D-Link®

Building Networks for People

DES-1018P

8 Ports 10/100Mbps PoE + 8 Ports 10/100Mbps +
2 10/100/1000BASE-T/SFP Combo Ports Unmanaged Switch

DES-1018MP

16 Ports 10/100Mbps PoE + 2 10/100/1000BASE-T/SFP
Combo Ports Unmanaged Switch

USER GUIDE

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class A 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 A 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

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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- capitalize 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.

Table of Contents

About This Guide

This guide provides instructions to install the D-Link DES-1018P/MP switches.

Terms/Usage

In this guide, the term "Switch" (first letter capitalized) refers to the DES-1018P/MP, 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 to use the device properly.

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

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1 *Product Introduction*

The DES-1018MP and DES-1018P are unmanaged switches with 16 10/100 Mbps ports and two Gigabit combo uplink ports. The first 8 10/100M ports of DES-1018P and all 16 10/100M ports of DES-1018MP support IEEE 802.3af PoE and are capable of feeding power up to 15.4 watts per port. The DES-1018P/MP switches are easy to install and require no configuration. This simplicity is useful for SOHO and SMB users who have limited budgets but require PoE capability in a switch.
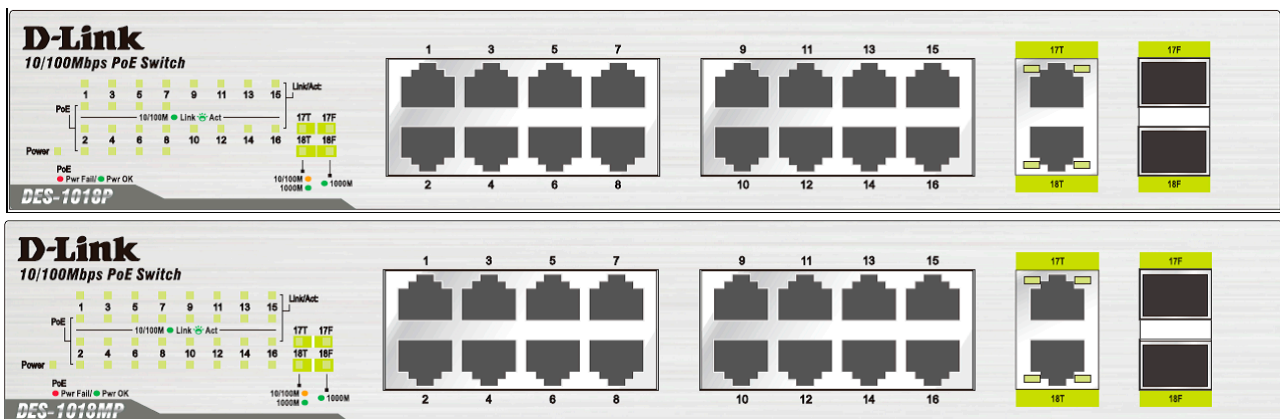
Product Outlook

Front Panel

Figure 1 – DES-1018P/MP Front Panel

LEDs

LED	Color	Status	Description
Power	Green	Solid light	Power on
		Off	Power off
Link/Act/Speed 10/100/1000BASE-T/SFP Ports (Ports 17 to 18)	Green	Solid light	Secure connection to a 1000 Mbps Ethernet device is established.
		Blinking	The port is receiving or transmitting data.
	Amber	Solid light	Secure connection to a 10/100 Mbps Ethernet device.
		Blinking	The port is receiving or transmitting data.
	Off	Light off	No link

Link/Act/Speed 10/100 Mbps Ports (Ports 1 to 16)	Green	Solid light	When there is a secure connection (or link) to 10/100 Mbps Ethernet device at any of the ports.
		Blinking	When there is reception or transmission of data occurring at 10/100 Mbps.
	Off	Off	No link
PoE Ports 1 to 8 for DES-1018P Ports 1 to 16 for DES-1018MP	Green	Solid light	The port is successfully connected to a PoE device and is powering the device properly.
	Red	Solid light	The PoE port has failed, possibly due to: 1. PoE total power budget shortage. 2. Over current: Exceeds the power current of powered device's classification. 3. Short circuit: An intentional short circuit has been performed on a powered device.
	Off	Light off	No connection to a PoE device

Rear Panel

Figure 2 – DES-1018P/MP Rear Panels

Power Cord Input: Connects the power cord.
Power Cord Retainer Slot: Connects the power cord retainer to the unit.
Switch GND: Connect a grounding wire to electrically ground the unit.

