Allied Telesis CentreCOM FS980M Series Fast Ethernet Switches Installation Guide

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Allied Telesis CentreCOM FS980M Series Fast Ethernet Switches

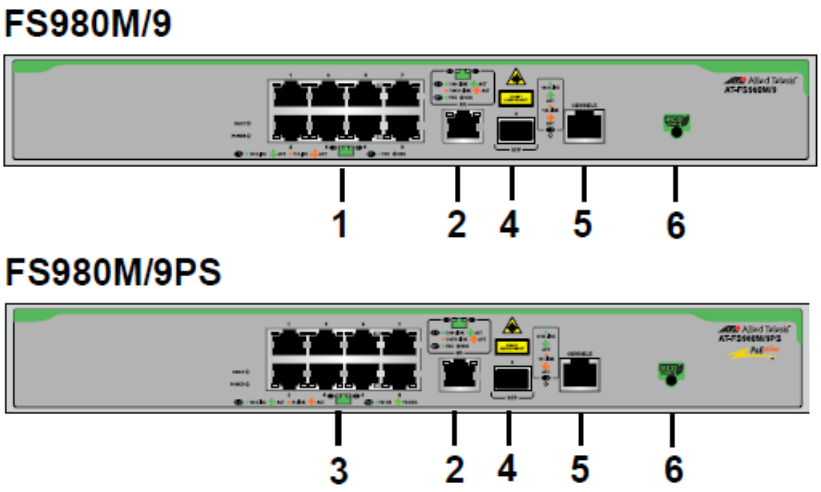
Introduction

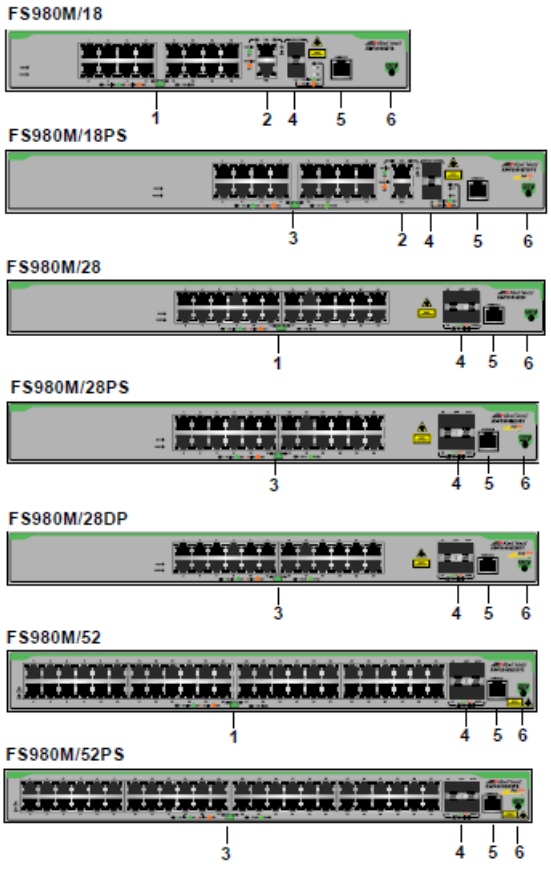
This Quick Installation Guide contains a short version of the installation instructions for the CentreCOM FS980M Series of Fast Ethernet Managed Access Switches. For more instructions, refer to the FS980M Series Fast Ethernet Switch Series Installation Guide on the Allied Telesis web site at www.alliedtelesis.com/us/en/services-support. This guide contains the following sections:

- “Front Panels” next
- “PoE+ Power Budgets” on page 6
- “Combo Ports” on page 6

Front Panels

Here are the front panels of the FS980M Switches.





1	10/100 Mbps Ethernet copper ports
2	10/100/1000Mbps Ethernet copper ports
3	10/100Mbps Ethernet copper ports with PoE+
4	100/1000Mbps SFP transceiver ports
5	Console port
6	eco-friendly button

Here are the 10/100Mbps Ethernet copper ports.

Switch	**10/100Mbps Copper Ports**	**10/100Mbps Copper Ports with PoE +**
FS980M/9	1 to 8	–
FS980M/9PS	–	1 to 8
FS980M/18	1 to 16	–
FS980M/18PS	–	1 to 16
FS980M/28	1 to 24	–
FS980M/28PS	–	1 to 24
FS980M/28DP	–	1 to 24
FS980M/52	1 to 48	–
FS980M/52PS	–	1 to 48

Here are the 10/100/1000Mbps Ethernet copper ports.

Switch	**10/100/1000Mbps Copper Ports**
FS980M/9	9R (Combo)
FS980M/9PS	9R (Combo)
FS980M/18	17R and 18R (Combo)
FS980M/18PS	17R and 18R (Combo)
FS980M/28	–

Switch	10/100/1000Mbps Copper Ports
FS980M/28PS	–
FS980M/28DP	–
FS980M/52	–
FS980M/52PS	–

Here are the 100/1000Mbps SFP ports.

