



# CHAPTER 5

## Connecting a Cisco Output Module

### Overview

The optional Cisco Output Module ([Figure 5-1](#)) is attached to a Cisco Physical Access Gateway or Cisco Reader Module to provide additional connections for up to 8 outputs, each of which can be configured as Normally Open (NO) or Normally Closed (NC).

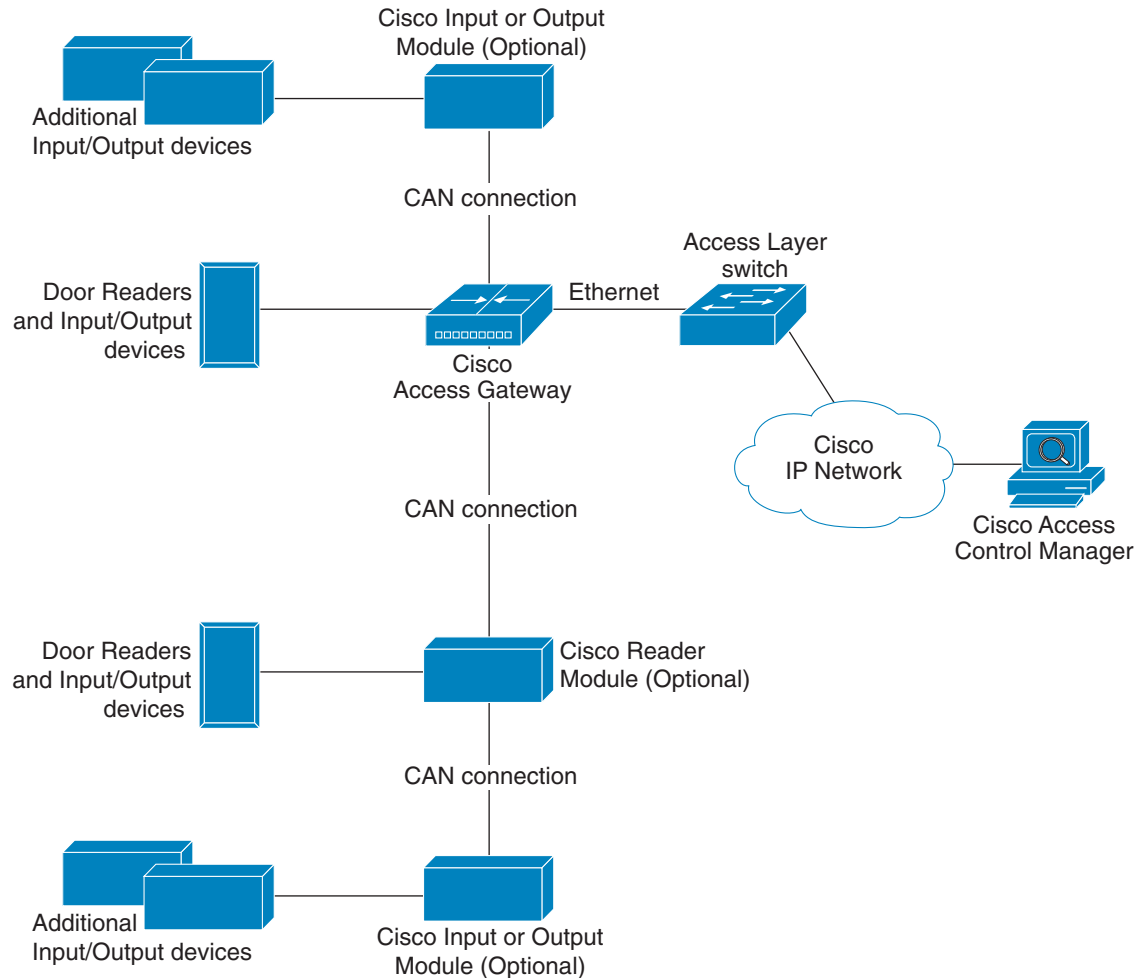
**Figure 5-1** Cisco Output Module



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The Cisco Output Module is connected to a Cisco Physical Access Gateway or Cisco Reader Module using a CAN connection to provide connections for additional output devices, as shown in [Figure 5-2](#).

