figure 1 – DGS-1008P Front Panel

Power: The Power LED lights up when the Switch is connected to a power source.

PoE Max: The PoE Max LED lights up in red when the total PoE output of the Switch is over 45 watts. In the mean time, no additional PoE device can be supported. When the user unplugs a Powered Device (PD) from the DGS-1008P and lowering the total PoE output less than 45 watts, the PoE Max LED will keep blinking for 2 minutes. In the mean time, an additional PD is possible to be supported.

Port PoE LED (1-4): When the Port PoE LED glows green, it indicates that the port is feeding power to the PD. When the Port PoE LED glows red, it indicates that the power feeding failed, possibly because:

- PoE total power budget shortage.
- Over current: Over the power current of PD's classification.
- Short circuit: When PD is performing as "Short Circuit", causing short current.

Port Link/Act/Speed LED (1-8): The Port LED indicates the link status of corresponding ports. Blinking indicates that the Switch is either sending or receiving data to the port. When the port LED glows in amber, it indicates that the port is running on 10M or 100M. When the port LED glows in green, it is running on 1000Mbps.

Rear Panel

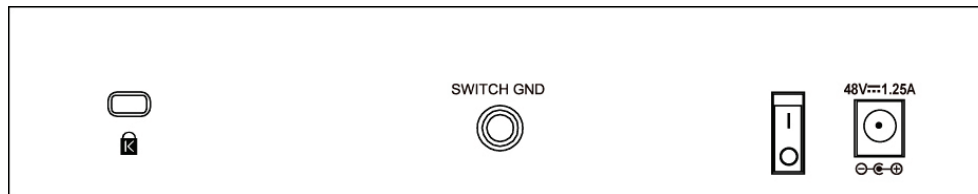


Figure 2 – DGS-1008P Rear Panel

DC Power Jack: Connect to the power adapter.

Power Switch: Use to turn on/off the Switch.



• Kensington Security Slot

DGS-1008P has been giving customers the best option for physical security through a Kensington Security Slot in the rear panel. The Kensington Security Slot adds value to DGS-1008P by offering customers a simple, built-in security solution.

Grounding the Switch

This section describes how to connect the switch to ground. You must complete this procedure before powering your switch.

Required Tools and Equipment

- Ground screws (included in the accessory kit): One M4 x 6 mm (metric) pan-head screw
- Ground cable (not included in the accessory kit): The grounding cable should be sized according to local and national installation requirements. Depending on the power supply and system, a 12 to 6 AWG copper conductor is required for U.S installation. Commercially available 6 AWG wire is recommended. The length of the cable depends on the proximity of the switch to proper grounding facilities.
- A screwdriver (not included in the accessory kit)

The following steps let you connect the switch to a protective ground:

Step 1: Verify if the system power is off.

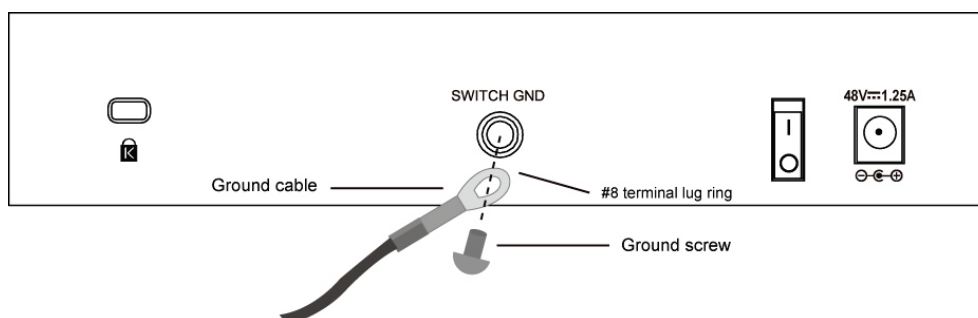
Step 2: Use the ground cable to place the #8 terminal lug ring on top of the ground-screw opening, as seen in the figure below.

Step 3: Insert the ground screw into the ground-screw opening.

Step 4: Using a screwdriver, tighten the ground screw to secure the ground cable to the switch.

Step 5: Attach the terminal lug ring at the other end of the grounding cable to an appropriate grounding stud or bolt on rack where the switch is installed.

Step 6: Verify if the connections at the ground connector on the switch and the rack are securely attached.



2 *Hardware Installation*

This chapter provides unpacking and installation information for the D-Link DGS-1008P.

Step 1: Unpacking

Open the shipping carton and carefully unpack the contents. Please consult the packing list located in the User Manual to make sure all items are present and undamaged.

- › One D-Link DGS-1008P device
- › One AC to DC power adapter with power cord
- › One Multi-lingual Quick Installation Guide

If any item is found missing or damaged, please contact the local retail for replacement.

Step 2: Switch Installation

For safe switch installation and operation, it is recommended that you:

- › Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.
- › Make sure that there is proper heat dissipation and adequate ventilation around the switch.
- › Install the Switch in a site free from strong electromagnetic source, vibration, dust, and direct sunlight.
- › Do not place heavy objects on the switch.

