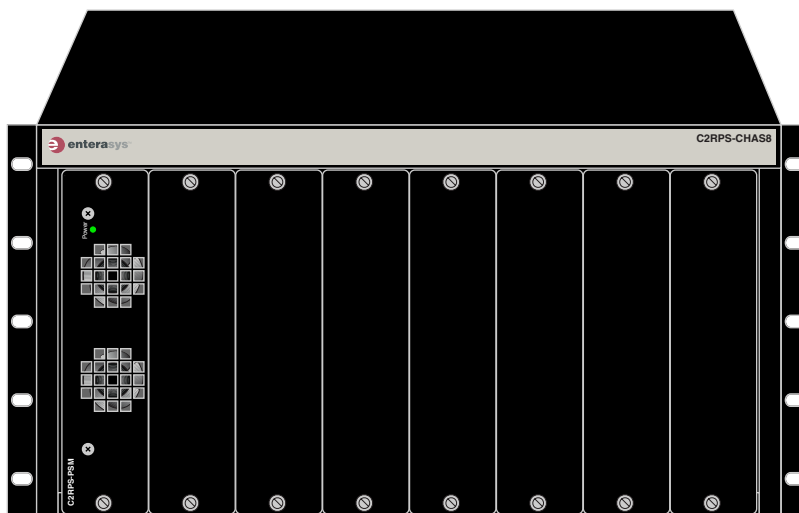


SecureStack C2 Redundant Power System C2RPS-SYS Installation Guide



Caution: Do not use this product with SecureStack C2 PoE devices. Any SecureStack C2 device with a “P” suffix in the model number (C2xxxx-xxP) indicates a SecureStack C2 PoE-compliant device and is not compatible with this power system.

Precaución: El RPS no es compatible con switches SecureStack C2 con PoE. No intente conectar el cable de corriente del RPS a ningún switch SecureStack C2 que tenga el sufijo “P” en el nombre del modelo, tal como C2xxxx-xxP. De lo contrario, el dispositivo puede dañarse.



Electrical Hazard: Only qualified personnel should perform installation procedures.

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50 Minuteman Road
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Manufacturer's Address: **50 Minuteman Road**
Andover, MA 01810
USA

European Representative Address: **Enterasys Networks, Ltd.**
Nexus House, Newbury Business Park
London Road, Newbury
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Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
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EN 61000-3-2
EN 61000-3-3
EN 55024
EC Directive 73/23/EEC
EN 60950

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About this Guide

This guide provides an overview, installation and troubleshooting instructions, and specifications for the Enterasys SecureStack C2RPS-SYS redundant power system components: chassis (C2RPS-CHAS8), power supply module (C2RPS-PSM), DC power cables (C2RPS-PSM Cable), and AC power cords.



Note: In this document, the following terms are used:

- *RPS* refers to the complete SecureStack C2RPS-SYS redundant power system.
- *Chassis* refers to the C2RPS-CHAS8 chassis.
- *PSM* refers to the C2RPS-PSM power supply module.
- *PSM cable* refers to the C2RPS-PSM Cable (12 Vdc power cable).

Using This Guide

Read through this guide completely to familiarize yourself with its contents and gain an understanding of the features and capabilities of the RPS components. A general working knowledge of data communications networks is helpful when setting up an RPS.

Structure of This Guide

This preface includes an overview of this guide and details the conventions used in this guide. This guide is organized as follows:

[Chapter 1, Introduction](#), discusses the features and capabilities of the RPS. This chapter also provides the instructions for obtaining help from Enterasys Networks, if needed.

[Chapter 2, Installation](#), provides instructions to install an RPS into a standard 19-inch rack. This involves installing the chassis, one to eight PSMs, PSM interconnecting cables, and AC power cords.

[Appendix A, Specifications](#), provides the specifications for the chassis, PSM, PSM cable, Redundant Power Supply connector pinout descriptions, and Compliance Standards.

Using the SecureStack C2 Manual Set

Other manuals have been developed for the SecureStack C2 non-PoE switch devices that can be connected to the RPS for power redundancy.



Caution: The RPS does not support PoE-compliant SecureStack switches. Do not try to connect the power cable from this RPS to any SecureStack switch with a “P” suffix in the model name, such as C2xxxx-xxP. Otherwise, damage to the device may result.

