D-Link®

DES-1005P
5-Port 10/100Mbps with 1-Port PoE Unmanaged Switch

Manual



RECYCLABLE

V1.00

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Congratulations on your purchase of the D-Link DES-1005P. This device integrates 100Mbps Fast Ethernet and 10Mbps Ethernet network capabilities in a highly flexible package. Port-1 on the switch supports Power over Ethernet (PoE), meaning it will automatically detect the presence of an IEEE 802.3af-compliant powered device (PD) and provide power through the port. The switch provides up to 15.4 W per PoE port and can be used to power WLAN access points, IP phones, video cameras, and other PD devices. The Switch will automatically detect the network appliance's requirements, and will supply the required power to each appliance accordingly.

Purpose

This manual will familiarize you with the DES-1005P and guide you through the installation process.

Fast Ethernet Technology

The growing importance of LANs and the increasing complexity of desktop computing applications are fueling the need for high performance networks. A number of high-speed LAN technologies have been proposed to provide greater bandwidth and improve client/server response times. Among them, 100BASE-TX (Fast Ethernet) provides a non-disruptive, smooth evolution from the current 10BASE-T technology.

100Mbps Fast Ethernet is a standard specified by the IEEE 802.3 LAN committee. It is an extension of the 10Mbps Ethernet standard with the ability to transmit and receive data at 100Mbps, while maintaining the CSMA/CD Ethernet protocol. Since the 100Mbps Fast Ethernet is compatible with all other 10Mbps Ethernet environments, it provides a straightforward upgrade and takes advantage of the existing investment in hardware, software, and personnel training.

Switching Technology

Switching is a cost-effective way of increasing the total network capacity available to users on a local area network. A switch increases capacity and decreases network loading by dividing a local area network into different segments, which don't compete with each other for network transmission capacity.

The switch acts as a high-speed selective bridge between the individual segments. The switch, without interfering with any other segments, automatically forwards traffic that needs to go from one segment to another. By doing this the total network capacity is multiplied, while still maintaining the same network cabling and adapter cards.

Switching LAN technology is a marked improvement over the previous generation of network bridges, which were characterized by higher latencies. Routers have also been used to segment local area networks, but the cost of a router, the setup and maintenance required make routers relatively impractical. Today switches are an ideal solution to most kinds of local area network congestion problems.

Power over Ethernet (PoE)

Power over Ethernet (PoE) integrates power and data onto one single cabling infrastructure, eliminating the need to have AC power available at all locations.

Power and Data is integrated onto the same cable, supporting category 5/5e up to 100 Meters. PoE will provide power to PoE compatible devices, such as IP telephones, wireless LAN access points and IP security cameras.

PoE is already widely adopted in the market, saving up to 50% of overall installation costs by eliminating the need to install separate electrical wiring and power outlets.

Features

- 5 ×10/100Mbps Auto-negotiation Fast Ethernet RJ45 ports with 1-port PoE function (port-1)
- Compliant with 802.3af specification
- Supports PoE power up to 15.4W for PoE port
- Supports PoE IEEE802.3af compliant Powered Device (PD)
- Each port supports auto MDI/MDIX, so there is no need to use cross-over cables
- Full/half duplex transfer mode for each port
- Wire speed reception and transmission
- 64KBytes packet buffer
- Supports IEEE 802.3x flow control for full-duplex mode ports
- Supports Back-pressure flow control for half-duplex mode ports

Unpacking

Open the box and carefully unpack it. The box should contain the following items:

- One DES-1005P
- One External Power Adapter
- Wall Mount Kit
- Four rubber feet
- Quick Installation Guide

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

Setup

The setup of the DES-1005P can be performed using the following steps:

- The power outlet should be within 1.82 meters (6 feet) of the Switch.
- Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.
- Do not cover the ventilation holes on the sides of the Switch, and make sure there is adequate ventilation around it.
- Do not place heavy objects on the switch.

Connecting Network Cable

The Switch support 5 10/100Mbps Ethernet ports and Port 1 PoE Enabled port, the PoE port will automatically activate when a compatible terminal is identified. The Switch will supply power through the Ethernet port to the connected PoE powered device (PD).

For legacy devices that are not compatible, the PoE port will not offer power to this device. This feature allows users to freely and safely mix legacy and Power over LAN compatible devices on their network.

The Switch supports 10Mbps Ethernet or 100Mbps Fast Ethernet and it runs both in half and full duplex mode using two pair of Category 5 cable.

These RJ45 ports are Auto-MDI type port. The Switch can auto negotiate to MDI-II or MDI-X type, so you can connect any RJ-45 cable regardless if it is a standard or crossover cable.

Front Panel

The figure below shows the front panels of the DES-1005P.



Figure 1. Front panel

- **Power LED Indicator:**
  This green indicator light is on when the DES-1005P is receiving power; otherwise, it is off.

- **Ethernet Ports (Port 1~5):**
  These ports support network speeds of either 10Mbps or 100Mbps, and can operate in half- and full- duplex transfer modes. These ports also support automatic MDI/MDIX crossover detection, which gives the Switch true, "plug and play" capabilities. Just connect any network cable between the Switch and the device, and The Switch will automatically detect the settings of the device and adjust itself accordingly.

- **PoE Port (Port 1 only):**
  The PoE port will automatically activate when a compatible terminal is identified. The Switch will supply power through the Ethernet port to the connected PoE device.

  For legacy devices that are not compatible, the PoE port will not offer the power to this device. This feature allows users to freely and safely mix legacy and PoE compatible devices on the network.

