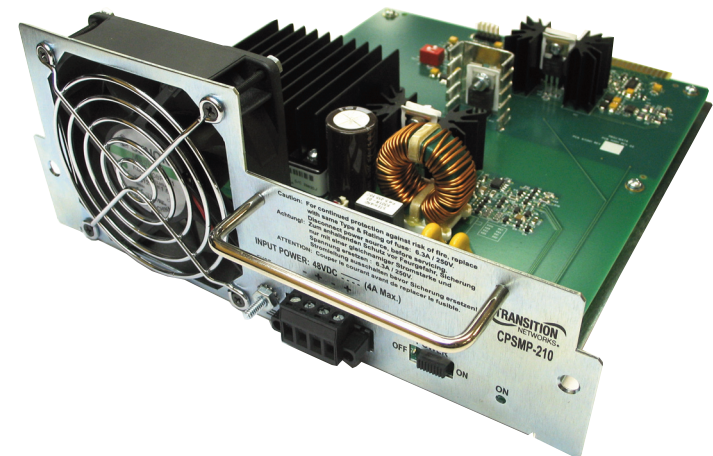




CPSMP-210

48VDC Power Supply

**PointSystem™ Chassis:
CPSMC18xx-2xx accessory
CPSMC19xx-100 accessory**



**User Manual
33187.E**

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Cautions and Warnings

Definitions

Cautions indicate potential damage to equipment.

Warnings indicate potential hazard or injury to people.

Cautions and warnings in this manual

Cautions and Warnings are explained here and placed throughout this manual where appropriate.

⚠ CAUTION: While installing or servicing the power supply, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage to, or failure of the power supply.

⚠ WARNING: Do not connect the power supply to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock, even death.

⚠ WARNING: The power supply has a provision for grounding. Equipment grounding is vital to ensure safe operation. The installer must ensure that the power supply is properly grounded during and after installation. Failure to observe this warning could result in an electric shock, even death.

⚠ WARNING: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. Failure to observe this warning could result in an electric shock, even death.

⚠ WARNING: Turn the power supply and external power source OFF and ensure that the power supply is disconnected from the external power source before performing any maintenance. Failure to observe this warning could result in an electrical shock, even death.

⚠ WARNING: Ensure that the disconnect device for the external power source is OPEN (*turned OFF*) before disconnecting or connecting the power leads to the power supply. Failure to observe this warning could result in an electric shock, even death.

Description

Transition Networks' CPSMP-210 48VDC power supply can deliver power or provide optional, redundant DC power to the CPSMC18xx-2xx and the CPSMC19xx-100 PointSystem chassis.

Power supply component identification

See Figure 1:

- Fuse
- Two-position configuration switch sets power-supply functionality
- Power Supply Board
- Power ON LED (*green*)
- ON/OFF switch, when in the ON position power is supplied to the PointSystem chassis
- Handle for installing and removing the power supply
- ± Power-lead terminal block connector
- Ground Screw
- Fan

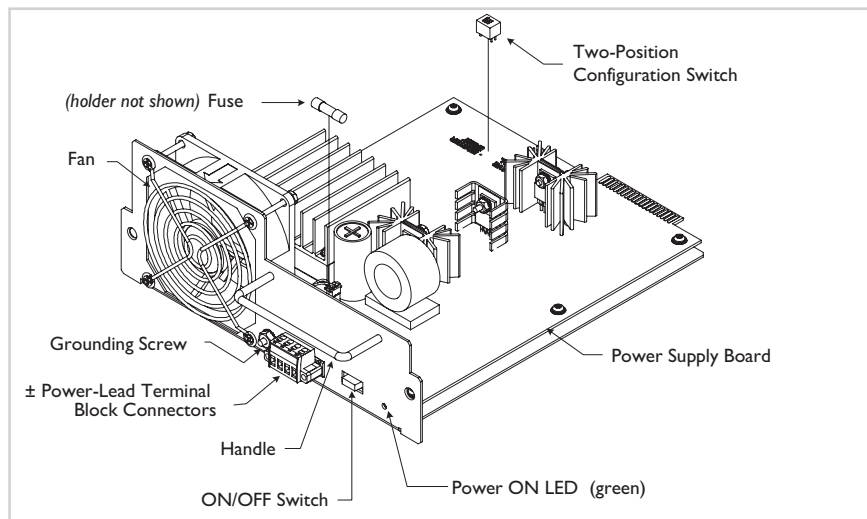


Figure 1: Power Supply Components

Notices

- The CPSMP-210 48VDC power supply must be installed by qualified technical personnel only. Transition networks assumes no responsibility for the improper installation, set up or use of these power supplies.
- The information in this user's guide is subject to change. For the most up-to-date information, see the user's guide on-line at www.transition.com.