Step 4 – Power on the Switch

Connect the switch to the power outlet and then turn the power switch on to activate the switch.

3 Understanding The Switch Features

Cable Diagnostics

DGS-1008P will scan all ports when device booting up. The diagnosis results will be displayed by port LED at the first 1 second after port scan finished. And following are the explanation of the result:

- Solid Green: A Gigabit connection is detected and the cable is good.
- Solid Amber: No connection, bad cable or 10/100M connection is detected.

The quality of cables will impact the diagnosis results. A Gigabit connection may lower to 10/100M due to wrong or bad quality Ethernet cables. Twisted pair Cat 5, 5e or better cable is required for Gigabit Ethernet.

PoE Rule

DGS-1008P supports many PoE features to guarantee the safety and stability of PoE power supply.

PoE Power Budget: DGS-1008P has set a limitation of maximum PoE power supply at 52 Watts to protect the Switch and to stabilize the power transmitting to the PoE devices.

Priority: DGS-1008P has pre-defined the PoE priority for PoE ports to prevent unexpected overloading situation from happening. Lower port numbers have higher priorities for power feeding. (Port 1 > Port 2 > Port 3 > Port 4). When PoE overload is detected, the power supply of higher port numbers will be cut off first.

Guard Band: DGS-1008P has reserved a 7 watts Guard Band to prevent the power supply from exceeding the PoE Power Budget. When the Switch detects the current PoE output has reached 45 watts, the Power Max LED will light up and the Switch will check the priority of each PoE port. In the mean time, if a new PoE device is connected, the Switch will cut off the power of the port with higher port number.

For example: When Port 2~4 are all feeding 15.4 watts power to the clients (total PoE power used = 46.2 watts), and a new PoE device is connected to port 1, the power of port 4 will be cut off.

QoS

DGS-1008P supports 4 levels of transmission queue that guarantees the important traffic will always be transmitted first. The Switch will check the priority tags in the packets and map them into corresponding queue levels. Below are the mapping rules:

For DSCP tag:

DSCP value 0-15 map to Queue 0 (Lowest priority queue)

DSCP value 16-31 map to Queue 1

DSCP value 32-47 map to Queue 2

DSCP value 48-63 map to Queue 3 (Highest priority queue)

For 802.1p tag:

Priority value 1 and 2 map to Queue 0 (Lowest priority queue)

No 802.1p tag or priority value 3 map to Queue 1

Priority value 4 and 5 map to Queue 2

Priority value 6 and 7 map to Queue 3 (Highest priority queue)

If a packet has both DSCP and 802.1p tags, the DSCP tag will be mapped.

Power Saving

DGS-1008P supports 2 power saving modes of Ethernet ports. The switch ports will auto detect the status of the link and activate the power saving function automatically.

Power Saving by Link Status: Drastically save power when the switch port link is down. For example, when there are no PC connections or the connected PC is powered off.

Power Saving by Cable Length: Detects the length of connected RJ-45 cables and adjusts power usage accordingly without affecting performance. When the RJ-45 connection is less than 10m, the switch will reduce the power output instead of using full power, which is only needed for 100m cables.

Appendix A - Technical Specifications

Hardware Specifications

Key Components / Performance

- › Switching Capacity: 16Gbps
- › Max. Forwarding Rate: 11.90Mpps
- › Forwarding Mode: Store and Forward
- › Packet Buffer memory: 192K Bytes

PoE Features

- › IEEE 802.3af compliant
- › Supplies up to 15.4 watts power to Powered Device via port 1~4.
- › Total PoE budget: 52 watts, average 13 watts per PoE port.

Port Functions

- › 8 10/100/1000Base-T ports compliant with the following standards:
 - IEEE 802.3
 - IEEE 802.3u
 - IEEE 802.3x (Full-duplex flow control)
 - IEEE 802.3ab
 - IEEE 802.3af (Port 1~4)
 - Support backpressure in half duplex mode

Physical & Environment

- › Dimensions: 190 x 120 x 38 mm
- › Power adapter AC input: 100~240 VAC, 50/60Hz
- › Device DC input: 48VDC, 1.25A
- › Acoustic: 0dB (Fan-less)
- › Operation Temperature
 - Device: 0~50°C
 - Power Adapter: 0~40°C
- › Storage Temperature -40~70°C
- › Operation Humidity: 0%~95% RH
- › Storage Humidity: 0%~95% RH

Emission (EMI) Certifications

- › FCC class B
- › CE Class B
- › VCCI Class B
- › C-Tick

Safety Certifications

- › cUL, LVD

Features

General Features

- › Supports up to 4K MAC address
- › Jumbo frame: Supports up to 9,720 bytes
- › 4 strict queues support CoS & DSCP
Function Queue Weight 1 : 2 : 4 : 8
- › Cable Diagnostics

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