Rear Panel

The figure below shows the front panels of the DES-1005P.



Figure 2. Rear panel

- **DC Power Jack:** Connect to the power adapter
- **Power Switch:** Use to turn on/off the Switch

The front panel LEDs provides instant status feedback, and helps monitor and troubleshoot when needed.

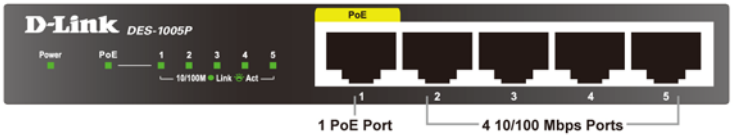


Figure 3. LED indicators of the Switch

System LED

LED Indicators

LED Indicative	Color	Status	Description
Power (per device)	Green	Solid Light	Power on
		Off Light	Power off
Link/Act (per port)	Green	Solid light	When there is a secure connection (or link) to device at any of the ports.
		Blinking	When there is reception or transmission occurring at any of the ports.
		Off	No link

PoE LED Indicators

Location	LED Indicative	Color	Status	Description
PoE Port	**PoE Status**	Green	Solid Light	When the PoE powered device (PD) is connected and the port supplies power successfully.
		Green	Blinking	Overload/Short circuit occurred. PSE will turn off power and blink the LED 2 seconds. After 2s, LED will be off. PSE will auto-recovery within 5s after turn off power.
		Off	Light Off	No Powered Device (PD) connected.

PoE Rule

1. Supplies power to PD device, meeting IEEE802.3af standards. It is able to provide power to PD devices more sufficiently.
2. Auto discovery feature, automatically recognize the connection of PD device and immediately sends power to it
3. Active circuit protection, automatically disables the port if there is a short while other ports remain active
4. Auto disable port via two different methods as below:

   a. Over Current Protection

      - 802.3af mode: if the current is over 375mA while other ports remain active, the port will be auto disabled.

   b. Over Output Power Limit

      - 802.3af mode: if the port is over 15.4W while other ports remain active, the lower priority port will be auto disabled.

5. DES-1005P should follow the standard PSE pin-out standard of Alternative A which is sending out power over number 1,2,3,6 pins of 8 wires of CAT5 UTP cable
6. DES-1005P works with all D-Link 802.3af devices DES-1005P works with all non-802.3af capable D-Link AP, IP Cam and IP phone via DWL-P50

MOUNTING THE SWITCH ON A WALL

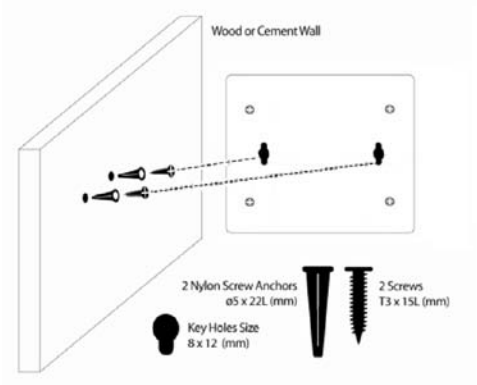
The DES-1005P can also be mounted on a wall. Two mounting slots are provided on the bottom of the switch for this purpose. Please make sure that the front panel is exposed in order to view the LEDs. Please refer to the illustration below:

A.) Mounting on a cement wall

1. Mount the Nylon screw anchors into a cement wall.
2. Drive the T3 x 15L screws into the Nylon screw anchors.
3. Hook the mounting holes of the switch back on the screws; you have completed the wall-mount.

B.) Mounting on a wood wall

1. Drive the T3 x 15 L screws into the wood wall.
2. Hook the mounting holes of the switch back on the screws; you have completed the wall-mount.



(1) 3/4 inch minimum for wood wall

(2) 3 inch minimum for cement wall.

C.) Mounting on a metal wall

1. Mount the magnetic base screws (optional) onto the mounting holes of the switch.
2. Attach the switch to a metallic surface.
3. The magnet kit is optional and is not included in the package contents.

TECHNICAL SPECIFICATIONS

General	
Standards	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3x Full Duplex Flow Control IEEE 802.3af Power over Ethernet
Protocol	CSMA/CD
Data Transfer Rate	Ethernet: 10Mbps (half duplex), 20Mbps (full-duplex) Fast Ethernet: 100Mbps (half duplex), 200Mbps (full-duplex)
Topology	Star
Network Cables	10BASET: 2-pair UTP Cat. 3, 4, 5; up to 100m 100BASE-TX: 2-pair UTP Cat. 5; up to 100m
Number of Ports	5 × 10/100Mbps Auto-MDIX RJ45 ports with POE enabled (port 1)
Physical and Environmental	
DC inputs	48VDC/0.5A
Power Consumption	• Maximum: (PoE off. No Powered Devices connected) • DC input: 2.05 Watts • AC input: 2.7 Watts • Maximum: (PoE on. While consuming all 15.4W power budget) • DC input: 17.29 Watts • AC input: 20.2 Watts
Temperature	Operating: 0° ~ 40° C, Storage: -40° ~ 70° C
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Dimensions	5.5 x 3.3 x 1.1 inches
EMI:	FCC Class B, CE Class B
Safety:	UL/LVD

Performance	
RAM Buffer:	64K bytes per device
Filtering Address Table:	1K entries per device
Packet Filtering/Forwarding Rate:	10Mbps Ethernet: 14,880/pps 100Mbps Fast Ethernet: 148,800/pps
MAC Address Learning:	Automatic update
Transmits Method:	Store-and-forward