Precaución: El RPS no es compatible con switches SecureStack C2 con PoE. No intente conectar el cable de corriente del RPS a ningún switch SecureStack C2 que tenga el sufijo “P” en el nombre del modelo, tal como C2xxxx-xxP. De lo contrario, el dispositivo puede dañarse.

The SecureStack C2 switch manuals explain how to install the switch device, connect network cable segments to the SecureStack switch device, and configure the switch device using the command line interface commands described in the *SecureStack C2 Configuration Guide*.



Note: Connection of the RPS system does not require the reconfiguration of the connected Ethernet Switch.

Each manual is written for qualified personnel who are responsible for installing the switch device and also have a general working knowledge of data communications networks and their physical layer components.

Conventions Used in This Guide

The following conventions are used in this guide:



Note: Calls the reader's attention to any item of information that may be of special importance.



Caution: Contains information essential to avoid damage to the equipment.

Precaución: Contiene información esencial para prevenir dañar el equipo.

Achtung: Verweist auf wichtige Informationen zum Schutz gegen Beschädigungen.



Electrical Hazard: Warns against an action that could result in personal injury or death due to an electrical hazard.

Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

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Warning: Warns against an action that could result in personal injury or death.

Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte.

Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!

Introduction

This chapter provides a functional overview of the Redundant Power System (RPS), which includes the following:

For information about...	Refer to page...
RPS Overview	1-1
C2RPS-CHAS8 Chassis	1-2
C2RPS-PSM Power Supply Module	1-3
RPS Deployment Strategies	1-4
Getting Help	1-5

RPS Overview

The RPS provides a simple and economical solution for providing a backup power source for up to eight SecureStack Ethernet switch devices. When a PSM is connected to a switch device, the PSM continuously monitors the internal power supply of the switch device. If a power interruption is detected, the PSM is automatically triggered to provide power for the switch device, preventing an interruption in network traffic.

The end result is a more reliable network infrastructure, protecting the network from a single source of failure from a network device power supply.

Depending on your system requirements, the RPS can consist of the following components to support up to eight switch devices:

- One C2RPS-CHAS8 chassis
- Up to eight C2RPS-PSMs
- Up to eight AC power cords (one per C2RPS-PSM)
- Up to eight C2RPS-PSM Cables (one per C2RPS-PSM)



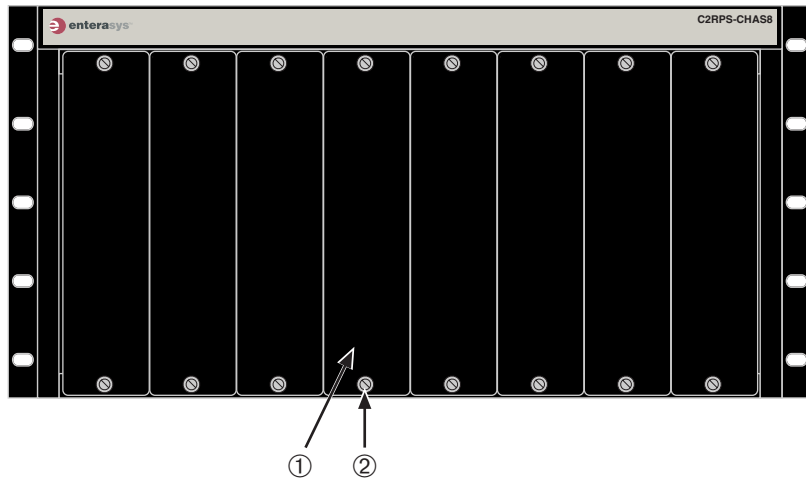
Note: The chassis is shipped with one PSM. Additional PSMs are ordered separately. Each PSM is shipped with an interconnecting C2RPS-PSM Cable and an AC power cord.

C2RPS-CHAS8 Chassis

The chassis is an eight-slot frame without AC power connections or electronics. The chassis can be installed in a standard 19-inch rack and populated with up to eight PSMs. Each PSM operates independently.

[Figure 1-1](#) shows the front view of the chassis with covers only; [Figure 1-2](#) shows the rear view if the chassis was fully populated with PSMs.

