

# NETGEAR®

## Installation Guide

Connect with Innovation™

### ProSafe 16-Port 10/100 Switch with 8-Port PoE FS116P

Estimated installation time: 5–10 minutes



## Package Contents

This package includes:

- ProSafe™ 16-Port 10/100 Switch with 8-Port PoE FS116P
- AC power adapter
- *Installation Guide* (this document)

## Prepare to Install the Switch

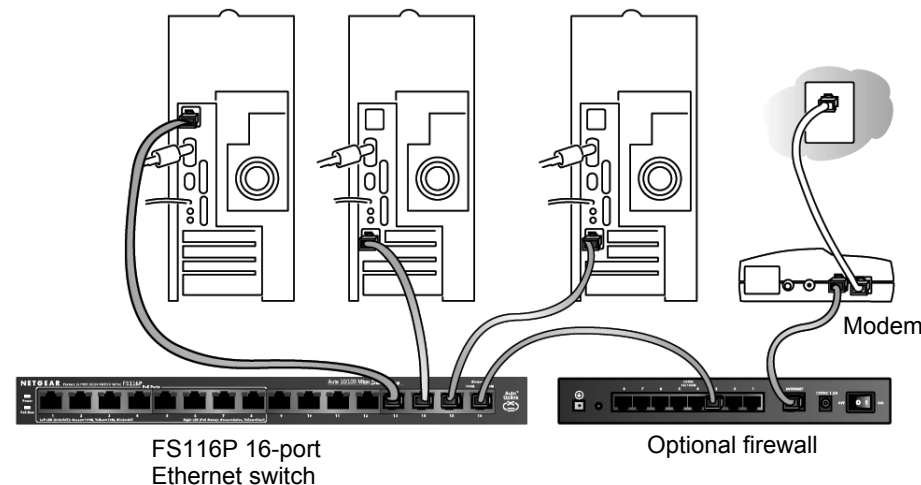
Decide where you want to place the switch. Find a flat horizontal surface such as a table, desk, or shelf. Make sure that the selected location is:

- Not in direct sunlight or near a heater or heating vent.
- Not cluttered or crowded. There must be at least 2 inches (5 cm) of clear space on all sides of the switch.
- Well ventilated (especially if it is in a closet).

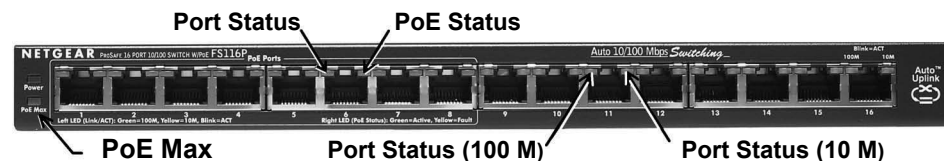
Depending on the speed of your network devices, you need a Category 3 (10 Mbps) or Category 5 (100 Mbps) Ethernet cable with RJ-45 connectors for each device you want to connect to the switch. Each Ethernet cable has to be less than 328 feet (100 meters).

## Install the Switch and Connect Devices

1. Place the switch on a flat surface.
2. For each device, insert one end of an Ethernet cable into the port in the device and insert the other end into one of the Ethernet ports on the switch. Note: If you have more than 16 devices to connect to this switch, connect them to a switch and then connect that switch to this switch.



3. Connect the power adapter cord into the back of the switch and then plug the adapter into a power source (such as a wall socket or power strip).
4. Check the LEDs to verify that the equipment is connected correctly.



- The Power LED is lit.
- Each RJ45 jack has a corresponding LED on the front panel. For each jack that is connected to a powered device, the LED is lit, and it flashes when activity occurs.

**Note:** If any LED does not operate as indicated, go to the Troubleshooting section.

5. Connect powered devices (PDs) to Port 1 – Port 8 of FS116P. These PoE ports automatically activate when a compatible device is connected. The FS116P does not provide power to PD devices that are not compatible with the PoE Standard IEEE 802.3af. This feature allows you to mix legacy and standards-based PoE devices on a network without damaging equipment. (See the following table for descriptions of the LEDs.)

LED	Status	Description
Power	On (green)	The FS116P is powered on.
	Off	Power is not being supplied to the unit.
PoE Max	On (yellow)	Less than 7W of PoE power is available.
	Blinking	The PoE MAX LED was active in the previous 2 minutes.
PoE Status, Ports 1–8	Off	There is at least 7W of PoE power available for another device.
	Green	The PoE powered device (PD) is connected and the port is supplying power successfully.
	Yellow	One of the following failures stopped power to the port: <ul style="list-style-type: none"> <li>• There is a short circuit on a PoE power circuit.</li> <li>• PoE power demand exceeds power available.</li> <li>• PoE current exceeds the amount available.</li> <li>• Out of proper voltage band (44 – 57 VDC).</li> </ul>
	Off	No PoE powered device (PD) is connected.
Port Status, ports 1-8 (left LED)	On (green)	A 100 M link has been successfully established on the port.
	Blinking (green)	The port is transmitting or receiving data.
	On (yellow)	A 10 M link has been successfully established on the port.
	Blinking (yellow)	The port is transmitting or receiving data.
	Off	No link.

