



# DES-1016R+/DES-1024R+ 10/100 Fast Ethernet Switch

## *Manual*

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RECYCLABLE

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## ***FEATURES***

- ◆ 16 or 24 UTP ports all come with NWay auto-negotiation and operate at 10/100 Mbps for connection to servers and hubs. All ports can auto-negotiate for full or half-duplex operation.
- ◆ All ports support auto MDI/MDIX, so there is no need to use cross-over cables or an up-link port.
- ◆ Store-and-forward switching scheme capability to support rate adaptation and ensure data integrity.
- ◆ Auto-polarity detection for correction of incorrect polarity on the receive twisted pair at each port.
- ◆ Data forwarding rate 148,810 pps per port at 100% of wire-speed for 100Mbps speed.
- ◆ Data forwarding rate 14,880 pps per port at 100% of wire-speed for 10Mbps speed.
- ◆ Data filtering rate eliminates all error packets, runts, etc. at 148,810 pps per port at 100% of wire-speed for 100Mbps speed.
- ◆ Data filtering rate eliminates all error packets, runts, etc. at 14,880 pps per port at 100% of wire-speed for 10Mbps speed.
- ◆ Up to 4K unicast address entities per device, self-learning, and table aging.
- ◆ Embedded 256K Bytes packet buffer.
- ◆ All 16 or 24 UTP ports support IEEE802.3x flow control for full duplex and backpressure flow control for half duplex.
- ◆ Optional two-port Fiber module (SC type connector) in the front panel for length extension. These two ports operate at 100M full duplex. Please see Chapter Two for additional information about module settings.

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## ***UNPACKING AND SETUP***

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### **Unpacking**

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Open the shipping carton of the Switch and carefully unpack its contents. The carton should contain the following items:

- ◆ One DES-1016R+ or DES-1024R+ 10/100 Fast Ethernet Switch
- ◆ One AC power cord
- ◆ Four rubber feet with adhesive backing
- ◆ Screws and two L-type brackets for rack mounting
- ◆ This Manual

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

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### **Setup**

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The setup of the Switch can be performed using the following steps:

- ◆ The surface must support at least 3 kg for the Switch.
- ◆ The power outlet should be within 1.82 meters (6 feet) of the device.
- ◆ Visually inspect the power cord and see that it is fully secured to the AC power connector.

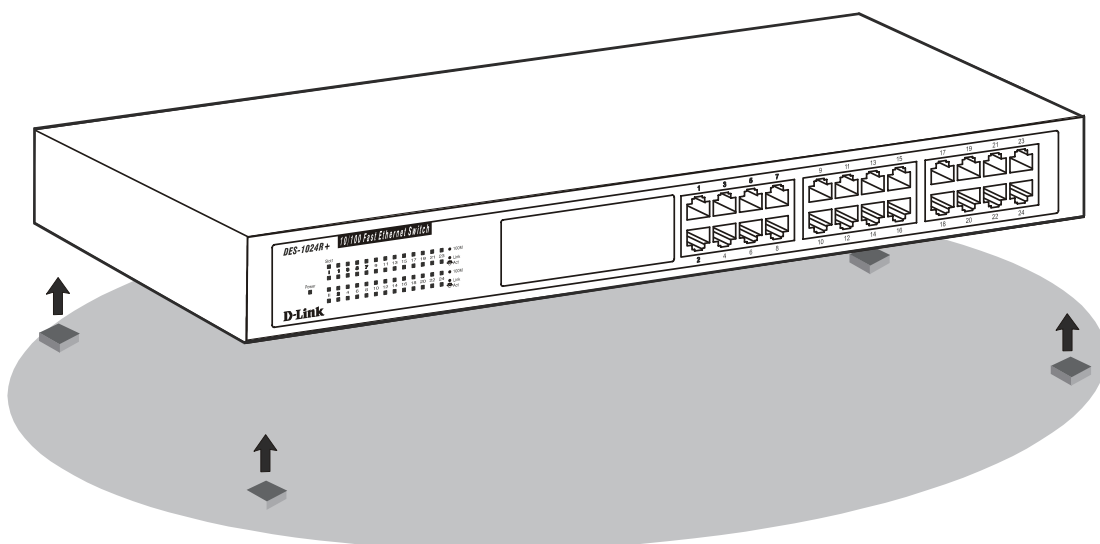
- ◆ Make sure that there is proper heat dissipation from and adequate ventilation around the Switch. Do not place heavy objects on the Switch.