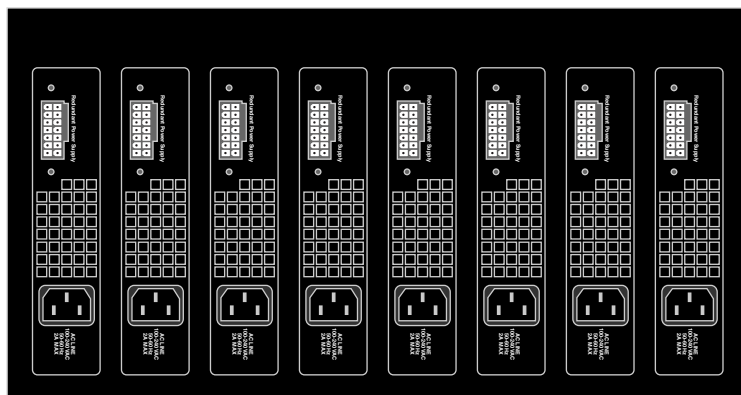
Figure 1-1 SecureStack C2RPS-CHAS8 (front view without PSMs)



1 Power supply slot cover (8)

2 Captive screw (2 per cover)

Figure 1-2 SecureStack C2RPS-CHAS8 (rear view with eight PSMs)



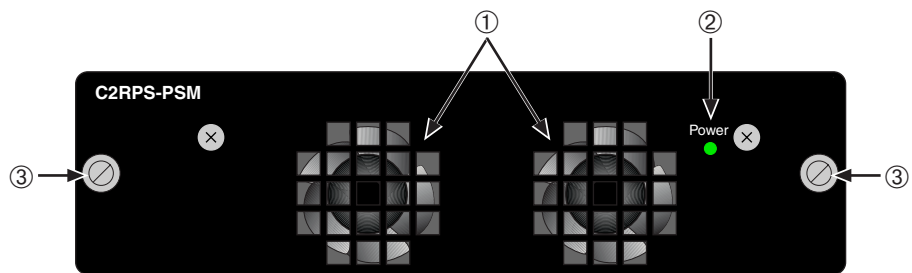
C2RPS-PSM Power Supply Module

The PSM provides the following:

- Hot swap capability.
- One 12 Vdc, 150 Watts of maximum-continuous power output to a connected SecureStack C2 switch device.
- Front panel Status LED that indicates if the PSM is operating correctly.

Figures 1-3 and 1-4 show the front and rear view of the C2RPS-PSM.

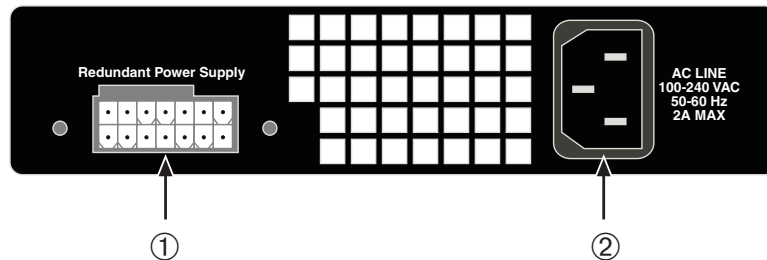
Figure 1-3 C2RPS-PSM (front view)



- 1 Intake cooling fans
2 AC power LED

- 3 Captive screws (2)

Figure 1-4 C2RPS-PSM (rear view)



- 1 Redundant Power Supply connector
(12 Vdc and PSM status outputs)

