



# APPENDIX C

## Connecting to DC Power

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This appendix describes how to make DC power connections to the Catalyst 3750G-12S-SD switch. See the “[Installing the Switch](#)” section on page 2-11 for instructions on installing the switch.

## Connecting to DC Power

To connect the Catalyst 3750G-12S-SD switch to a DC-input power source, follow the steps in these sections:

- [Preparing for Installation](#), page C-1
- [Grounding the Switch](#), page C-2
- [Wiring the DC-Input Power Source](#), page C-4



**Warning**

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**This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.**  
Statement 1017

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**Note**

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We recommend that you use 18 AWG copper wiring for Network Equipment Building Systems (NEBS) installation. This guideline follows the standard guidelines for DC power wiring in the Central Office.

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**Note**

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The grounding architecture of this product is DC-isolated (DC-I).

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## Preparing for Installation

Locate the ground lug and the two number-10-32 screws on the switch rear panel and the DC terminal block plug in the DC-switch accessory kit.

Obtain these necessary tools and equipment:

- Ratcheting torque screwdriver with a Phillips head that exerts up to 15 pound-force inches (lbf-in.) or 240 ounce-force inches (ozf-in.) of pressure
- Panduit crimping tool with optional controlled cycle mechanism (model CT-700, CT-720, CT-920, CT-920CH, CT-930, or CT-940CH)

- 6-gauge copper ground wire (insulated or noninsulated)
- Four leads of 18-gauge copper wire
- Wire-stripping tools for stripping 6- and 18-gauge wires

## Grounding the Switch



### Warning

**This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024



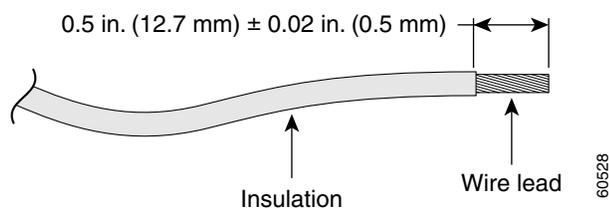
### Caution

To make sure that the equipment is reliably connected to earth ground, follow the grounding procedure instructions, and use a UL-listed lug suitable for number-6 AWG wire and two number-10-32 ground-lug screws.

To ground the switch to earth ground, follow these steps. Make sure to follow any grounding requirements at your site.

- Step 1** Locate and remove the ground lug and the two number-10-32 ground-lug screws from the rear panel of the switch. (See [Figure C-3](#) for location.) Use a standard Phillips screwdriver or a ratcheting torque screwdriver with a Phillips head. Set the screws and the ground lug aside.
- Step 2** If your ground wire is insulated, use a wire stripping tool to strip the 6-gauge ground wire to 0.5 inch (12.7 mm)  $\pm$  0.02 inch (0.5 mm), as shown in [Figure C-1](#).

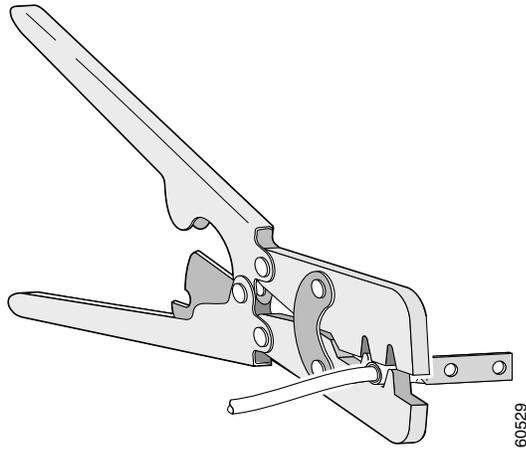
**Figure C-1 Stripping the Ground Wire**



- Step 3** Slide the open end of the ground lug over the exposed area of the 6-gauge wire.