• **Kensington Security Slot**

DES-1018P/MP 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 DES-1018P/MP 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 on 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:

1. Verify if the system power is off.
2. Use the ground cable to place the #8 terminal lug ring on top of the ground-screw opening.
3. Insert the ground screw into the ground-screw opening.
4. Using a screwdriver, tighten the ground screw to secure the ground cable to the Switch.
5. Attach the terminal lug ring at the other end of the grounding cable to an appropriate grounding stud or bolt on the rack where the Switch is being installed.
6. Verify if the connections at the ground connector on the Switch and the rack are securely attached.
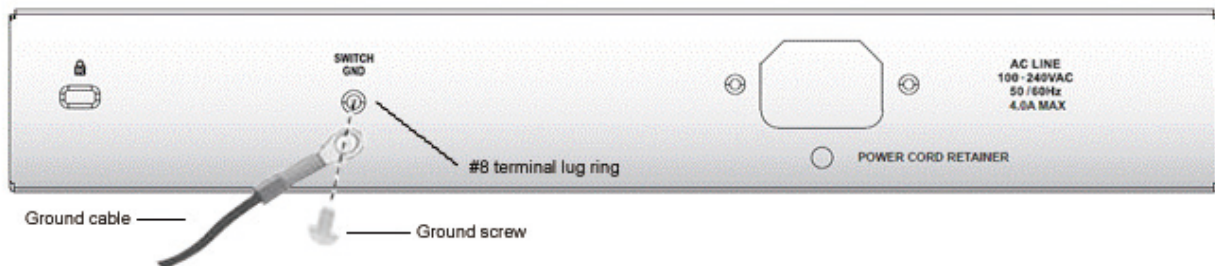
2 *Hardware Installation*

This chapter provides unpacking and installation information for the D-Link DES-1018P/MP.

Step 1: Unpacking

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

- One D-Link DES-1018P/MP device
- One power cord
- One power cord retainer
- One rack-mount kit and rubber feet
- One Multi-lingual Quick Installation Guide

If any item is found missing or damaged, please contact your local retailer for replacement.

Step 2: Switch Installation

Please follow the steps below to set up the Switch:

1. Install the DES-1018P/MP in a cool and dry place. Refer to the Technical Specifications for the acceptable operating temperature and humidity ranges.
2. Install the Switch in a site free from strong electromagnetic source, vibration, dust, and direct sunlight.
3. Leave at least 10 cm of space at the left and right-hand side of the Switch for ventilation.
4. Visually inspect the power jack and make sure that it is fully secured to the power adapter.