- 2 AC input connector

RPS Deployment Strategies

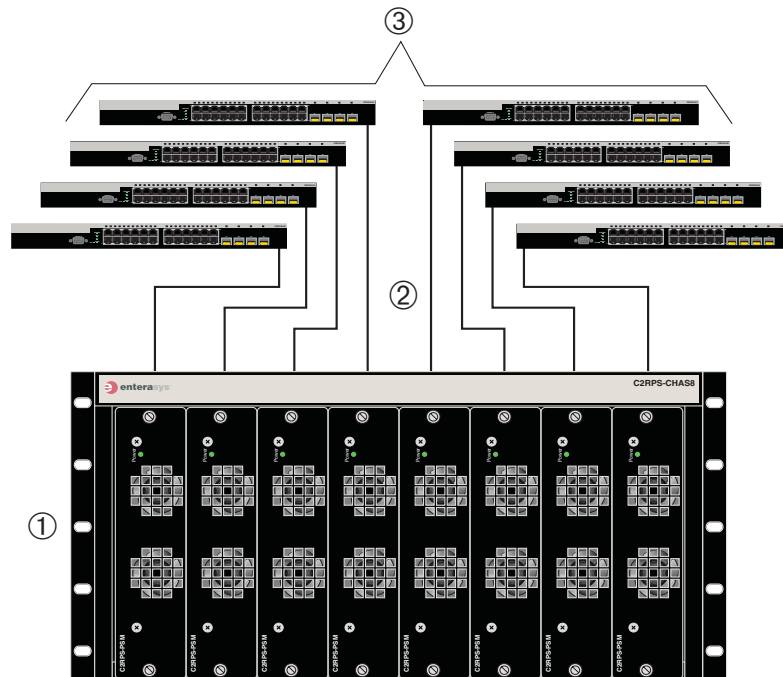
The RPS can be deployed in a variety of situations with mission-critical applications. For example:

- For use in a voice and data network where switches are connected to IP phones and PCs. Connecting an RPS to the switches can prevent voice network failures caused by switch failures.
- For use in traditional data 10/100/1000 Ethernet switches carrying mission-critical data.

These applications would typically use one RPS to support up to eight SecureStack C2 switch devices as shown in [Figure 1-5](#). If a SecureStack C2 switch device experiences an internal power-supply failure, the following occurs:

1. The SecureStack C2 switch device internal DC-power source is immediately switched over from the internal DC-power supply to the RPS DC-power input.
2. The SecureStack C2 switch device saves this status information for future retrieval, if necessary.

Figure 1-5 RPS Supporting a Group of Switches (up to eight)



- 1 C2RPS-CHAS8 chassis (front view with eight PSMs)
- 2 C2RPS-PSM Cables for 12 Vdc and status information from PSMs
- 3 SecureStack C2 Ethernet switches

Getting Help

For additional support related to the devices or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/support
Phone	603-332-9400 1-800-872-8440 (toll-free in U.S. and Canada) For the Enterasys Networks Support toll-free number in your country: http://www.enterasys.com/support/gtac-all.html
Internet mail	support@enterasys.com To expedite your message, please type [C-SERIES] in the subject line.

To send comments or suggestions concerning this document to the Technical Publications Department:

techpubs@enterasys.com

To expedite your message, please include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Installation



Electrical Hazard: Only qualified personnel should perform installation procedures.

Advertencia eléctrica: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter provides the installation instructions to install all the components of an RPS. To correctly install an RPS, follow the order of information listed below.

For information about...	Refer to page...
Required Tools	2-1
Unpacking Chassis and Power Supply Module(s)	2-1
Installing C2RPS-PSMs	2-2
Installing C2RPS-CHAS8 into the Rack	2-4
Connecting the PSM Cables and AC Power Cords	2-6

Required Tools

A flat-blade screwdriver is required to install the C2RPS-CHAS8 and C2RPS-PSMs.

Unpacking Chassis and Power Supply Module(s)

The C2RPS-CHAS8 and C2RPS-PSM are shipped separately. To unpack these devices proceed as follows:

1. Open the box and remove the packing material protecting the devices.
2. Verify the contents of each carton and compare the contents shipped with those listed in [Table 2-1](#) and [Table 2-2](#).

3. Perform a visual inspection of the switch devices for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to “[Getting Help](#)” on page 1-5 for details.

Table 2-1 Contents of C2RPS-CHAS8 Carton

Item	Quantity
C2RPS-CHAS8	1
SecureStack C2 Redundant Power System Installation Guide (9033977-xx)	1
Release Notes	1

Table 2-2 Contents of C2RPS-PSM Carton

Item	Quantity
C2RPS-PSM 150 Watt DC Power Supply Module	1
USA, NEMA Power Cord	1
C2RPS-PSM Cable	1
Notice Card	1

Installing C2RPS-PSMs



Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

When you receive your C2RPS-CHAS8 chassis, a coverplate will be in place over each power-supply slot.