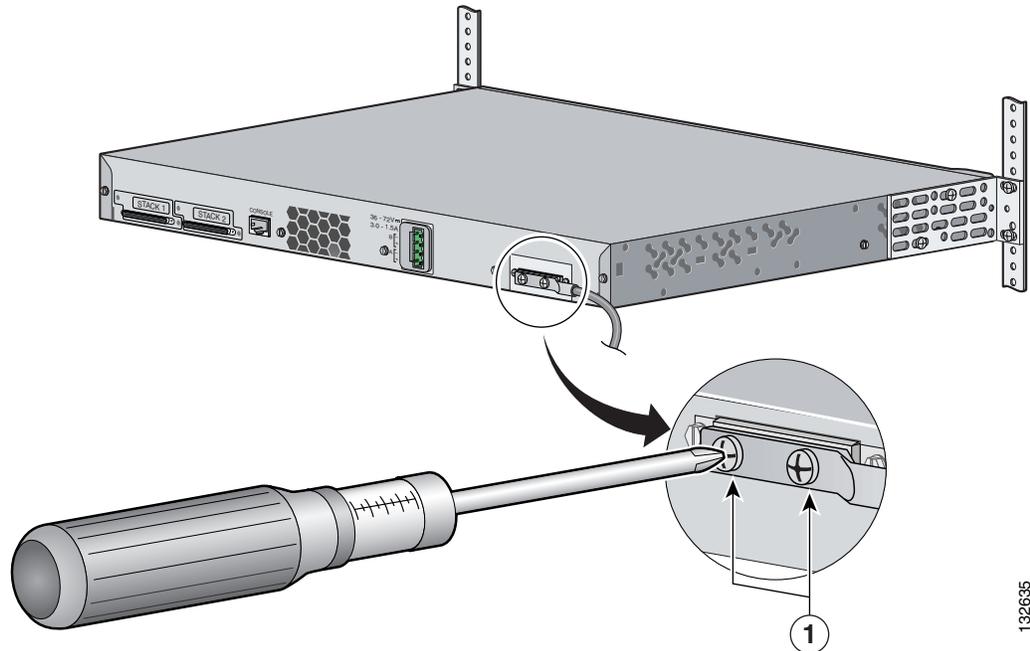
- Step 4** Using a Panduit crimping tool, crimp the ground lug to the 6-gauge wire, as shown in [Figure C-2](#).

**Figure C-2** Crimping the Ground Lug



- Step 5** Use the two number-10-32 screws to attach the ground lug and wire assembly to the switch rear panel ground connector, as shown in [Figure C-3](#).
- Step 6** Using a ratcheting torque screwdriver, torque each ground-lug screw to 15 lbf-in. (240 ozf-in.) Use either the front ground connector or the rear ground connector. You cannot use both at the same time.

**Figure C-3** Torquing Ground-Lug Screws



**1** Torque to 15 lbf-in.

## Wiring the DC-Input Power Source



### Warning

**Before performing any of the following procedures, ensure that power is removed from the DC circuit.**  
Statement 1003



### Warning

**This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 5 A** Statement 1005



### Warning

**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.**  
Statement 1030



### Caution

You must connect the Catalyst 3750G-12S-SD switch only to a DC-input power source that has an input supply voltage from  $-36$  to  $-72$  VDC. If the supply voltage is not in this range, the switch might not operate properly or might be damaged.



### Caution

The switch must be installed with 5 A-branch-circuit protection.



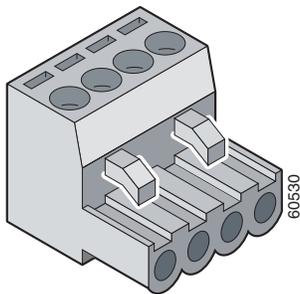
### Note

This installation must comply with all applicable codes.

To wire the switch to a DC-input power source, follow these steps:

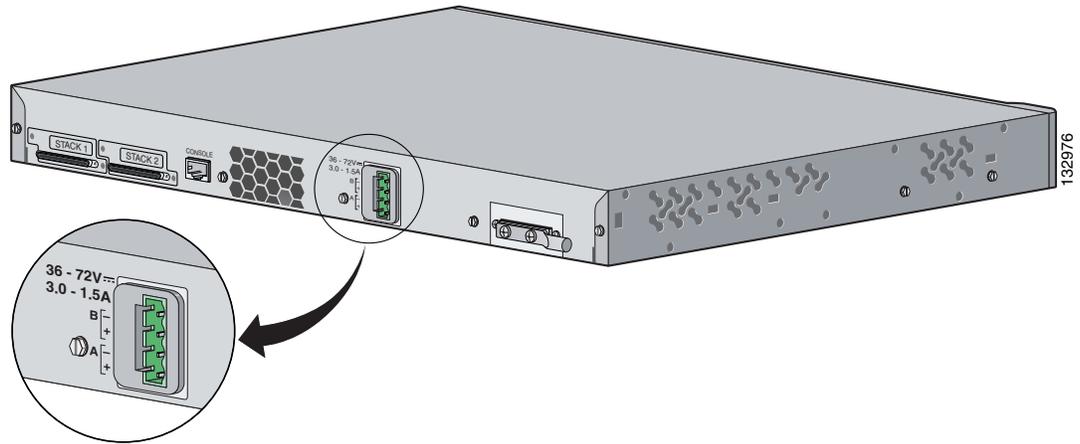
- Step 1** Apply tape to the circuit-breaker switch handle, and move the circuit-breaker handle to the off position.
- Step 2** Locate and remove the terminal block plug (see [Figure C-4](#)).