Switch	100/1000Mbps SFP Ports
FS980M/9	9 (Combo)
FS980M/9PS	9 (Combo)
FS980M/18	17 and 18 (Combo)
FS980M/18PS	17 and 18 (Combo)
FS980M/28	25 to 28
FS980M/28PS	25 to 28
FS980M/28DP	25 to 28
FS980M/52	49 to 52
FS980M/52PS	49 to 52

Power Supplies
All the FS980M Switches, except for the FS980M/28DP Switch, have one AC power supply and one AC power cord connector on the back panel.
The FS980M/28DP Switch has two AC power supplies and two AC power cord connectors on the back panel for redundant system and PoE+ power. When both power supplies are receiving power, one power supply is active and the other is redundant power. If the active power supply loses power, the redundant power supply automatically becomes active and supplies system and PoE+ power for the switch.

PoE+ Power Budgets
The PoE+ power budgets of the PoE+ switches are listed here. Power budgets are the maximum amounts of power that PoE+ switches can provide to powered devices on the Ethernet copper ports.

Switch	PoE+ Power Budget
FS980M/9PS	150 watts
FS980M/18PS	250 watts
FS980M/28PS	375 watts
FS980M/28DP	375 watts: 1 or 2 active power supplies
FS980M/52PS	375 watts

The switches support IEEE 802.3at PoE+ Classes 0 to 4 devices. (Maximum 30.0W at the switch ports.)
The PoE+ budget of the FS980M/28DP Switch is 375W when one or both power supplies are powered on.

Note: The maximum number of powered devices that the switches can support simultaneously will depend on the power requirements of the devices.

Combo Ports
The FS980M/9, FS980M/9PS, FS980M/18, and FS980M/18PS Switches have one or two combo ports. The combo ports have one 10/100/1000Mbps Ethernet copper port and one SFP transceiver port. The Ethernet copper ports have the letter “R” for “Redundant” on the front panels of the switches. The combo ports are listed here.

Switch	Combo Ports	
	Ethernet Copper Port	SFP port
FS980M/9 and FS980M/9PS	9R	9
FS980M/18 and FS980M/ 18PS	17R	17
	18R	18

Here are the guidelines:

- Only one port in a combo is active at a time. It can be either the Ethernet copper port or a corresponding SFP module.
- The Ethernet copper port is the active combo port when its SFP port is empty or the SFP module is not linked to an end node.
- The SFP port is the active combo port when its SFP transceive establishes a link with a network device. The Ethernet port is placed in a blocking state.

VCStack Feature

The VCStack feature is used to manage up to four FS980M Switches as a single virtual unit. The switches synchronize their actions so that switching operations (such as spanning tree protocols, virtual LANs, and static port trunks) span across all the ports and switches. Two advantages of stacks are:

- You can manage multiple units simultaneously, which can simplify network management.
- You can add redundancy to your network topology by distributing

network functions across different switches. For example, the ports of a static port trunk on a standalone switch have to be from on the same switch. In contrast, the ports of a static trunk in a stack can be from different switches in the same stack.For instructions on VCStack, refer to the CentreCOM FS980M Series Command Reference for AlliedWare Plus.

Note: The FS980M/9, FS980M/9PS, FS980M/18, and FS980M/ 18PS Switches do not support VCStack.

Beginning the Installation

Reviewing Safety Precautions

Review the following safety precautions before installing the product.

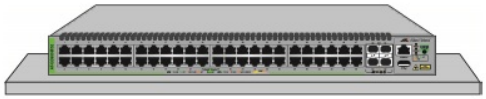
Note: The symbol indicates that a translation of the safety statement is available in the PDF document "Translated Safety Statements" on the Allied Telesis website at **www.alliedtelesis.com**/us/en/documents/translated-safety-statements.

Warning: Class 1 Laser product. L1
Warning: Do not stare into the laser beam L2
Warning: Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord. E3
Warning: To prevent electric shock, do not remove the cover. No user-serviceable parts inside. This unit contains hazardous voltages and should only be opened by a trained and qualified technician. To avoid the possibility of electric shock, disconnect electric power to the product before connecting or disconnecting the cables. E1
Warning: Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts. E4

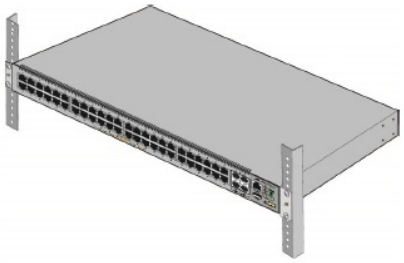
Warning: The device is heavy. Always ask for assistance before moving or lifting it to avoid injuring yourself or damaging the equipment. E122
Warning: To reduce the risk of electric shock, the PoE ports on this product must not connect to cabling that is routed outside the building where this device is located.E40

Installation Options

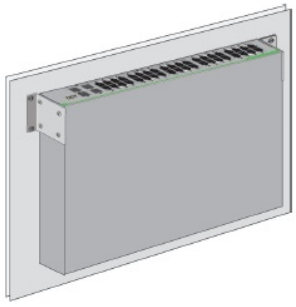
Here are the installation options.