LED	Status	Description
Port Status, Ports 9–16 (left LED)	On	A 100 M link has been successfully established on the port.
	Blinking	The port is transmitting or receiving data.
	Off	No link.
Port Status, Ports 9–16 (right LED)	On	A 10 M link has been successfully established on the port.
	Blinking	The port is transmitting or receiving data.
	Off	No link.

Performance Specifications	
Frame forward rate	14,800 frames/sec max. for 10 M port; 148,800 frames/sec max. for 100 M port.
Network latency (64-byte packets)	100 – 100 Mbps: 20 µs max.
Address database size	8 K MAC addresses
Queue buffer	1.25 Mbit

Technical Specifications	
Standards compatibility	IEEE 802.3i 10BASE-T Ethernet, IEEE 802.3u, 100BASE-TX Fast Ethernet, IEEE 802.3x Flow Control, IEEE 802.3af Power over Ethernet; IEEE 802.1p priority tags; compatible with Windows®, Mac®OS, NetWare®, Linux®
Network interface	RJ-45 connector for 10BASE-T or 100BASE-TX Ethernet Interface
Power	69.6W max. and 48V @ 1.45A DC input
Port description	10/100 Mbps Auto Uplink™ RJ45 ports with PoE enabled (Port 1 – Port 8) 10/100 Mbps Auto Uplink™ RJ45 ports (Port 9 – Port 16)
PoE power budget	55W max. (all PoE ports, Port 1 – Port 8), 15.4W max. per PoE port
Dimensions	287 x 103 x 27 mm (11.3 x 4.1 x 1.1 in.)
Weight	0.9 kg (2.0 lbs)
Operating temperature	0° to 40° C (32° to 104° F)
Operating humidity	10% to 90% relative humidity, non-condensing
Electromagnetic compliance	CE Class A; FCC Part 15, Class A; VCCI Class A; C-Tick Class A
Safety agency approvals for the power adapter	CE/LVD, CB

**PoE example 1:** 4 PDs are connected to FS116P (Port 1 – Port 4) consuming 50W, leaving 5W of power available. The PoE MAX LED lights. There is less than 7W available. The FS116P does not provide power to any new connected PD. The 5W remaining is reserved for power surges by the original PD devices.

**PoE example 2:** Port 1– Port 4 all have PDs drawing 13W, for a total of 52W. Since the remaining power is less than 7W, the PoE MAX LED lights. If all of the PDs surge to 14W, exceeding the power budget (55W), Port 4 stops providing power since it has the lowest priority of the ports providing power. The power from Port 4 is allocated to the other ports. If the ports are plugged in at the same time, priority is based on port number. The PoE status LED for Port 4 turns yellow, and the PoE MAX LED turns off, since there is now more than 7W available.

## Troubleshooting

Check that are using the NETGEAR power adapter supplied with your switch.

### The Power LED is not lit.

The switch has no power.

- Make sure that the power cord is correctly connected to the switch.
- Make sure that the power adapter is connected to a functioning power outlet. If it is in a power strip, make sure that the power strip is turned on. If a light switch controls the socket, make sure that the switch is in the on position.

### The Port LED for a connected device is not lit or stays on continuously.

There is a hardware connection problem.

- Make sure that the cables are securely plugged in at the switch and the device.
- Make sure that the connected device is turned on.
- If the Ethernet cable is connected to a NIC or other Ethernet adapter, make sure that the card or adapter is installed correctly and is working.
- Make sure that the cable is less than 328 feet (100 meters).

## Technical Support

Thank you for selecting NETGEAR products.

After installing your device, locate the serial number on the label of your product, and use it to register your product at <http://www.NETGEAR.com/register>. Registration is required to use the telephone support service. For product updates, additional documentation, and support, go to <http://support.netgear.com>.

For complete DoC, go to the NETGEAR EU Declarations of Conformity website at [http://support.netgear.com/app/answers/detail/a\\_id/11621/](http://support.netgear.com/app/answers/detail/a_id/11621/).



This symbol was placed in accordance with the European Union Directive 2002/96 on the Waste Electrical and Electronic Equipment (the WEEE Directive). If disposed of within the European Union, this product should be treated and recycled in accordance with the laws of your jurisdiction implementing the WEEE Directive.

NETGEAR, the NETGEAR logo, and Connect with Innovation are trademarks and/or registered trademarks of NETGEAR, Inc. and/or its subsidiaries in the United States and/or other countries. Information is subject to change without notice. Other brand and product names are registered trademarks or trademarks of their respective holders. © 2012 NETGEAR, Inc. All rights reserved. For indoor use only in all EU countries and Switzerland.



201-10536-03

July 2012