**Figure C-4** Terminal Block Plug



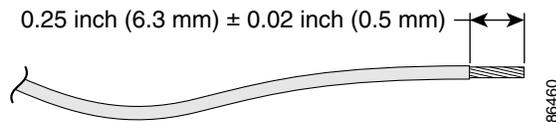
- Step 3** Identify the positive and negative feed positions for the terminal block connection. The wiring sequence is positive to positive and negative to negative for both the A and the B feed wires. The switch rear panel identifies the positive and negative positions for both the A and B feed wires, as shown in [Figure C-5](#).

**Figure C-5** Positive and Negative Positions on the Switch Rear Panel



- Step 4** Using a 18-gauge wire-stripping tool, strip each of the four wires coming from the DC-input power source to 0.27 inch (6.6 mm)  $\pm$  0.02 inch (0.5 mm), as shown in [Figure C-6](#). Do not strip more than 0.29 inch (7.4 mm) of insulation from the wire. Stripping more than the recommended amount of wire can leave exposed wire from the terminal block plug after installation.

**Figure C-6** Stripping the DC-Input Power Source Wire



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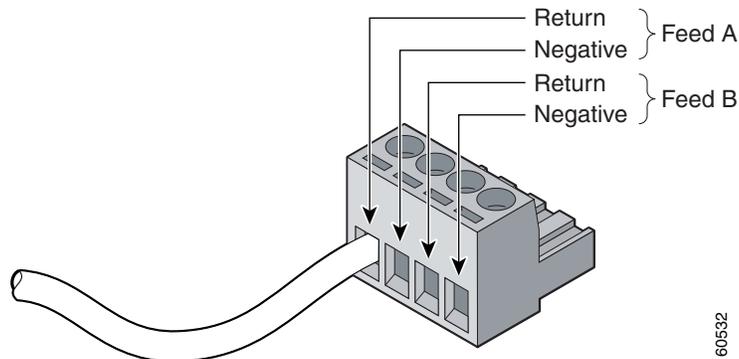
- Step 5** Insert the exposed wire of one of the four DC-input power source wires into the terminal block plug, as shown in [Figure C-7](#). Make sure that you cannot see any wire lead. Only wire *with insulation* should extend from the terminal block.

**Warning**

**An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the terminal block plug.**

Statement 122

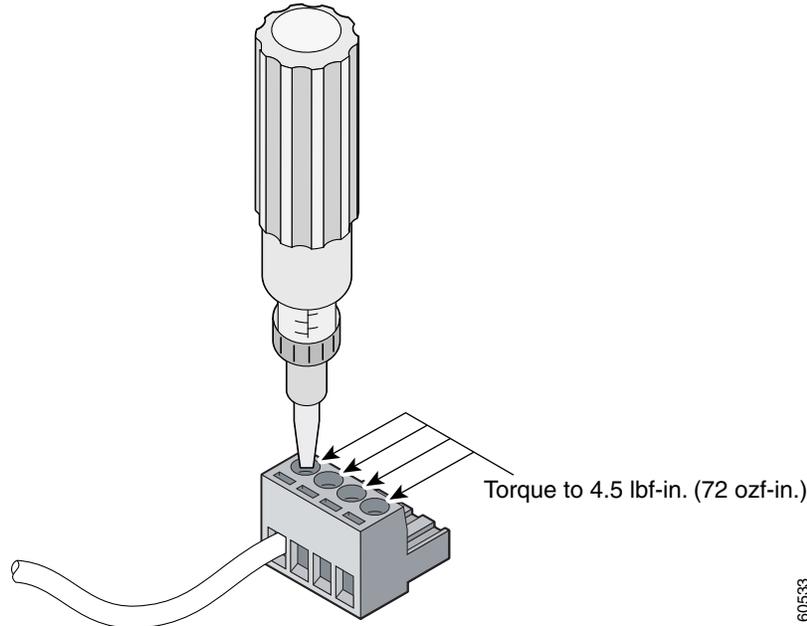
**Figure C-7** Inserting Wires in the Terminal Block Plug