Installation

IMPORTANT

- All installation and service must be performed by qualified personnel only.
- Read and follow all CAUTION and WARNING notices, instructions marked on the product, including this manual.

The CPSMP-210 power supply can replace an existing DC power supply. Either can be installed as the redundant power supply in an AC- or DC-powered PointSystem chassis.

⚠ CAUTION: While installing or servicing the power supply, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage to, or failure of the power supply.

Configuration switch

The power supply has a two-position configuration switch, shown in Figure 2.

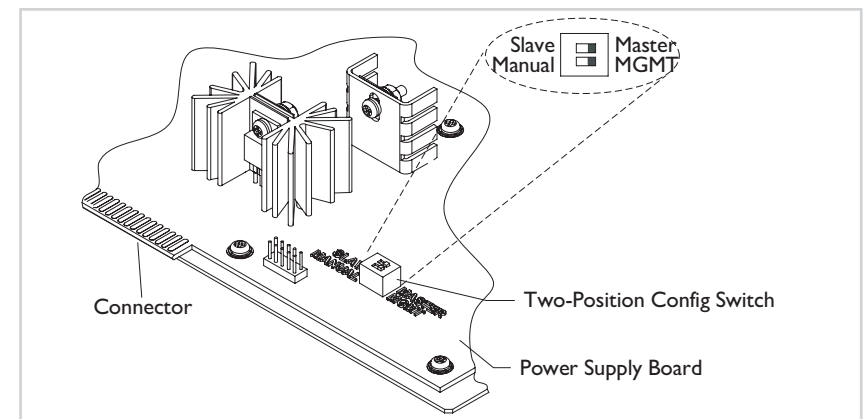


Figure 2: Configuration Switch Location

Configuration switch-position explanations

The configuration switch establishes PointSystem software or manual control of master/slave switch settings of the power supply.

- When the configuration switch is in the *management* position, the power-supply configuration can be set to master or slave via software.
- When the configuration switch is in the *manual* position, the power-supply configuration is set manually to master or slave and cannot be changed via software.
- When the configuration switch is in the *master* position, the power supply is the primary power source for the chassis.
- When the configuration switch is in the *slave* position (*additional power supply*), the power supply is used for redundancy (*failover*) purposes, in the event of a master power-supply failure.

Installation—continued

Configuring two power supplies in one chassis

To set up power supply redundancy, set one power supply to master, (*which supplies power to the entire chassis*) and the other to slave. In this mode, the slave power supply is in stand-by mode and takes over in the event of a master (*primary*) power-supply failure. See Figure 3.

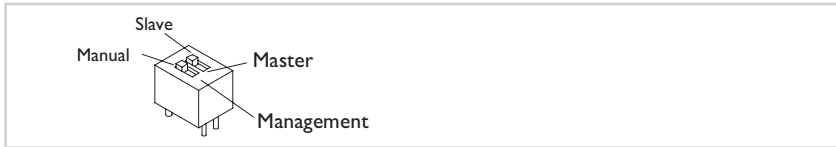


Figure 3: Configuration Switch Positions

IMPORTANT:

- In a chassis with multiple power supplies, one power supply must be set to master. If both modules are set to slave neither will supply sufficient power to the chassis.
- Power supply load sharing (*configuring multiple supplies as masters in a chassis*) is not recommended (*no load balancing capability*).

Installing the power supply in a PointSystem chassis

⚠ WARNING: Do not connect the power supply to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock, even death.

Note: The power supply module can be hot swapped (*i.e., swapped while the chassis is in operation*) provided the power supply's ON/OFF switch is in the OFF position, and it has been disconnected from its external power source.