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## Desktop or Shelf Installation

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When installing the Switch on a desktop or shelf, the rubber feet included with the device must be first attached. Attach these cushioning feet on the bottom at each corner of the device. Allow enough ventilation space between the device and the objects around it.



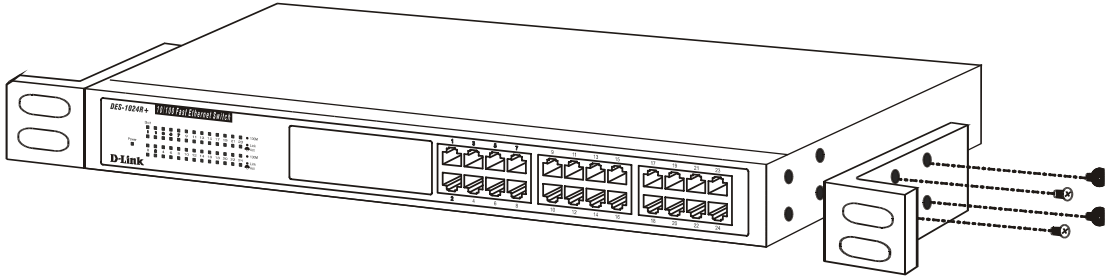
**Figure 2.1 10/100 Fast Ethernet Switch installed on a Desktop or Shelf**

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## Rack Installation

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The Switch can be mounted in an EIA standard size, 19-inch rack, which can be placed in a wiring closet with other equipment. To install, attach the mounting brackets on the switch's front panel (one on each side) and secure them with the screws provided.



**Figure 2.2 Attaching the mounting brackets to the 10/100 Fast Ethernet Switch**

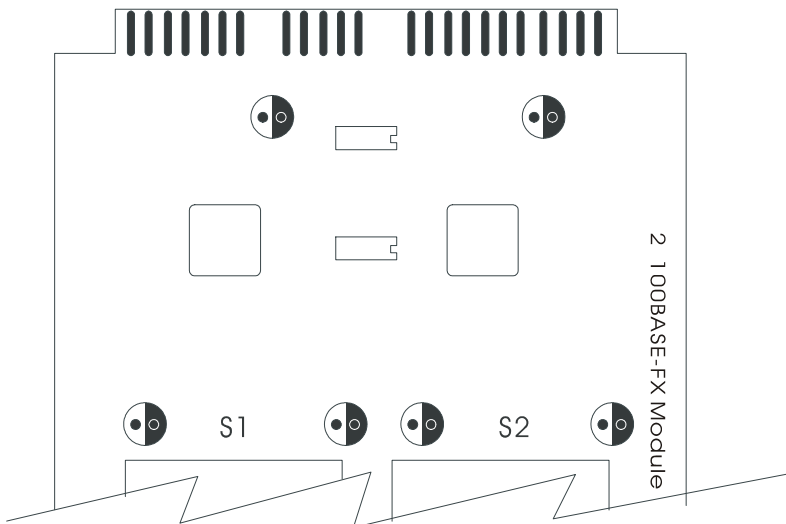
Then, use the screws provided with the equipment rack to mount the Switch in the rack.