**Figure 5-2** Cisco Reader Module connected to the Cisco Physical Access Gateway



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## Package Contents

Each Cisco Output Module includes the following:

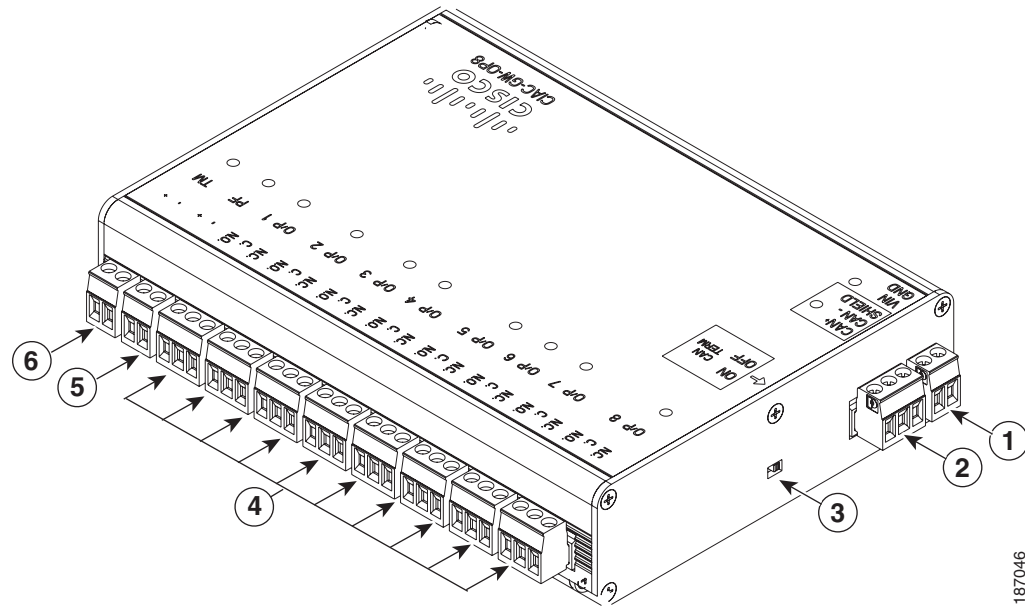
- 2 mounting brackets, with 4 screws for each bracket
- Regulatory compliance and safety information
- Quick start guide
- Connector plugs:

Type	Quantity
3 Pin	9
2 Pin	3

# Physical Overview and Port Description

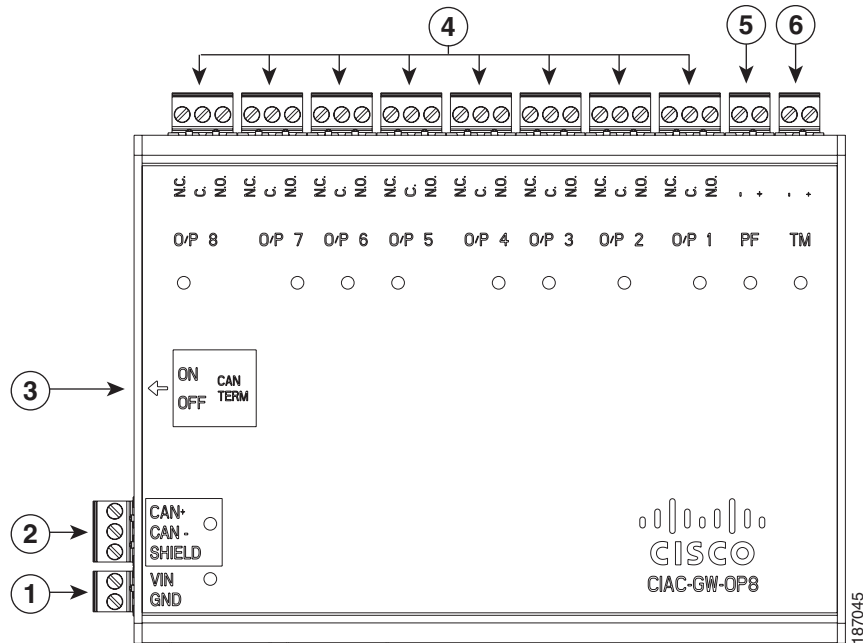
Each Cisco Output Module includes 10 ports for connecting additional output devices, as shown in [Figure 5-3](#) and [Figure 5-4](#).