Step 3: Mounting the Switch on a Rack

The DES-1018P/MP can easily be mounted on a rack. Two mounting ears are provided for this purpose. Make sure that the front panel is exposed in order to view the LEDs. Please refer to the following illustrations:
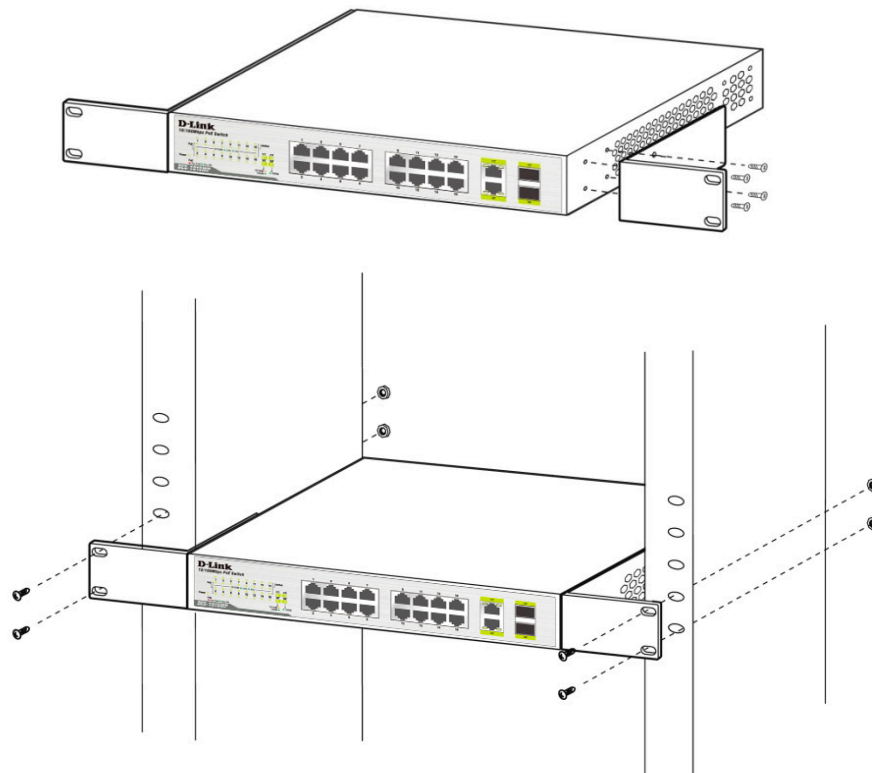

Mounting the Switch to a Rack

1. Attach the ears to each side of the Switch, using the screw-holes located on the side of the device.
2. Firmly attach the ears to the rack as shown. Please follow the usual safety precautions for rack-mountable products.

Attaching the Rubber Feet

Use the provided rubber feet. Position and apply rubber feet to the underside of the DES-1018P/MP Switch.
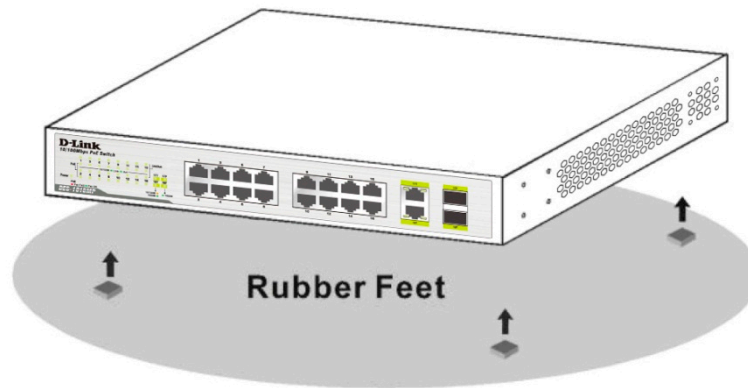
Attaching the Rubber Feet

Provide for Adequate Ventilation

CAUTION: Do not place any devices on top of the Switch, or place the Switch on top of any device or object that will block the free flow of air through the ventilation slots on the sides, top, and bottom of the Switch's case. In addition, care should be taken not to place the Switch next to, on top of, or underneath any device that generates a significant amount of heat. For the Switch to perform at its optimal level, the Switch must have adequate ventilation to prevent the Switch from overheating and becoming damaged.

Step 4: Power on the Switch

To power on the Switch, plug in the female connector of the provided power cord into this socket, and the male side of the cord into a suitable power source.

After the Switch is powered on, the LED indicators will blink briefly while the system resets.

Power Failure

As a precaution, in the event of a power failure, unplug the Switch. When power is resumed, plug the Switch back in.

Step 5: Connecting the Switch

Users can attach IEEE 802.3af compliant devices to the PoE ports on the DES-1018P/MP by plugging in an Ethernet cable.

- *Switch to End Node*
- *Switch to Hub or Switch*
- *Connecting to a Server*

NOTE: All Ethernet ports auto-detect MDI/MDIX, port speed (10, 100, 1000 Mbps) and duplex of the device connected to the Switch.

