Cable and Connectors

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Cable and Connectors

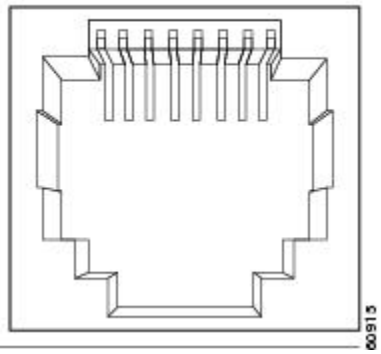
Connector Specifications

10/100/1000 Ports

The 10/100/1000 Ethernet ports on the switches use RJ-45 connectors.

Figure 1: 10/100/1000 Port Pinouts

Pin	Label
1	TP0+
2	TP0-
3	TP1+
4	TP2+
5	TP2-
6	TP1-
7	TP3+
8	TP3-

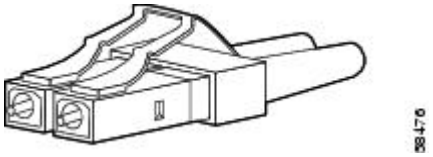


Note Connector pins 1, 2, 3, and 6 are used for PoE.

SFP Module Connectors

The illustration below shows an LC style connector that is used with the SFP Module slots. It is a fiber-optic cable connector.

Figure 2: Fiber-Optic SFP Module LC Connector



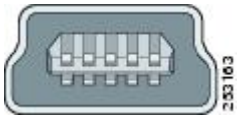
Warning **Statement 1051—**Laser Radiation

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

Console Port

The switch has two console ports: a USB 5-pin mini-Type B port on the front panel (see image below) and an RJ-45 console port on the rear panel.

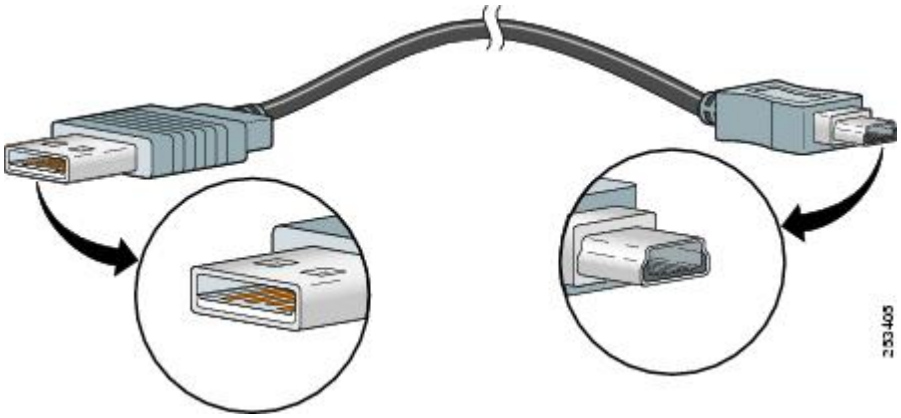
Figure 3: USB Mini-Type B Port



The USB console port uses a USB Type A to 5-pin mini-Type B cable, shown in the illustration below. The USB Type A-to-USB mini-Type B cable is not supplied.

Note When running Linux, access the USB Console using **Minicom** instead of **Screen**.

Figure 4: USB Type A-to-USB 5-Pin Mini-Type B Cable



The RJ-45 console port uses an 8-pin RJ-45 connector The supplied RJ-45-to-DB-9 adapter cable is used to connect the console port of the switch to a console PC. You need to provide a RJ-45-to-DB-25 female DTE adapter if you want to connect the switch console port to a terminal. You can order a kit (part number ACS-DSBUASYN=) containing that adapter.

Alarm Port

The labels for the alarm connector pin-outs are on the switch panel and are displayed below.

Label	Connection
NO	Alarm Output Normally Open (NO) connection
COM	Alarm Output Common connection
NC	Alarm Output Normally Closed (NC) connection
IN2	Alarm Input 2
REF	Alarm Input Reference Ground connection
IN1	Alarm Input 1

Cables and Adapters

SFP Module Cables

Each port must match the wave-length specifications on each end of the cable, and for reliable communications, the cable must not exceed the allowable length. Refer to the Data Sheets for the complete list of supported SFP Modules and cables.

Note

- The maximum operating temperature of the switch varies depending on the type of SFP module that you use.

  Note When using modules SFP-10G-ER-I & ONS-SI+-10G-ER, we require 5°C temperature derating.