Table

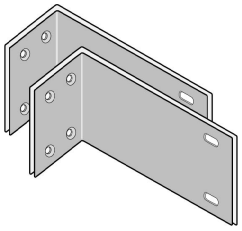
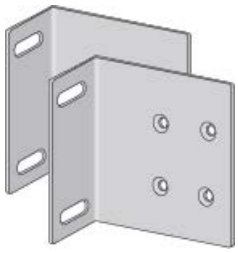
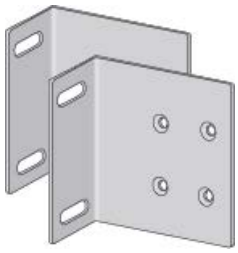
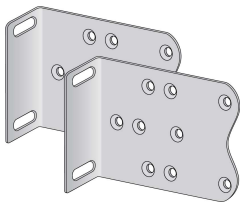


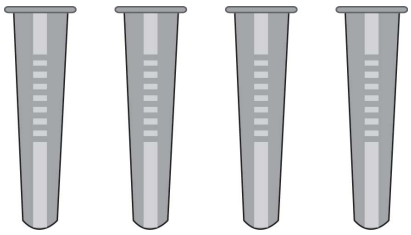
Standard 19-inch equipment rack

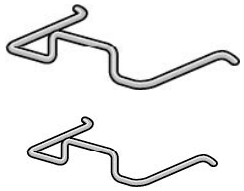
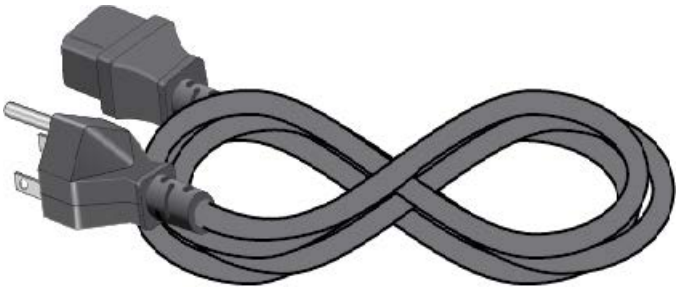
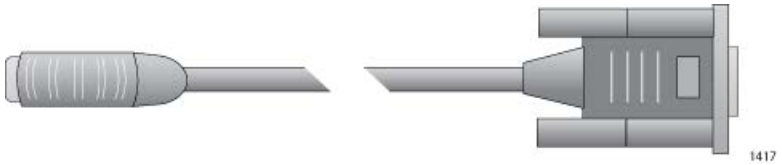


Wall

Unpacking the Switch
Here are the contents of the shipping boxes.

Item	FS980M/			
	9 9PS 18	18PS 28 52	28PS 52PS	28DP
Wall/equip- ment rack br ackets				
Eight bracket screws	 M4 x 6.8mm flat-head screws			
Four equipment rack scr ews				
Four plastic feet				

Four wall mount screws	 M4 x 32mm round-head wood screws round-head
Four wall mount anchors	 6mm x 30mm nylon anchors

Item	FS980M/			
	9 **9PS** **18**	**18PS** **28** **52**	**28PS** **52PS**	**28DP**
Power code retaining clip				
AC power cords				
Console cable				

Choosing a Site for the Switch
Review these site recommendations and requirements.

- Before installing the switch in an equipment rack, check that the rack is safely secured so that it will not tip over. Devices in a rack should be installed starting at the bottom of the rack, with the heavier devices near the bottom.
- Before installing the switch on a table, verify that the table is level and stable.
- Before installing the switch on a wall, verify that the wall's material is strong enough to hold the switch's weight. You should position the device so that it can be screwed into the wall's framing timber or equivalent structural element.
- The power outlet should be located near the switch and be easily accessible.
- The site should allow for easy access to the ports on the front of the switch so that you can easily connect and disconnect cables, and view the port LEDs.
- Do not place objects on top of the switch.
- The site should not expose the switch to moisture or water. The site should be a dust-free environment.
- The site should use dedicated power circuits or power conditioners to supply reliable electrical power to the network devices.
- Do not install the switch in a wiring or utility box without adequate airflow for cooling.

Warning: Switches should not be stacked on a table or desktop. They could present a physical safety hazard if you need to move or replace switches. E91

Ventilation Direction in the Switches
The direction of ventilation in the switches is from front to back.
Installing the Switch
Installing the Switch on a Desk or Table
To install the switch on a desk or table, perform the following procedure:

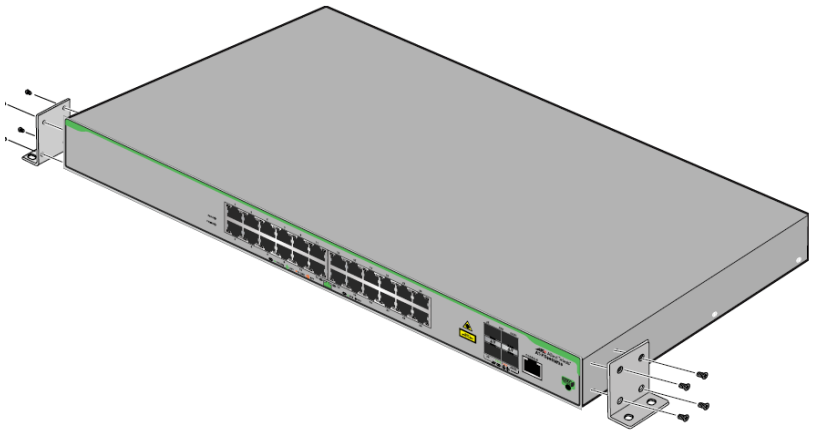
1. Place the switch upside down on a table.
2. Place the four plastic feet on the four corners of the bottom panel of the switch.
3. Turn the switch over.
4. Go to “Ports” on page 17.