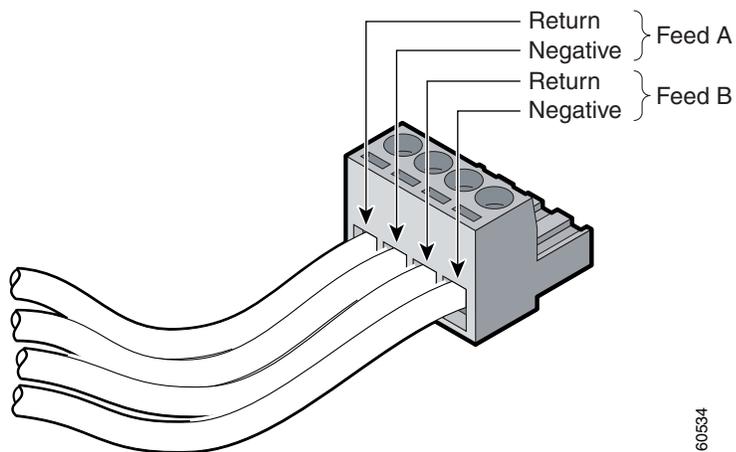
- Step 6** Use a ratcheting torque screwdriver to torque the terminal block captive screw (above the installed wire lead) to 4.5 lbf-in. (72 ozf-in.), as shown in [Figure C-8](#).

**Caution**

Do not overtorque the terminal-block captive screws. The recommended maximum torque is 4.5 lbf-in. (72 ozf-in.)

**Figure C-8** Torquing the Terminal-Block Captive Screws

**Step 7** Repeat Steps 4 and 5 for the remaining three DC-input power source wires. [Figure C-9](#) shows the completed wiring of a terminal block plug.

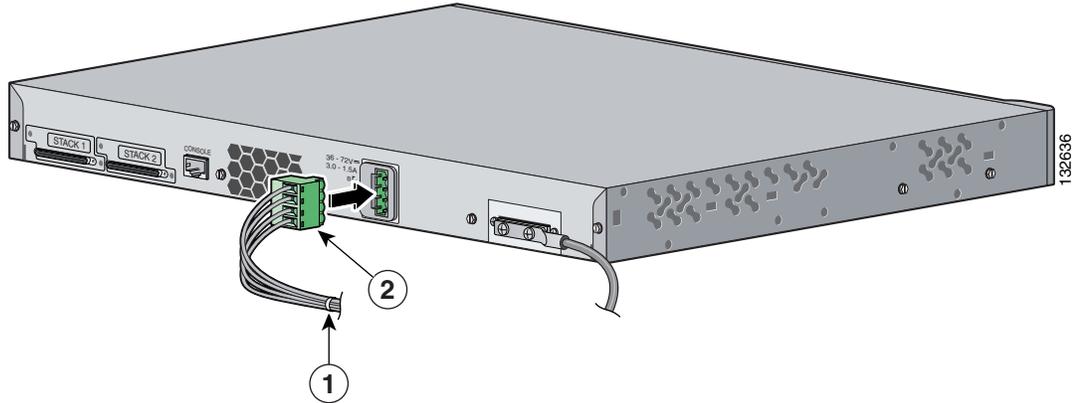
**Figure C-9** Completed Wiring of Terminal Block Plug

**Step 8** Insert the terminal block plug in the terminal block header on the switch rear panel, as shown in [Figure C-10](#).

**Caution**

Secure the wires coming in from the terminal block so that they cannot be disturbed by casual contact. For example, use tie wraps to secure the wires to the rack.

**Figure C-10** Inserting the Terminal Block in the Block Header



<b>1</b>	Tie wrap	<b>2</b>	Terminal block
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**Step 9** Remove the tape from the circuit-breaker switch handle, and move the circuit-breaker handle to the on position.



**Caution**

To comply with the intrabuilding lightning surge requirements, intrabuilding wiring must be shielded, and the shield for the wiring must be grounded at both ends.



**Caution**

The Catalyst 3750G-12S-SD switch is suitable only for intrabuilding or nonexposed wiring connections.