To install the PSMs, refer to [Figure 2-1](#) and proceed as follows:

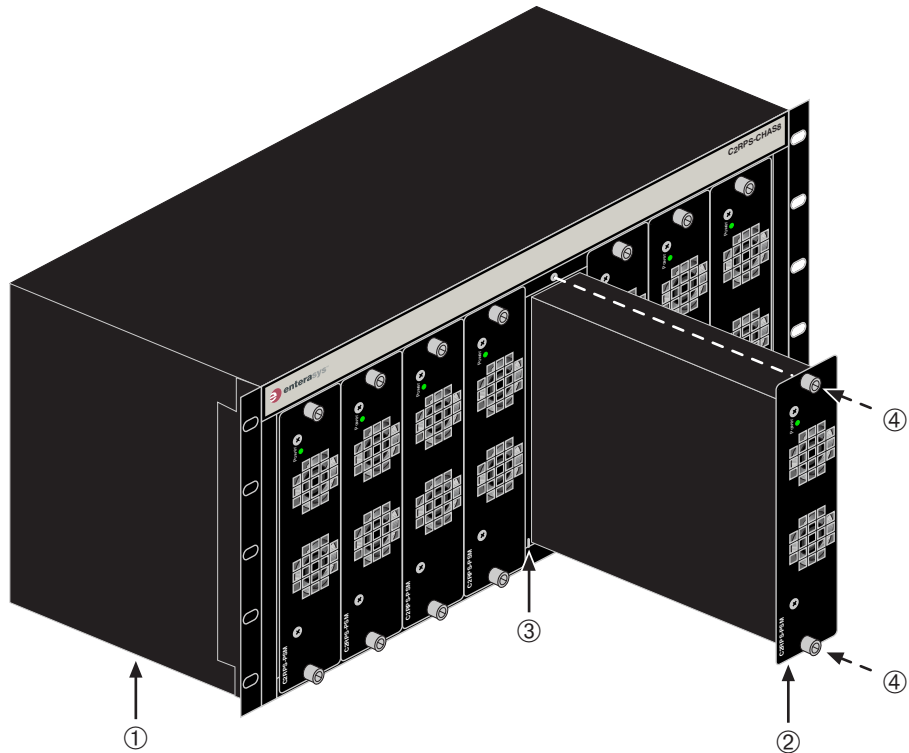


Note: To prevent EMI leakage from the chassis, keep coverplates installed over any empty power supply slots.

1. Place the chassis on a sturdy flat surface and remove the coverplates from the slots where you plan to install PSMs.
2. Align the PSM with one of the slots, then slide the PSM forward until its front panel is flush against the chassis front panel.
3. Fasten the PSM to the chassis using the captive screws.
4. Repeat steps 2 and 3 for each additional PSM.

- Proceed to “[Installing C2RPS-CHAS8 into the Rack](#)” on page 2-4 for the rack mount installation instructions.

Figure 2-1 C2RPS-PSM Installation



- | | |
|---------------|-----------------------------|
| 1 C2RPS-CHAS8 | 3 Chassis power supply slot |
| 2 C2RPS-PSM | 4 Captive screws (2) |

Replacing an Installed C2RPS-PSM

To replace a PSM installed in an operating system, proceed as follows:



Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

- Unplug the AC power cord of the PSM from the AC power source first, then from the rear of the PSM.
- Loosen the captive screws securing the PSM until it is released from the chassis front panel.

3. Pull the PSM out and remove it from the chassis.
4. Repeat steps 1 through 3 for each additional PSM you plan to remove.



Note: If you plan to remove and not replace a C2RPS-PSM, immediately reinstall coverplates over any empty power supply slots to prevent EMI leakage from the chassis.

To install a PSM, proceed as follows:

1. Align the PSM with the slot, then slide the PSM forward until its front panel is flush against the chassis front panel.
2. Fasten the PSM to the chassis using the captive screws.
3. Perform steps 1 and 2 for each PSM being replaced. When completed, proceed to [“Connecting the PSM Cables and AC Power Cords”](#) on page 2-6.

Installing C2RPS-CHAS8 into the Rack

To install the chassis into a 19-inch rack, you need ten user-supplied screws to fasten the chassis to the rack rails.