**Figure 5-3** Cisco Output Module Ports and Connectors



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Figure 5-4 Cisco Output Module Ports and Connectors: Top View



1	<p>Power</p> <p>Two-pin connector for Voltage In (VIN) and Ground (GND) to connect a 12 to 24 VDC external power source.</p>
2	<p>CAN interface</p> <p>A 3-wire CAN bus is used to connect additional modules.</p> <p><b>Note</b> Modules are connected using the CAN1 interface. The CAN2 interface is not supported in this release.</p>
3	<p>CAN terminator</p> <p>The CAN terminator switch is set to ON for the last device in a CAN wiring bus. This switch is set to set to OFF for all other devices in the CAN bus.</p>

4	<p>Output Interfaces</p> <p>Eight Form C (5A @ 30V) relay outputs. Each output can be configured as either Normally Closed (NC) or Normally Open (NO).</p> <ul style="list-style-type: none"> <li>• C &amp; NO connection: The relay is normally open. The circuit is closed when triggered.</li> <li>• C &amp; NC connection: The relay is normally closed. The circuit is opened when triggered.</li> </ul> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• Install surge protection between the output device and the Cisco PAM module, as described in the <a href="#">“Installing Surge Suppressors on Output Device Connections”</a> section on page 1-13.</li> <li>• Common (C) is always used, and either NC or NO is used to complete the connection.</li> <li>• All Generic Output devices installed in Cisco PAM systems prior to release 1.1.0, were connected to the Gateway, Reader, or Output modules with the wiring reversed. If upgrading to Cisco PAM release 1.1.0 from an earlier release, disconnect all Generic Output devices and do the following: <ul style="list-style-type: none"> <li>– Connect Normally Open devices to the N.O. and C connectors on the Gateway, Reader, or Output module.</li> <li>– Connect Normally Closed devices to the N.C. and C connectors on the Gateway, Reader, or Output module.</li> </ul> </li> </ul>
8	<p>PF</p> <p>Power fail input: an unsupervised input that raises a “power fail” alarm when the circuit is open. Can be configured as an additional unsupervised port. An unsupervised input indicates only normal or alarm. The corresponding LED is red when circuit is open (when no input is connected).</p>
9	<p>TM</p> <p>Tamper input: an unsupervised input that raises a “tamper” alarm when the circuit is open. Can be configured as an additional unsupervised port. An unsupervised input indicates only normal or alarm. The corresponding LED is red when circuit is open (when no input is connected).</p>

## Status LEDs

Each output port includes a status LED that indicates the following information:

**Table 5-1 Output Module LEDs**

Status	Description
Off	Output not configured
Solid Green	Output configured and in default state
Blinking Green	Output configured and active

# Installing the Cisco Output Module

Install a Cisco Output Module to provide additional output connections for a Cisco Reader Module or Gateway.

## Before You Begin

Verify the following:

- Verify that the module has access to a power source. See the [“Power Options and Requirements” section on page 1-12](#) for more information.
- Verify that you have the necessary mounting brackets or other hardware. See the [“Mounting a Gateway or Optional Module” section on page 1-14](#).

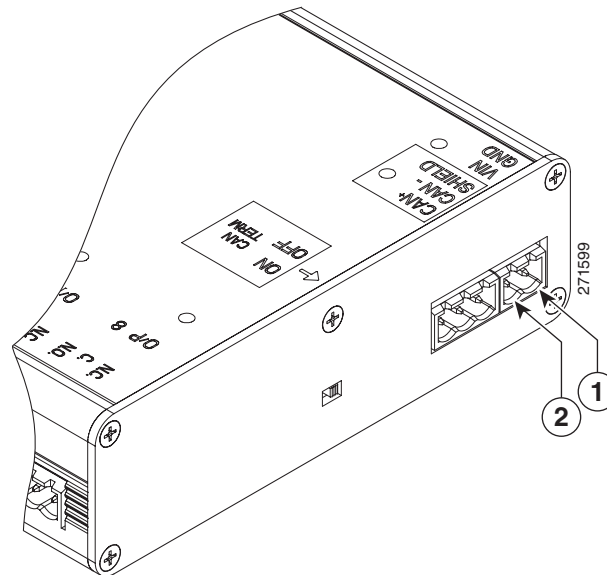
## Procedure

To install the module, perform the following procedure:

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- Step 1** Mount the module to a wall. See the [“Mounting a Gateway or Optional Module” section on page 1-14](#) for more information.
- Step 2** Connect the module to the DC power source:
- a. Insert a two-pin connector plug into the DC power port ([Figure 5-5](#))
  - b. Connect the Voltage In (VIN) and ground (GND) wires.

See the [“Power Options and Requirements” section on page 1-12](#) for more information.