To install the power supply in either the CPSMC18xx-2xx or the CPSMC19xx-100 PointSystem chassis:

1. Slide the power supply ON/OFF switch to OFF, as shown in Figure 4.

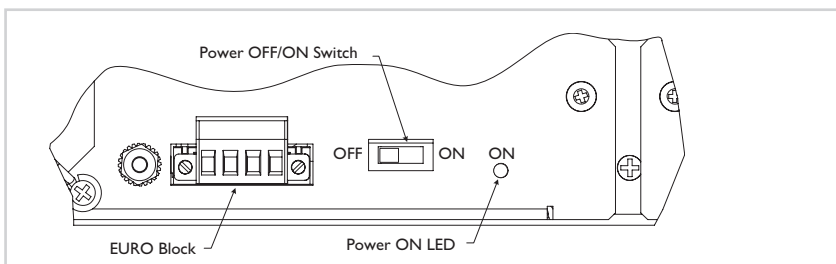


Figure 4: Power Supply Power Rear View

Installation—continued

Installing the power supply into a PointSystem chassis—continued

2. Remove and keep the two (2) 6-32 philips head screws securing the power supply slot cover on the rear of the chassis and remove it. See Figure 5.

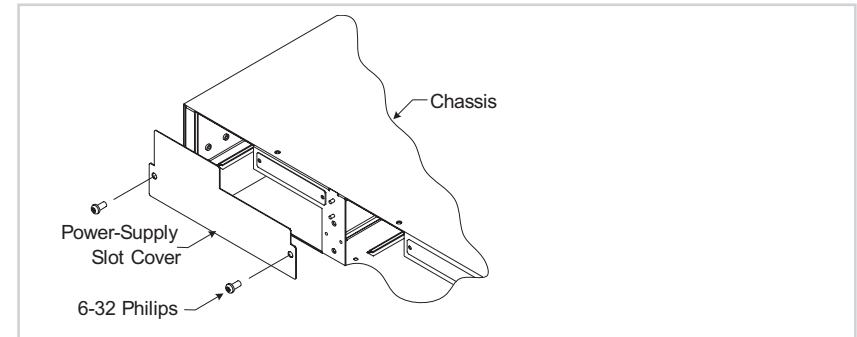


Figure 5: Remove Chassis Power-Supply Slot Cover

3. Set the power supply configuration switch to the desired positions. See Figure 6.

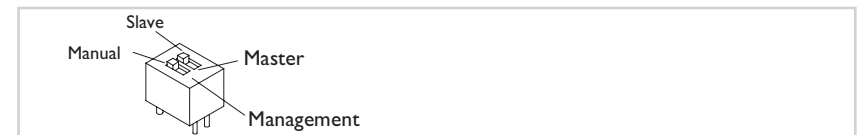


Figure 6: Configuration Switch

4. Slide the power supply into the installation slot as shown in Figure 7, aligning it with the installation guides—make sure that it is fully seated in the chassis slot.

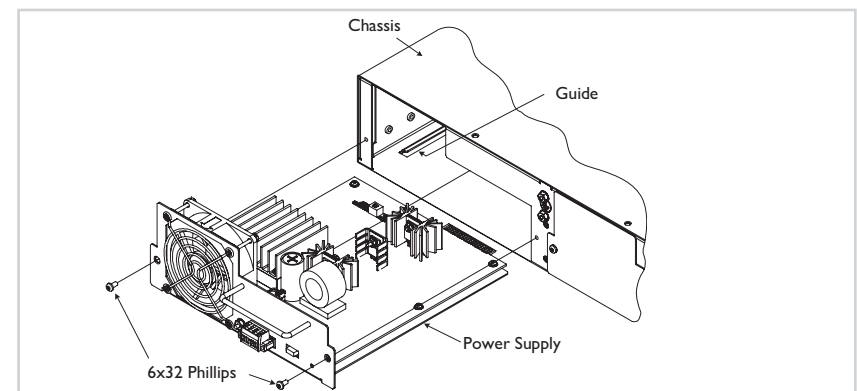


Figure 7: Power Supply Installation

5. Re-install and tighten the two (2) 6-23 philips head screws to secure the power supply to the chassis.

Installation—continued

Power source circuit requirements

The CPSMP 210 power supply must be connected to a Safety Extra Low Voltage (SELV) circuit. The installer must first determine the circuit's characteristics (*limited current, and hazardous energy levels, etc.*) and then install the power supply in accordance with local and national electrical codes.

Equipment ground

⚠ WARNING: The power supply has a provision for grounding. Equipment grounding is vital to ensure safe operation. The installer must ensure that the power supply is properly grounded during and after installation. Failure to observe this warning could result in an electric shock.

Disconnect requirements

⚠ WARNING: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. The approved disconnect device and branch-circuit protector must be suitable for the rated voltage and current specified. Failure to observe this warning could result in an electric shock, even death.”

⚠ WARNING: Ensure that the disconnect device for the external power source is OPEN (*turned OFF*) before disconnecting or connecting the power leads to the power supply. Failure to observe this warning could result in an electric shock, even death.