Cable Quality

For all connections to the Switch, use these rules for cable selection:

- For connections to 10BASE-T and 100BASE-TX devices, use Category 5 or 5e UTP/STP cable.
- For connections to 100BASE-TX and 1000BASE-T devices, use Category 5e or better UTP/STP cable. All 1000BASE-T connections will operate in full duplex mode.

NOTE: UTP (Unshielded Twisted Pair) Ethernet cabling is adequate for most small office environments. More expensive STP (Shielded Twisted Pair) can also be used, but is generally only needed when there will be risk of strong electromagnetic interference due to radio frequencies.

Connect to an End Node

End nodes include PCs outfitted with a 10, 100 or 1000 Mbps RJ-45 Ethernet/Fast Ethernet Network Interface Card (NIC) and Ethernet-ready routers. Use standard Ethernet cables to connect the Switch to end nodes. The Switch port will automatically adjust to the hardware characteristics (MDI/MDIX, speed, duplex) of the device to which it is connected.
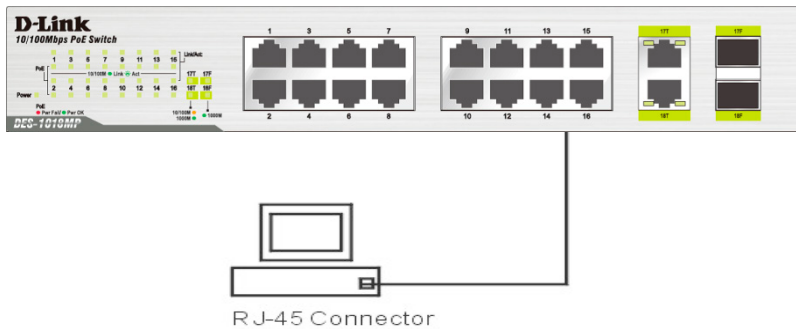
Switch connected to an end node

Observe the guidelines for cable quality stated at the beginning of this section. The **Link/Act/Speed** LEDs for ports 1 to 16 lights green when the link is valid. The LEDs for ports 17 to 18 lights up amber at 10/100 Mbps and green at 1000 Mbps.
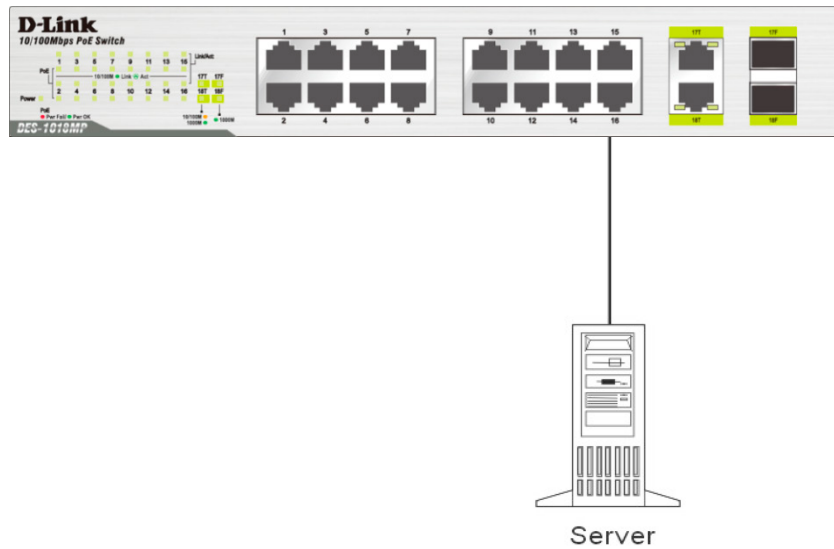
Connect to a Hub or Switch
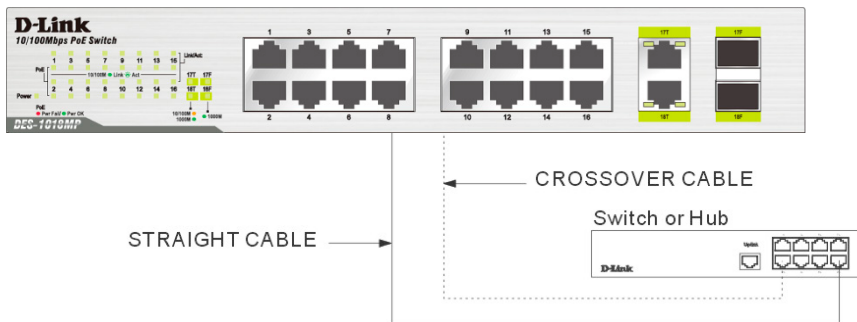
Connect to another switch or hub