**Figure 5-5 Power Connections for the Cisco Output Module**



<b>1</b>	DC power GND (ground) Connects the DC ground wire to the module.
<b>2</b>	DC power Voltage In (VIN) Connects the DC Voltage In (VIN) wire to the module.

- Step 3** Connect the module to the CAN bus:
- a. Insert a three-pin connector plug into the CAN1 port, as shown in [Figure 5-6](#).
  - b. Connect the CAN wires to the CAN bus, as shown in [Figure 5-7](#)
  - c. Turn the CAN terminator ON if the device is the last device in a CAN wiring bus.



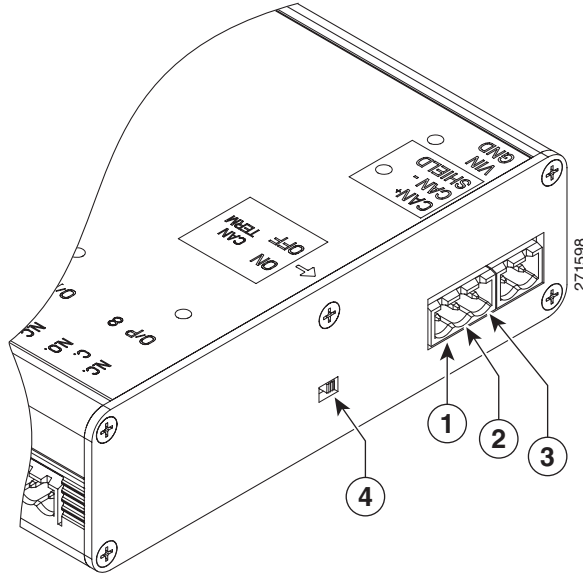
**Note** The CAN terminator switch is included on the Reader, Input and Output modules only (the Gateway is always the first device in the CAN bus). Set the terminator switch to OFF for all other modules in the CAN bus.



**Note** The CAN2 interface is not supported in this release.

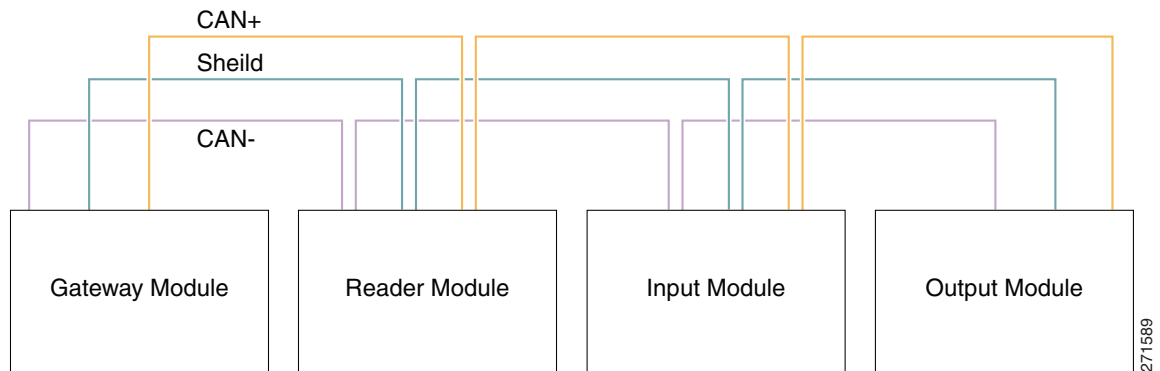
See the [“Optional Expansion Modules” section on page 1-5](#) for more information.

**Figure 5-6 CAN Connections: Input and Output Modules**



<b>1</b>	CAN+	Connects to the positive terminal of the CAN bus.
<b>2</b>	CAN-	Connects to the negative terminal of the CAN bus.
<b>3</b>	Shield	Connects to GND and/or Shield.
<b>3</b>	CAN Terminator	Turn the terminator ON if the device is the last device in a CAN wiring bus.

**Figure 5-7 CAN Bus Wiring**



**Step 4** Connect output devices to the module:

- a. Insert three-pin connector plugs into the output ports.
- b. Connect the wires from the output devices:
  - Common (C) is always used, and either NC or NO is used to complete the connection.



- If the relay is normally open, use the C & NO connections. The circuit is closed when triggered.
- If the relay is normally closed, use the C & NC connections. The circuit is opened when triggered.

**Step 5** See the [Cisco Physical Access Manager User Guide](#) for information to configure the module ports.

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