⚠ CAUTION: While installing or servicing the power supply, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage to, or failure of the power supply.

External overcurrent protection requirements

⚠ WARNING: In compliance with UL 60950-1 2nd Edition Clause 1.7.2.3 the maximum recommended ampere rating of an external overcurrent protection device or external disconnect device for the IONPS-D is 15 Amperes. However, this recommended maximum overcurrent protection device or external disconnect device rating is not to be considered a branch circuit or power distribution protection device specification in conflict with local and national electrical codes. Branch circuit and power distribution protection device requirements must take into account installation wiring requirements, wire size, type, environmental requirements and specifications, etc., as mandated by local and national electrical codes and recommendations and as such the value of the overcurrent protection device may be other than the recommended maximum 15 Amperes.

Connecting DC external power

To connect the external power to the power supply:

1. Slide the power ON/OFF switch to the OFF position.
2. Make sure that the external power source is turned OFF (*disconnect device open*).
3. First, connect the power source ground lead to chassis ground. See Figure 8.
4. Connect the positive DC lead to the terminal block “+.”
5. Connect the negative DC lead to the terminal block “-.”
6. Power UP the external power source (*disconnect device is closed*).
7. Slide the power ON/OFF switch to the ON position.
8. Verify that the power supply module is functional by noting that the fan is spinning and the power LED is lit. If not, see Troubleshooting.

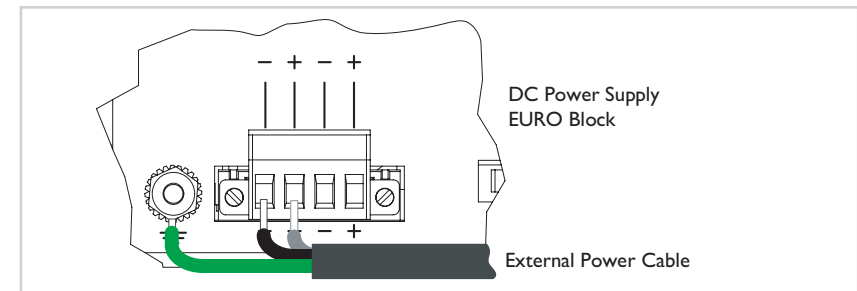


Figure 8: Power Supply Terminal Block and External Power Cable Connections

Redundant (*failover*) chassis power supply

Note: In a dual redundant power supply configuration, the fan will operate while the power supply's ON/OFF switch is in the OFF position. This provides extra chassis heat exhaust when the power supply is not in use, in stand-by mode.

IMPORTANT:

- In a multiple power supply chassis, one power supply configuration switch must be set to master . If both modules are set to slave neither will supply sufficient power to the chassis.
- Power supply load sharing (*configuring multiple supplies as masters in a chassis*) is not recommended (*no load balancing capability*).

To install and set up a second power supply for redundancy (*failover*):

1. Slide the power supply's power switch to the OFF position.
2. Make sure that the external power source is turned OFF.
3. Remove and keep the two (2) 6-32 philips head screws holding the slot cover. See Figure 9.

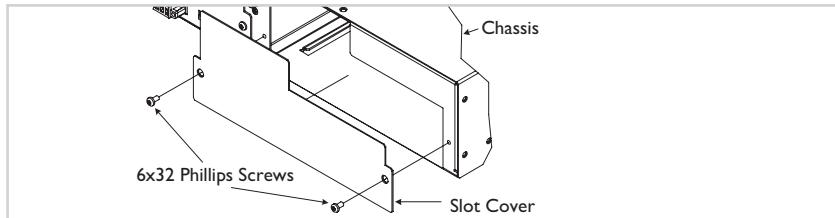


Figure 9: Chassis Power-Supply Slot Cover

4. Set up the second power supply's configuration switch.
5. Slide the second power supply in to the chassis, as shown in Figure 10.

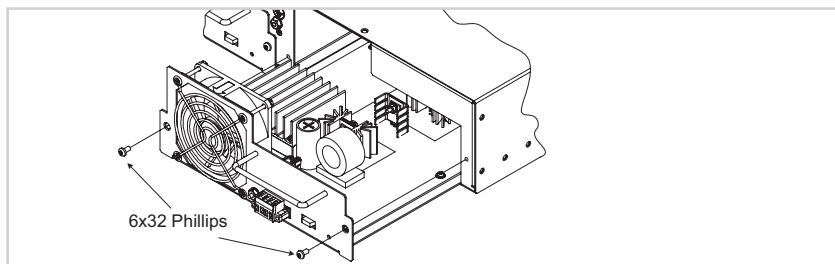


Figure 10: Power Supply Installation

6. Secure the power supply to the chassis with the two (2) 6-32 philips head screws.

Maintenance

⚠ WARNING: Do not connect the power supply module to the external power source before installing it into the chassis. Failure to observe this warning could result an electrical shock, even death.