Installing the Switch in an Equipment Rack
You need the following items to install the switch in an equipment rack:

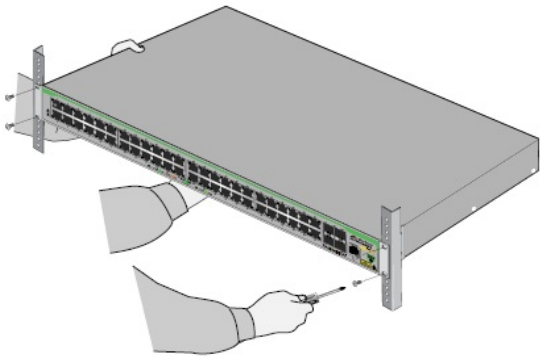
- Two equipment rack brackets (included with the switch)
- Eight bracket screws (included with the switch)
- Four standard equipment rack screws (included with the switch)
- Cross-head screwdriver (not provided)

To install the switch in an equipment rack, perform the following procedure:

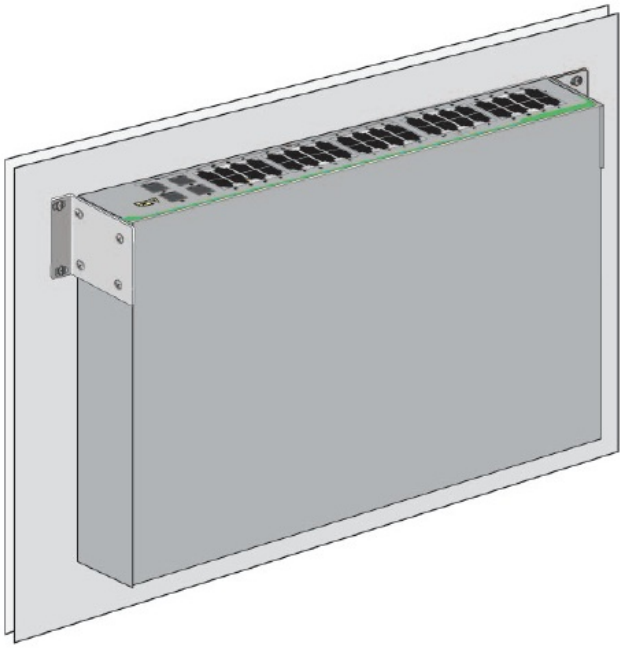
1. Place the switch on a table.
2. If the plastic feet are attached to the bottom panel of the switch, remove them with a flat-head screwdriver.
3. Attach the two brackets to the sides of the switch with the eight M4mm x 6.8mm screws included with the switch.



1. Have another person hold the switch in the equipment rack while you secure it using the four standard equipment rack screws.



1. Go to “Ports” on page 17. **Installing the Switch on a Wall**
   You must install the switch on a wall with the front panel facing up.



Note: Do not install the switch with the front panel facing left, right, or down.

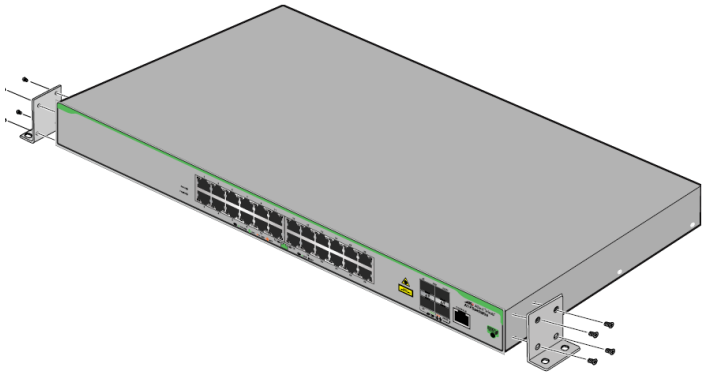
Review the following information:

- You can install the switches on a wall with either the supplied wall/ equipment rack brackets or the optional BRKT-J22 brackets kit. The FS980M/28DP Switch has to be installed on a wall with the supplied wall/equipment rack brackets. It is not compatible with the optional BRKT-J22 brackets kit.
- The BRKT-J22 brackets kit is purchased separately. You need the following items to install the switch on a wall:
- Two equipment rack/wall brackets
- Eight screws to attach the brackets to the switch
- Two plastic feet (only for FS980M/18PS, FS980M/28, and FS980M/52 Switches)
- Four screws and wall anchors
- Cross-head screwdriver (not provided)
- Stud finder for a wooden wall, capable of identifying the middle of wall studs and hot electrical wiring (not provided)
- Drill and 1/4” carbide drill bit for a concrete wall (not provided)

Warning: The device should be installed on the wall by a qualified building contractor. Serious injury to yourself or others or damage to the equipment may result if it is not properly fastened to the wall. E105
Caution: The supplied screws and anchors might not be suitable for all walls. A qualified building contractor should determine the hardware requirements of your wall prior to installing the switch. E88