- Modal bandwidth applies only to multimode fiber.
- A mode-field diameter/cladding diameter = 9 micrometers/125 micrometers.
- A mode-conditioning patch cord is required when using 1000BASE-LX/LH SFP modules, MMF, and a short link distance . Using an ordinary patch cord can cause transceiver saturation, resulting in an elevated bit error rate (BER). When using the LX/LH SFP module with 62.5-micron diameter MMF, you must also install a mode-conditioning patch cord between the SFP module and the MMF cable on both the sending and receiving ends of the link. The mode-conditioning patch cord is required for link distances greater than 984 feet (300 m).
- 1000BASE-ZX SFP modules can send data up to 62 miles (100 km) by using dispersion-shifted SMF or low-attenuation SMF. The distance depends on the fiber quality, the number of splices, and the connectors.
- When the fiber-optic cable span is less than 15.43 miles (25 km), insert a 5-decibel (dB) or 10-dB inline optical attenuator between the fiber-optic cable plant and the receiving port on the 1000BASE-ZX SFP module.

Cable Pinouts

Figure 5: Four Twisted-Pair Straight-Through Cable Schematic for 1000BASE-T Ports

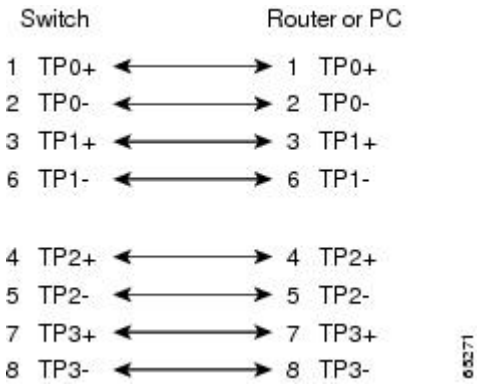
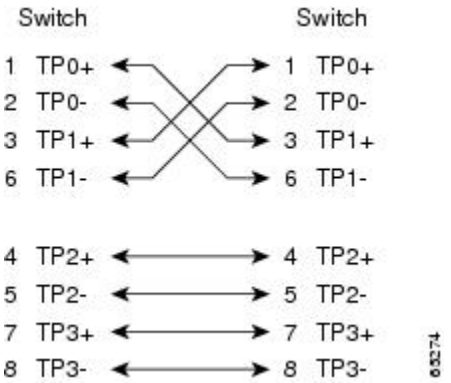
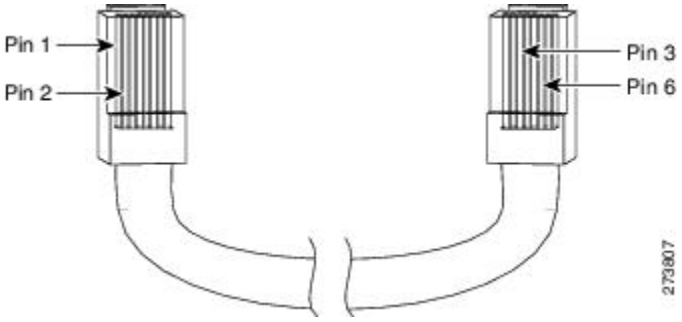


Figure 6: Four Twisted-Pair Crossover Cable Schematics for 1000BASE-T Ports



To identify a crossover cable, hold the cable ends side-by-side, with the tab at the back. The wire connected to pin 1 on the left end should be the same color as the wire connected to pin 3 on the right end. The wire connected to pin 2 on the left end should be the same color as the wire connected to pin 6 on the right end.

Figure 7: Identifying a Crossover Cable



Console Port Adapter Pinouts

The console port uses an 8-pin RJ-45 connector. If you did not order a console cable, you need to provide an RJ-45-to-DB-9 adapter cable to connect the switch console port to a PC console port. You need to provide an RJ-45-to-DB-25 female DTE adapter if you want to connect the switch console port to a terminal.

Switch ConsolePort (DTE)	RJ-45-to-DB-9Terminal Adapter	ConsoleDevice
Signal	DB-9 Pin	Signal
RTS	8	CTS
DTR	6	DSR
TxD	2	RxD
GND	5	GND
RxD	3	TxD
DSR	4	DTR
CTS	7	RTS

Note The RJ-45-to-DB-25 female DTE adapter is not supplied with the switch.

SwitchConsolePort (DTE)	RJ-45-to-DB-25Adapter	ConsoleDevice
Signal	DB-25 Pin	Signal
RTS	5	CTS
DTR	6	DSR
TxD	3	RxD
GND	7	GND
RxD	2	TxD
DSR	20	DTR
CTS	4	RTS