Replacing the power supply

Note: The power supply module can be hot swapped (*i.e., swapped while the chassis is in operation*) provided that it is not connected to an external power source, and its ON/OFF switch is in the OFF position.

To replace the power supply module:

1. Slide the ON/OFF power switch to the OFF position.
2. Make sure that the external power source is turned OFF (*disconnect device open*).
3. Remove the ground wire last, disconnect the external power source leads.
4. Remove and keep the two (2) 6-32 philips head screws securing the power supply to the chassis.
5. Carefully pull the power supply from the chassis. See Figure 11.

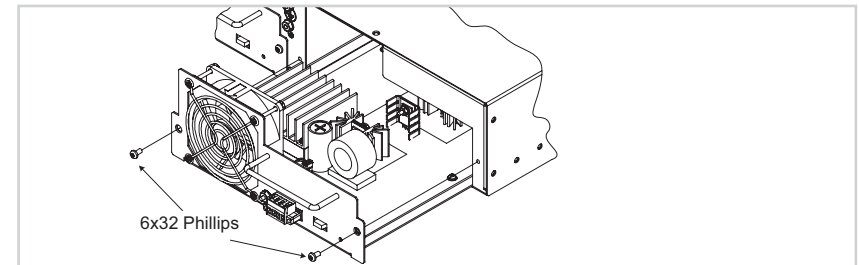


Figure 11: Power Supply Removal and Installation

Configuring the power supply

To configure and install the new power supply:

1. Set up the configuration switch shown in Figure 12. See page 5 for details.
2. Slide the power supply into the chassis slot, as shown in Figure 11 above.

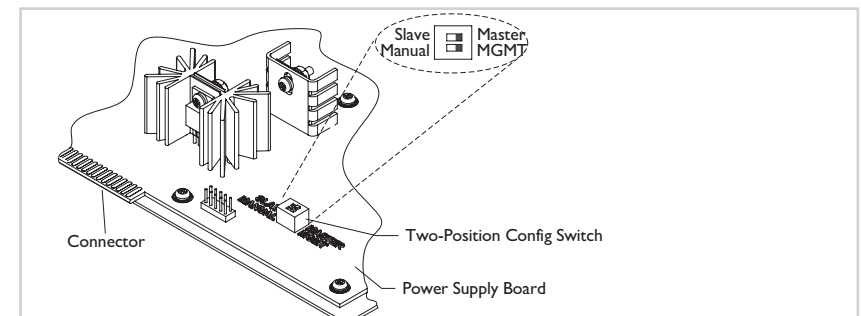


Figure 12: Power Supply configuration Switch

Maintenance—continued

Configuring the power supply—continued

3. Ensure that the module is firmly seated inside the chassis.
4. Re-install the two (2) 6-32 philips head screws.
5. See “Connecting external power,” (page 8) for instructions on re-connecting the power supply to the external power source.

Replacing the fuse

To replace the fuse in the power supply:

1. Turn the power supply OFF.
2. Remove the ground wire last, disconnect the power supply module from the external power source.
3. Remove and keep the two (2) 6-32 philips head screws that secure the module to the chassis.
4. Carefully pull the power supply from the chassis.
5. Carefully remove the fuse from the fuse holder, shown in Figure 13.