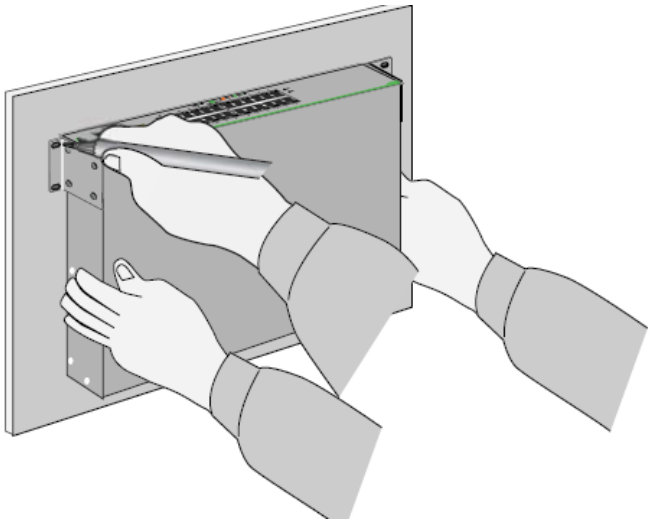
To install the switch on a wall, perform the following procedure:

1. Place the switch on a table.
2. Attach the brackets to the sides of the switch with the eight supplied screws.

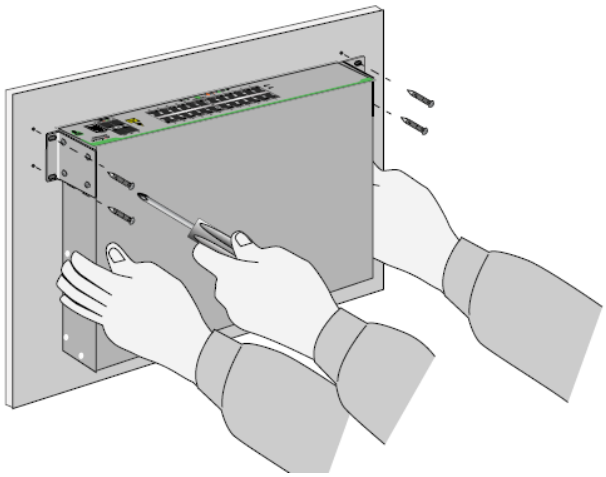


3. Turn over the switch on a table.
4. Attach two feet at the corners opposite the brackets.
5. Turn over the switch.

   Note: If the wall material requires pre-drilled holes, perform steps 6 to 10. Otherwise, go to step 11.
6. Have another person hold the switch at the selected wall location,while you use a pencil to mark the wall with the locations of the four holes in the brackets.



7. Place the switch on a table.
8. Use the stud finder to check for hot electrical wires at the locations of the screw holes.
9. If necessary, use an appropriate drill to drill the holes. Refer to “Unpacking the Switch” on page 10 for the dimensions of the supplied screws and anchors.
10. . If the wall material requires anchors, insert them into the screw holes.
11. Have another person hold the switch at the selected wall location while you secure it to the wall with appropriate screws.



12. Go to “Ports” next.

Ports
Ethernet Copper Cable Specifications
The minimum cable requirements for the Ethernet copper ports are:

- 10/100Mbps ports: Standard TIA/EIA 568-B-compliant Category 3 unshielded cabling.
- 1Gbps ports: Standard TIA/EIA 568-A-compliant Category 5 or

TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) unshielded cabling.

Cabling Ethernet Copper Ports
Observe the following guidelines when connecting Ethernet copper cables to the ports on the switch:

- The connectors on the cables should fit snugly into the ports, and the tabs should lock the connectors into place.
- The default speed setting for the ports is Auto-Negotiation. This setting is appropriate for ports connected to network devices that also support Auto-Negotiation.
- The ports must be set to Auto-Negotiation, the default setting, to operate at 1000Mbps.
- The ports support half- and full-duplex at 10Mbps or 100Mbps. The ports support only full-duplex at 1000Mbps.
- Do not attach cables to ports of static or LACP port trunks until after you configure the trunks on the switch. Otherwise, the ports will form network loops that can adversely affect network performance.
- PoE+ is enabled by default on PoE+ switches.

Installing SFP Transceivers
Here are general installation guidelines:

- You can install SFP transceivers while the switch is powered on.
- For a list of supported transceivers, refer to the product’s data sheet on the Allied Telesis web site at **www.alliedtelesis.com.**
- The operational specifications and fiber optic cable requirements are included with the transceivers.
- Install the transceivers before connecting their fiber optic cables.
- Fiber optic transceivers are dust sensitive. Always keep the dust cover in the optical ports when a fiber optic

cable is not installed.