After installing the PSM(s) as described back in [“Installing C2RPS-PSMs”](#) on page 2-2, rack mount the chassis as follows:

1. Refer to the installation guidelines ([“Guidelines for Rackmount Installation”](#) on page 2-4).
2. Install the chassis into the rack ([“Rack Mounting the Chassis”](#) on page 2-5).
3. Connect the PSM cables and AC power cords ([“Connecting the PSM Cables and AC Power Cords”](#) on page 2-6).

Guidelines for Rackmount Installation

The installation site must be within reach of the network cabling and meet the requirements listed below:

- Chassis placement close enough to connect the 2-meter (6.6-foot) PSM cables from the PSMs to the AC power source.
- Up to eight three-pronged power receptacles capable of delivering the current and voltage specified in [“C2RPS-PSM Specifications”](#) on page A-2. Up to eight AC outlets on independently-fused circuits must be within 182 centimeters (6 feet) from the installation site. If there is an AC power source failure, this will prevent the powering down of PSMs due to a single source power failure.
- Power cords and type of outlet are dependent on the country. In the United States, one power cord with an NEMA 5-15P plug is provided with each C2RPS-PSM.

- An ambient temperature of between 5°C (41°F) and 40°C (104°F) must be maintained at the installation site with fluctuations of less than 10°C (18°F) per hour.



Caution: To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 101.6 cm (4.0 in.) at the front and rear of the chassis.

Precaución: Para asegurar una buena ventilación y evitar que el sistema se sobrecaliente, deje un espacio mínimo de 10.16 cm (4 pulgadas.) con respecto a la parte delantera y trasera del chasis.



Warning: Before installing the chassis into a rack, ensure that the rack can support the device(s) without compromising the stability of the rack. Otherwise, personal injury and/or equipment damage may result.

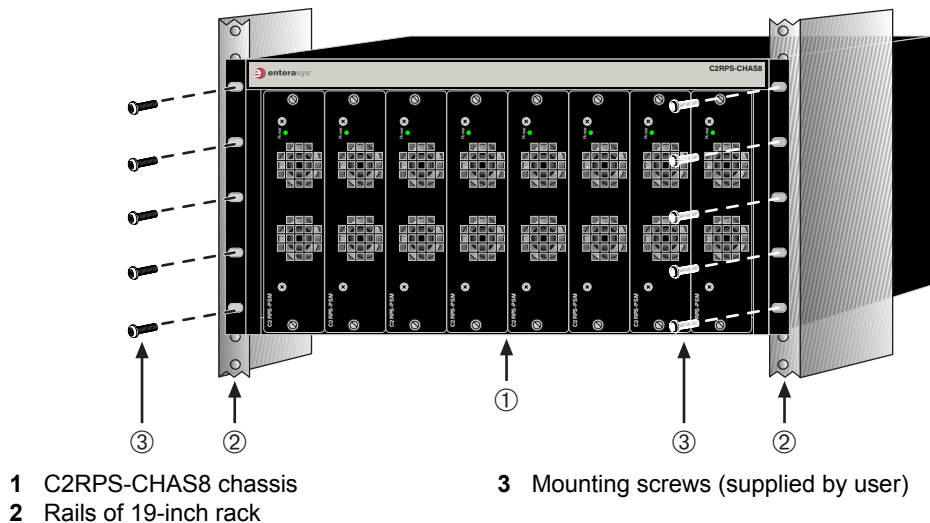
Advertencia: Antes de instalar el chasis en un rack, asegurarse que el rack puede soportar el(los) dispositivo(s) sin comprometer la estabilidad del mismo. De otra forma puede suceder algún tipo de daño personal o del equipo.

Warnhinweis: Schützen Sie sich vor Verletzungen und Geräteschaden, überzeugen Sie sich vor der Installation des Chassis in das Rack, von dessen Stabilität.

Rack Mounting the Chassis

Refer to [Figure 2-2](#) and proceed as follows to install the chassis into a 19-inch rack:

1. Position the chassis between the vertical frame members and align the mounting holes in the chassis brackets with those in the rack frame.
2. Fasten the chassis securely to the frame using ten mounting screws (user-supplied).

Figure 2-2 Fastening the C2RPS-CHAS8 to the Rack

Connecting the PSM Cables and AC Power Cords

The PSMs are connected to the SecureStack Ethernet switch devices using PSM cables.