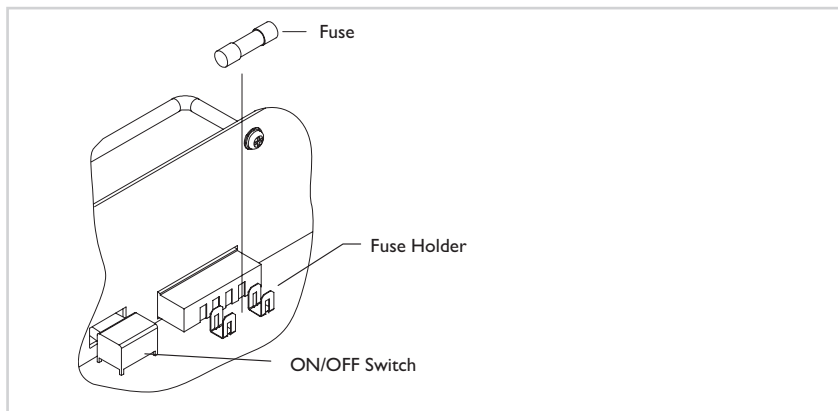


Figure 13: Fuse Holder with Fuse

6. Install a good fuse of the same size and with the same rating.
7. Carefully slide the power supply back into the chassis.
8. Ensure that the module is firmly seated inside the chassis.
9. Re-install the two (2) 6-32 philips head screws to secure the power supply to the chassis.
10. See “Connecting External Power” (page 8) for instructions on re-connecting the external power source.

Technical Specification

For use with Transition Networks Model CPSMP-210 or equivalent.

Standards:	FCC & CISPR Class A & B; CE Mark
Dimensions:	8.3" x 8.4" x 2.7" (211 mm x 213.4 mm x 69 mm)
Weight:	1 lb. (0.45 kg) approximately
Fuse:	6.3A 250V
CPSMP-210:	Power input: 48VDC (40–56VDC) @ 2.75A (typical for a fully-loaded chassis)
	Power output: 12VDC at 12.5A max
	Fuse: 250V, 6.3A
	Inrush current: 5A max
	Under voltage: lockout: 40V max, 38V min
	Efficiency: > 85%
	Total power: 23W typical
	dissipation:

Operating temp: 0°C to 60°C (32°F to 140°F)

Storage temp: -20°C to 85°C (-4°F to 185°F)

Humidity: 5% to 95%, non-condensing

Altitude: 0 to 10,000 feet

Warranty: Lifetime

This product specification is subject to change without further notice. For the most up-to-date information, see the user’s guide for this product on-line at www.transition.com.

Troubleshooting

If the power supply module fails or is not working properly, isolate and correct the problem by determining the answers to the following questions and then taking the indicated action.

1. Is the Power ON LED lit?

NO

Note: In a dual power supply chassis, make sure that one power supply's configuration switch is set to "master" and the second set to "slave." See "Configuring two power supplies in one chassis," See page 6.

If the power ON LED is not lit, check the following:

2. Is the power supply's ON/OFF switch in the ON position? If yes, and still no activity, slide the switch to the OFF position and move to step "3."
3. Is the power supply module properly connected to the external power source?
 - a. See "Connecting external power," page 8. If yes, move to step "b."
 - b. Is the disconnect device for the external power source properly installed and in the ON position?
 - If not, set it to ON and then slide the power supply ON/OFF switch to the ON position. If still no activity, slide the power supply switch to the OFF position and move to step "c."
 - c. Verify that the external power source voltage and current are at the proper levels. If not, correct the problem; if they are, move to step "4."
4. Check that the power supply's fuse is not blown? See "Replacing the fuse," on page 11. If it is not: Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.

Contact Us

Technical support

Technical support is available 24 hours a day.

US and Canada: 1-800-260-1312
International: 00-1-952-941-7600

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Chat live via the Web with Transition Networks Technical Support.
Log onto www.transition.com and click the Transition Now link.

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E-Mail

Ask a question anytime by sending an e-mail to our technical support staff at techsupport@transition.com

Address

Transition Networks

10900 Red Circle Drive, Minnetonka, MN 55343, U.S.A. Telephone: 952-941-7600;
Toll Free: 800-526-9267; fax: 952-941-2322

		Declaration of Conformity	
Name of Mfg:	Transition Networks 10900 Red Circle Drive Minnetonka MN 55343 U.S.A.		
Model:	CPSMP-210, DC Power Supply Module		
Part Number(s):	CPSMP-210		
Regulation:	EMC Directive 89/336/EEC		
Purpose: To declare that the CPSMP-210 to which this declaration refers is in conformity with the following standards: CISPR 22: (1997) w/A1: 2000 Class A & B; EN 55022: (1998) w/A1: 2000 & A2: 2003 Class A & B; EN 55024:1998 w/A1: 2001			
I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).			
 Stephen Anderson, Vice-President of Engineering			<u>June, 2009</u> Date

Compliance Information

CISPR22/EN55022 Class A & B

CE Mark

FCC regulations

This equipment has been tested and found to comply with the limits for a Class A & B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian regulations

This digital apparatus does not exceed the Class A&B limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A & B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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