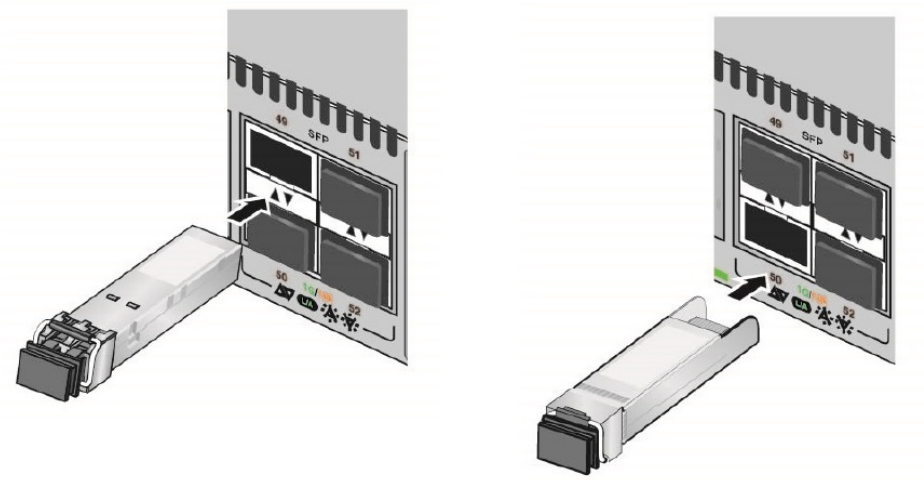
- Unnecessary removal and insertion of transceivers can lead to

Warning: Transceivers can be damaged by static electricity. Observe all standard electrostatic discharge (ESD) precautions, such as wearing an antistatic wrist strap, to avoid damaging the devices E86

Note: Do not cable the SFP S1 and S2 ports yet. To use the ports as regular Ethernet SFP ports, you have to disable the VCStack feature. For instructions, refer to “Disabling the VCStack Feature” on page 26. For instructions on VCStack, refer to the CentreCOM FS980M Series Command Reference for AlliedWare Plus.

To install SFP transceivers, perform the following procedure:

1. To install a transceiver in a top port, position it with the AlliedTelesis label facing up. To install it in a bottom port, position it with the label facing down.



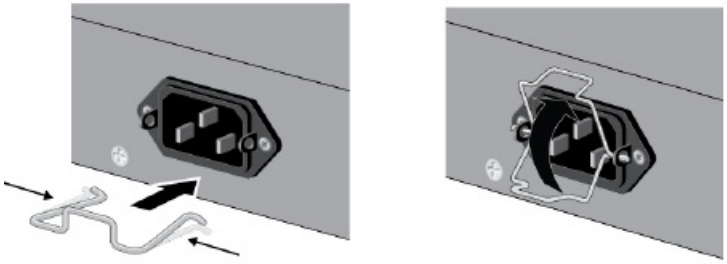
2. Slide the transceiver into the port until it clicks into place. To attach the fiber optic cable to the transceiver, continue with the next step. Otherwise, repeat steps 1 and 2 to install the remaining transceivers in th switch.
3. Remove the dust cover from the transceiver.
4. Connect the fiber optic cable to the transceiver. The connector should fit snugly into the port, and the tab should lock the connector into place.
5. Repeat this procedure to install additional transceivers.
6. Go to “Powering On the Switch” on page 20.

Powering On the Switch

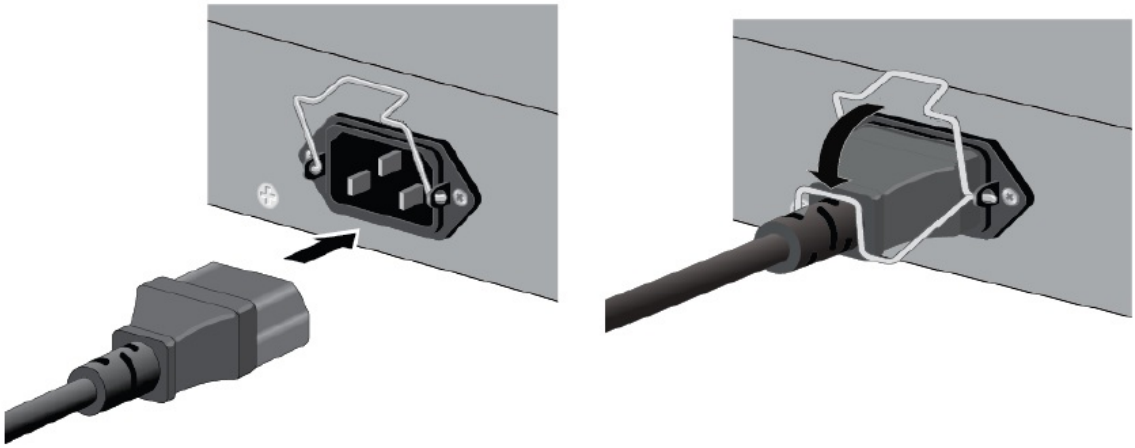
Warning: Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord.

To power on the switch, perform the following procedure:

1. Install the power cord retaining clip on the AC power connector on the rear panel of the switch, and raise the clip.



2. Connect the power cord to the connector and lower the retaining clip to secure the power cord.



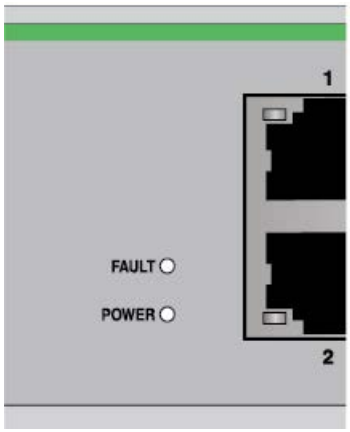
3. Plug the other end of the power cord into an AC power source.
4. If installing the FS980M/28DP Switch, repeat the procedure to power on the second power supply.
5. Wait two minutes for the switch to initialize its management software.
6. Verify that the Power LED is green. If the LED is OFF, go to “Troubleshooting” next.