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## Module Installation

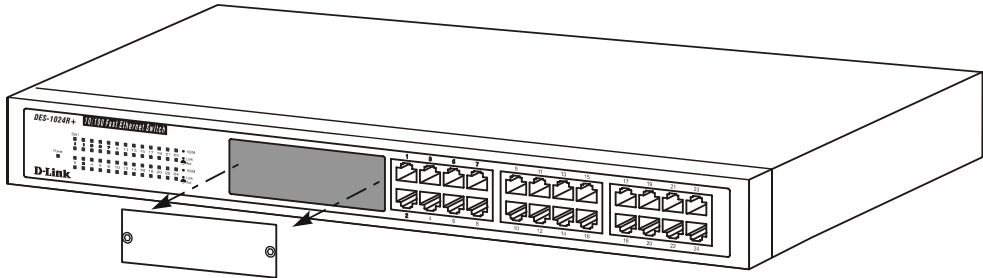
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An optional two-port fiber module (SC type connector) can be installed in the front panel. Follow these steps:



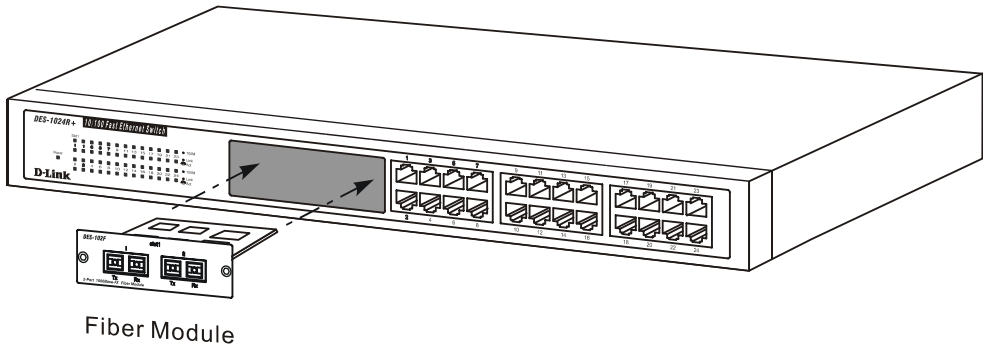
**Figure 2.3 Jumper settings on the module**

First, make sure that the device is powered off and then remove the plain bracket on the front of the switch.



**Figure 2.4 Removing the plain bracket**

After removing the plain bracket, slide the module in the guide rails all the way into the slot and secure the screws.



**Figure 2.5 Sliding the module into position**

When properly installed, the Slot LED will be lit after powering on the Switch (see Chapter 3 for more information about LEDs, including a diagram).

**Note:** Always remember to turn off the power before a module is inserted or removed.

## IDENTIFYING EXTERNAL COMPONENTS

### Front Panel

The front panel of the Switch consists of 16 (DES-1016R+) or 24 (DES-1024R+) 10/100 Mbps MDI/MDI-X ports and LED indicators.

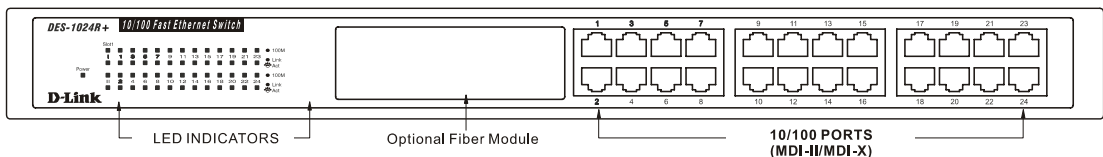


Figure 3.1 Front panel view of the DES-1024R+ Switch

### Rear Panel

The rear panel of the Switch consists of an AC power connector.



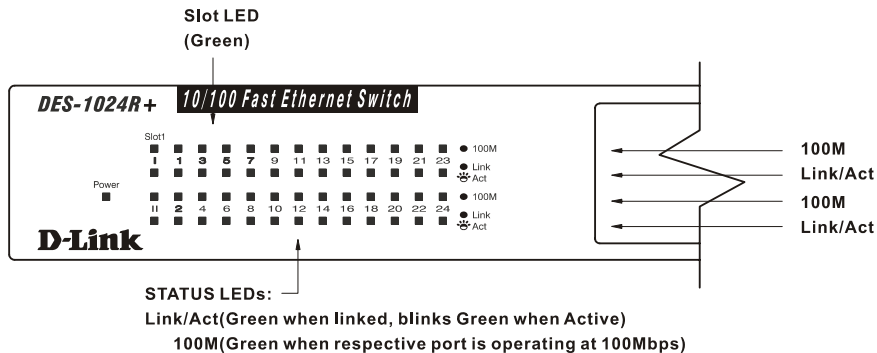
Figure 3.2 Rear panel view of the DES-1024R+ switch

- ◆ **AC Power Connector** This is a three-pronged connector that supports the power cord. Plug in the female connector of the provided power cord into this connector, and the male into a power outlet. Supported input voltages range from 100 ~ 240 VAC at 50 ~ 60 Hz.