8

Observe the guidelines for cable quality stated at the beginning of this section. The **Link/Act/Speed** LEDs for ports 1 to 16 light up green when the link is valid. The LEDs for ports 17 to 18 light up amber at 10/100 Mbps and green at 1000 Mbps.

Connect to Network Backbone or Server

Ports 17 to 18 may be used to uplink the Switch to a network backbone or network server. When linking to a 1000BASE-T device, the port operates in full duplex mode.

Connection to a Server

Observe the guidelines for cable quality stated at the beginning of this section. The **Link/Act/Speed** LEDs for ports 1 to 16 lights green when the link is valid. The LEDs for ports 17 to 18 lights up amber at 10/100 Mbps and green at 1000 Mbps.

3 *Understanding the Switch Features*

PoE Rule

DES-1018P/MP supports many PoE features to guarantee the safety and stability of its PoE power supply.

PoE Power Budget: DES-1018P/MP has set a limitation of maximum PoE power supply at 80/246.4 (DES-1018P/MP) watts to protect the Switch and to stabilize the power being transmitted to the PoE devices.

Guard Band: DES-1018P/MP has reserved a 3-watt Guard Band to prevent the power supply from exceeding the PoE power budget. When the current PoE output has reached 80 or 246.4 watts, the Power Max LED will light up and the Switch will check the priority of each PoE port. In the meantime, if a new PoE device is connected, the Switch will cut off the power of the port with a higher port number.

Power Saving

DES-1018P/MP supports IEEE802.3az Energy Efficient Ethernet, which will constantly detect if there is data being transmitted and will put ports in sleep mode accordingly.

Appendix A - Technical Specifications

Hardware Specifications

Key Components / Performance
- Switching Capacity: 7.2 Gbps
- Max. Forwarding Rate: 5.36 Mpps
- Forwarding Mode: Store-and-forward
- Packet Buffer memory: 384 Kbytes

Port Functions

DES-1018P: 8 10/100 Mbps PoE, 8 10/100 Mbps, and 2 10/100/1000BASE-T/SFP combo ports and DES-1018MP: 16 10/100 Mbps PoE, and 2 10/100/1000BASE-T/SFP combo ports are compliant with the following standards:

- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x (Full-duplex flow control)
- IEEE 802.3z
- IEEE 802.3az
- IEEE 802.3af

Physical & Environment
- Dimensions: 280 mm x 210 mm x 44 mm
- Internal Power Supply AC input: 100~240 VAC, 50/60Hz
- Acoustic: DES-1018P: 38dB, DES-1018MP: 36.8 dB(A) at low speed, 51.8 dB(A) at high speed
- Operation Temperature: 0~40°C
- Storage Temperature: -40~70°C
- Operation Humidity: 0%~95% RH
- Storage Humidity: 0%~95% RH

Emission (EMI) Certifications
- FCC class A
- CE Class A
- VCCI Class A
- C-Tick
- CCC
- BSMI

Safety Certifications
- cUL, LVD
- CB
- CCC
- BSMI

Features

General Features
- Surge protection
- Supports up to 8k MAC addresses

PoE Features
- IEEE 802.3af compliant
- Supplies up to 15.4 watts power per port.
- Total PoE budget: 80 watts (DES-1018P), 246.4 watts (DES-1018MP) per PoE port.