LEDs

Here are descriptions of the switch and port LEDs.

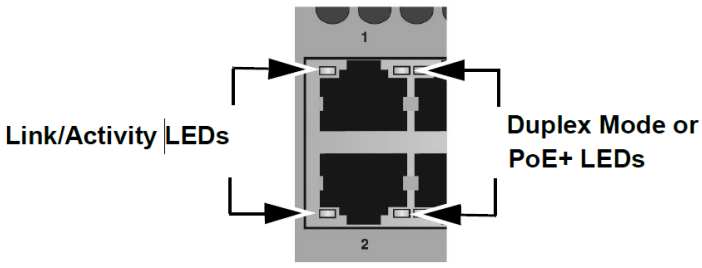
Fault and Power LEDs

The Fault and Power LEDs are described here



Fault LED	
Solid amber	The switch has found a fault condition. The fan failed or the switch is overheating and may have to shutdown because of high ambient temperature.
Flashing amber	The switch is loading the firmware.
Off	The switch is operating normally or the switch's power is off.
Power LED	
Solid green	The switch is receiving AC power.
Off	The switch is not receiving power.

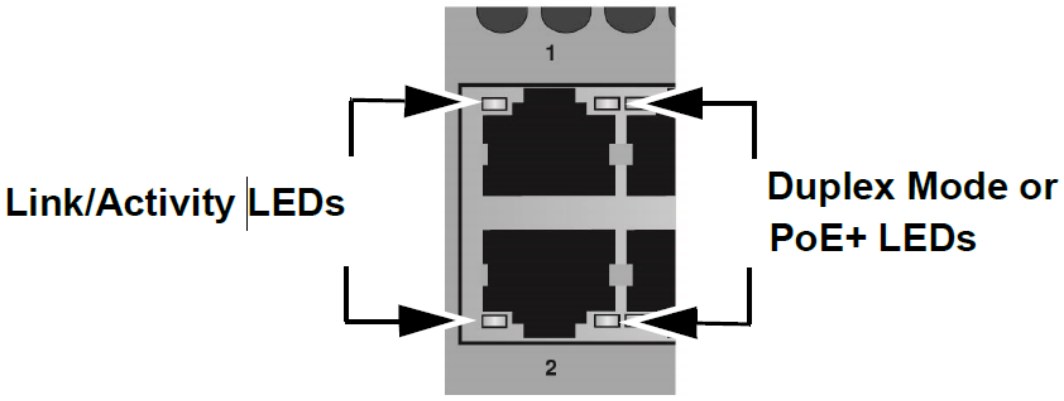
10/100Mbps Ethernet Copper Port LEDs
The LEDs for the 10/100Mbps Ethernet copper ports are described here.



Link/Activity LEDs	
Solid Green	The port has established a 100Mbps link to a network device.
Flashing Green	The port is receiving or transmitting frames at 100Mbps.
Solid Amber	The port has established a 10Mbps link to a network device.
Flashing Amber	The port is receiving or transmitting frames at 10Mbps.
Off	Possible causes of this state are listed here: – The port has not established a link with another network device. – The LEDs are turned off. To turn on the LEDs, use the eco-friendly button.
Duplex Mode LEDs – Non-PoE+ Switches	
Solid Green	The port is operating in full-duplex mode.
Off	The port is operating in half-duplex mode, or the LEDs are turned off.

PoE+ LEDs	
Solid Green	The port is delivering power to a powered device.
Flashing Green	The switch has detected a powered device on the port but cannot supply power to it because it is already providing its maximum power to other devices. The m aximum power budgets are listed in **“PoE+ Power Budgets” on page 6**.
Off	This LED state can result from the following conditions: – The port is not connected to a powered device or the device is powered off. – The port is disabled in the management software. – PoE is disabled on the port. – The LEDs are turned off. To turn on the LEDs, use the eco-friendly button.

10/100/1000Mbps Ethernet Copper Port LEDs
The LEDs for the 10/100/1000Mbps Ethernet copper ports are described here.



Link/Activity LEDs	
Solid Green	The port has established a link at 1000Mbps to a network device.
Flashing Green	The port is receiving or transmitting frames at 1000Mbps.

Solid amber	The port has established a link at 10 or 100Mbps.
Flashing amber	The port is receiving or transmitting frames at 10 or 100Mbps.
Off	Possible causes of this state are listed here: – The port has not established a link with another network device. – The LEDs are turned off. To turn on the LEDs, use the eco-friendly button.
Duplex Mode LEDs	
Solid Green	The port is operating in full-duplex mode.
Off	The port is operating in half-duplex mode or the LEDS are turned off.

SFP Port LEDs

Each SFP port has one LED.

Solid Green	The port has established a link to a network device at 1000Mbps.
Flashing Green	The port is receiving or transmitting frames at 1000Mbps.
Solid amber	The port has established a link to a network device at 100Mbps.
Flashing amber	The port is receiving or transmitting frames at 100Mbps.