## LED Indicators

The LED indicators of the Switch include Power, 100M, Link/Act (Link/Activity), and Slot. The LED indicators are used to facilitate monitoring and troubleshooting of the Switch. The following shows the LED indicators for the Switch along with an explanation of each indicator.



**Figure 3.3 The DES-1024R+ Switch LED indicators**

- ◆ **Power** This indicator operates when the Switch is turned on. If this indicator is not lit, check the AC power connector to ensure proper insertion of the power cord.
- ◆ **100M** The LED indicator lights green when a 100 Mbps device is connected to a respective port. If a 10 Mbps device is connected to a respective port, the LED indicator is OFF.
- ◆ **Link/Act** These LED indicators are lighted green when there is a secure connection (or link) to a device at any of the ports. The LED indicators blink green whenever there is reception or transmission (i.e. Activity—Act) of data occurring at a port.
- ◆ **Slot** This LED indicator is lighted green when there is a secure connection (or link) to an optional two-port 100BASE-FX (SC type) module is installed in the front panel. Each port has its own LED, designated as I and II. See 100M and Link/Act indicator descriptions above for further information.



## **TECHNICAL SPECIFICATIONS**

<b>General</b>	
Network Cabling:	<p><b>10BASE-T:</b> 2-pair UTP Cat. 3, 4, 5 (100m) EIA/TIA- 568 100-ohm STP (100m)</p> <p><b>100BASE-TX:</b> 2-pair UTP Cat. 5 (100m) EIA/TIA-568 100-ohm STP (100m)</p> <p><b>100BASE-FX:</b> Multi-mode (62.5/125µm or 50/125µm) fiber cabling with SC connector</p>
Number of Ports:	<p>DES-1016R+: 16 x 10/100 Mbps ports</p> <p>DES-1024R+: 24 x 10/100 Mbps ports</p> <p>DES-102F: 2 x 100BASE-FX ports</p>
<b>Physical and Environmental</b>	
AC Inputs:	100 - 240 VAC, 50/60 Hz (internal universal power supply)
Power Consumption:	19 watts maximum
Operating Temperature:	0 ° ~ 40 °C
Storage Temperature:	-40 ° ~ 70 °C
Humidity:	5% ~ 95% non-condensing
EMI:	FCC Class A, CE Mark Class A, VCCI Class A
Safety:	CSA International
Dimensions:	441 x 207 x 44 mm (IU), 19-inch rack-mount width
Weight:	DES-1016R+: 2.0 kg & DES-1024R+: 2.1 kg

**FCC Warning**

This equipment has been tested and found to comply with the limits 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 manual, 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 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.

**Warnung!**

Dies ist ein Produkt der Klasse A. Im Wohnbereich kann dieses Produkt Funkstörungen verursachen. In diesem Fall kann vom Benutzer verlangt werden, angemessene Massnahmen zu ergreifen.

**Precaución!**

Este es un producto de Clase A. En un entorno doméstico, puede causar interferencias de radio, en cuyo caso, puede requerirse al usuario para que adopte las medidas adecuadas.

**Attention!**

Ceci est un produit de classe A. Dans un environnement domestique, ce produit pourrait causer des interférences radio, auquel cas l'utilisateur devrait prendre les mesures adéquates.

**Attenzione!**

Il presente prodotto appartiene alla classe A. Se utilizzato in ambiente domestico il prodotto può causare interferenze radio, nel cui caso è possibile che l'utente debba assumere provvedimenti adeguati.

## 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。

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## BSMI Warning

### 警告使用者

這是甲類的資訊產品,在居住的環境中使用時,可能會造成射頻干擾,在這種情況下使用者會被要求採取某些適當的對策