To connect the PSMs, proceed as follows:

1. Connect one end of the PSM cable (shown in [Figure 2-3](#)) to the Redundant Power Supply connector on the switch device. Then connect the other end to the Redundant Power Supply connector at the rear of the PSM shown in [Figure 2-4](#) and [Figure 2-5](#).
2. Connect a standard AC power cord to the AC input power connector on the PSM shown in [Figure 2-4](#), then plug the AC power cord into the main AC power outlet.
3. The green Power LED on the front of the PSM will glow to indicate a successful connection. If the LED remains off, proceed as follows:
 - a. Check the AC power cord connection at the AC power source and make sure the power source is within specification.
 - b. Check the AC power connection to the PSM.
 - c. Swap the AC power cord with a known good one.
 - d. If the green LED continues to remain off, contact Enterasys Networks. Refer to [“Getting Help”](#) on page 1-5 for instructions. Otherwise, go to step 4.
4. If two or more power supplies are being installed, repeat steps 1 through 3 for each PSM.

5. On certain switches, an LED indicator will show that a redundant power supply is now in operation.



Note: No change in switch configuration is necessary for this installation.

Figure 2-3 C2RPS-PSM Cable

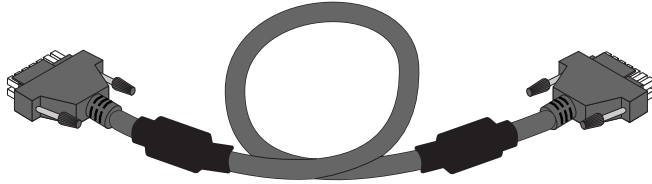
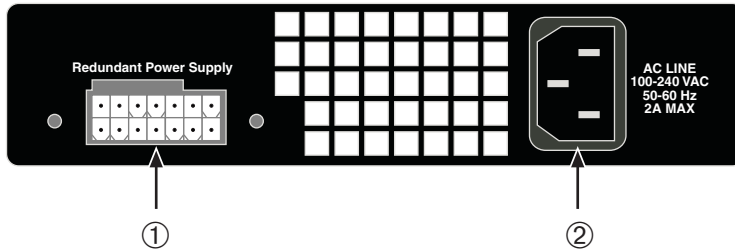


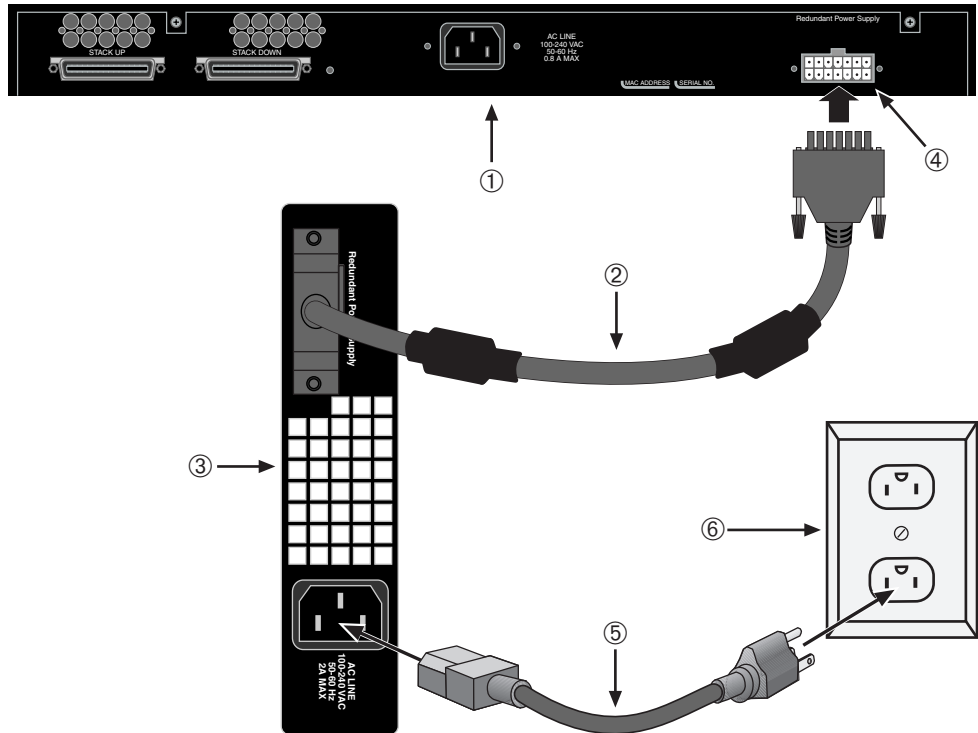
Figure 2-4 Power Connectors on C2RPS-PSM (rear view)