Off	Possible causes of this state are listed here: • The SFP transceiver port is empty. • The SFP transceiver has not established a link with another network device. • A non-supported module is installed. • The LEDs are turned off. To turn on the LEDs, use the eco-friendly button.

Starting a Local Management Session

This procedure explains how to start a local management session on the switch. You perform local management sessions by connecting your computer to the Console port on the front panel. The switch does not need an IP address for local management sessions.

Local management sessions require the management cable that comes with the switch. It has an RJ-45 connector that connects to the Console port and a DB-9 connector that connects to a DB-9 connector on your computer. See “Unpacking the Switch” on
page 10.

To start a local management session, perform the following procedure:

1. Connect the RJ-45 connector on the management card to the Console RS-232 port on the switch.
2. Connect the management cable to a RS-232 connector on a terminal or personal computer with a terminal emulation program.
3. Configure the VT-100 terminal or terminal emulation program as follows:

- Default baud rate: 9600 bps (The supported baud rates of the Console port are 9600, 19200, 38400, 57600, and 115200 bps.) Data bits: 8
- Parity: None
- Stop bits: 1
- Flow controller: None

4. Press Enter. You are prompted for a user name and password.

5. Enter the default user name and password. They are “manager”and “friend” (without quotes), respectively. The user name and password are case sensitive. The local management session starts when the User Exec mode prompt is displayed: awplus>.
For more information, refer to the Command Reference for FS980M Series Switches, AlliedWare Plus Operating System from www.alliedtelesis.com/us/en/services-support.

Disabling the VCStack Feature
The SFP S1 and S2 ports can function either as regular Ethernet SFP ports or as stacking ports for the VCStack feature. At their default settings, the SFP S1 and S2 ports are VCStack stacking ports. To use them as regular Ethernet SFP ports, you have to disable the VCStack feature.

Note: The FS980M/9, FS980M/9PS, FS980M/18, and FS980M/ 18PS Switches do not support the VCStack feature.

To disable VCStack, perform the following procedure:

1. Start a local management session. Refer to “Starting a Local Management Session” on page 25.
2. Enter the commands in bold: awplus> enable awplus# configure terminal Enter configuration commands, one per line. End with CNTL/Z. awplus(config)# no stack 1 enable
3. At the confirmation prompt, type Y for yes to disable VCStack,
4. Enter the commands in bold: awplus(config)# exit awplus# write Building configuration … {OK} awplus# reboot
5. Wait two minutes for the switch to start the management software The switch in now in standalone mode. The SFP S1 and S2 ports are now regular Ethernet ports.
6. You can now cable the SFP S1 and S2 transceiver ports.

Troubleshooting
Problem: All port and system LEDs are off, and the fans have stopped.
Solutions: The unit is not receiving power. Try the following:

- Verify that the power cord is securely connected to the power source and the AC connector on the back panel of the switch.
- Verify that the power outlet has power by connecting another device to it.

  Problem: All of the port LEDs are off even though the ports are connected to active network devices.

  Solution: The switch might be operating in the low power mode. To toggle on the LEDs, press the eco-friendly button on the front panel of the switch. You can also toggle the LEDs off and on with the ECOFRIENDLY LED and NO ECOFRIENDLY LED commands in the command line interface.

  Problem: A LINK/ACT LED is off for an Ethernet copper port that is connected to an active network device.

  Solutions: The port is unable to establish a link to a network device. Try the following:
- Verify that the network device connected to the Ethernet copper port is powered on and is operating properly.

- Verify that port is connected to the correct Ethernet copper cable.

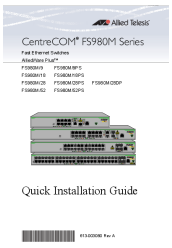
  Problem: The LINK/ACT LED is off for an SFP transceiver that is connected to an active network device.

  Solutions: The fiber optic port on the transceiver is unable to establish a link to a network device. Try the following:
- Verify that the fiber optic cable is securely connected to the port on the transceiver and to the port on the remote network device.
- Check that the transceiver is fully inserted in the port.

  Problem: A port on the switch is not providing power to a PoE+ device.

  Solutions: Try the following:
- Check the port's PoE+ LED. Refer to "10/100Mbps Ethernet Copper Port LEDs" on page 22. If the LED is flashing amber, the switch cannot support additional PoE+ devices device because it is already providing its maximum power to other devices. The maximum PoE budgets for powered devices are listed in "PoE+ Power Budgets" on page 6.
- For powered devices of Classes 0 to 4 (Types 1 to 3 up to 25.5W), review the powered device's documentation to confirm that the device supports Mode A of the IEEE 802.3at standard and that it uses pins 1, 2, 3, and 6 on the RJ-45 port to receive power.

Documents / Resources

	Allied Telesis CentreCOM FS980M Series Fast Ethernet Switches [pdf] Installation Guide FS980M 9, FS980M 9PS, FS980M 18, FS980M 18PS, FS980M 28, FS980M 28PS, FS980M 28 DP, FS980M 52, FS980M 52PS, CentreCOM FS980M Series Fast Ethernet Switches, CentreC OM FS980M Series, Fast Ethernet Switches

References

- Welcome to Allied Telesis | Allied Telesis
- Welcome to Allied Telesis | Allied Telesis
- Safety Statements | Allied Telesis
- Service & Support | Allied Telesis