1 Redundant Power Supply connector

2 AC power connector (rear of chassis)

Figure 2-5 C2RPS-PSM Cable and AC Power Cord Connections



- | | |
|--|---|
| 1 Switch device | 4 Switch device Redundant Power Supply connector |
| 2 PSM cable | 5 AC power cord (type varies depending on country) |
| 3 PSM Redundant Power Supply connector | 6 AC power outlet with ground connection (type varies depending on country) |



Specifications

This appendix provides information about the following:

For information about...	Refer to page...
C2RPS-CHAS8 Chassis Specifications	A-1
C2RPS-PSM Specifications	A-2
C2RPS-PSM Redundant Power Supply Output Connector	A-3
Compliance Standards	A-3

Enterasys Networks reserves the right to change the specifications at any time without notice.

C2RPS-CHAS8 Chassis Specifications

[Table A-1](#) provides the physical specifications for the C2RPS-CHAS8.

Table A-1 C2RPS-CHAS8 Specifications

Item	Specification
Power supply slots	Eight slots for optional C2RPS-PSMs
Dimensions without mounting brackets	22.26 H x 44.0 W x 26.4 D (cm) 8.77 H x 17.3 W x 10.4 D (in.)
Net Weight (Unit Only)	5.27 kg (11.6 lb)
Gross Weight (Packaged Unit)	6.5 kg (14.3 lb)

C2RPS-PSM Specifications

Refer to [Table A-2](#) for the input/output port specifications.

Table A-2 C2RPS-PSM Specifications

Item	Specification
Electrical	
AC Input Frequency Range	47 - 63 Hz
AC Input Voltage Range	85 - 264 Vac
Output Voltage	12 Vdc
Output Current	1.0 A min., 8.5 A or 13.0 A max.
Maximum Output Power	102 W or 156 W continuous
Physical	
Dimensions	19.6 H x 5.2 W x 25.7 D (cm)
	7.7 H x 2.04 W x 10.1 D (in.)
Net Weight (Unit Only)	1.75 kg (3.85 lb)
Gross Weight (Packaged Unit)	3.20 kg (7.04 lb)
MTBF	300,000 Hours

C2RPS-PSM Redundant Power Supply Output Connector

For pin location and function, refer to [Figure A-1](#) and [Table A-3](#), respectively.



Note: The following information is for troubleshooting purposes only. For proper operation, do not use any other cable except the C2RPS-PSM Cable. This cable is specially designed for this application and meets all necessary Regulatory and Safety standards. The use of non-approved cables will void your warranty.

Figure A-1 C2RPS-PSM Redundant Power Supply Connector Pin Locations

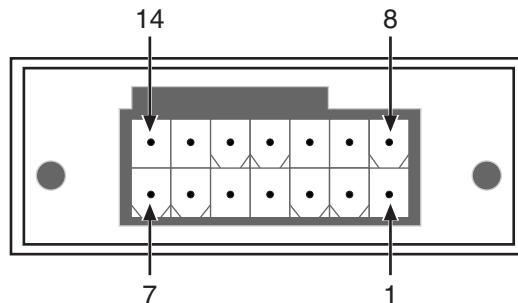


Table A-3 C2RPS-PSM Redundant Power Supply Connector Pin Functions

Pin Number	Function
1	Ground
2	No connection
3	12 Vdc Output
4	12 Vdc Output
5	12 Vdc Output
6	12 Vdc Output
7	Ground
8	Ground
9	No connection
10	No connection
11	Status 1
12	Status 2
13	Power good
14	Ground

Compliance Standards

The C2RPS-PSM meets the safety and electromagnetic compatibility (EMC) requirements listed in [Table A-4](#):

Table A-4 Compliance Standards

Item	Standard
Safety	UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, and IEC 60950
Electromagnetic Compatibility (EMC) (Applies to RPS system with eight modules installed and working with eight network devices.)	47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024; AS/NZS CISPR 22, and VCCI V-3

