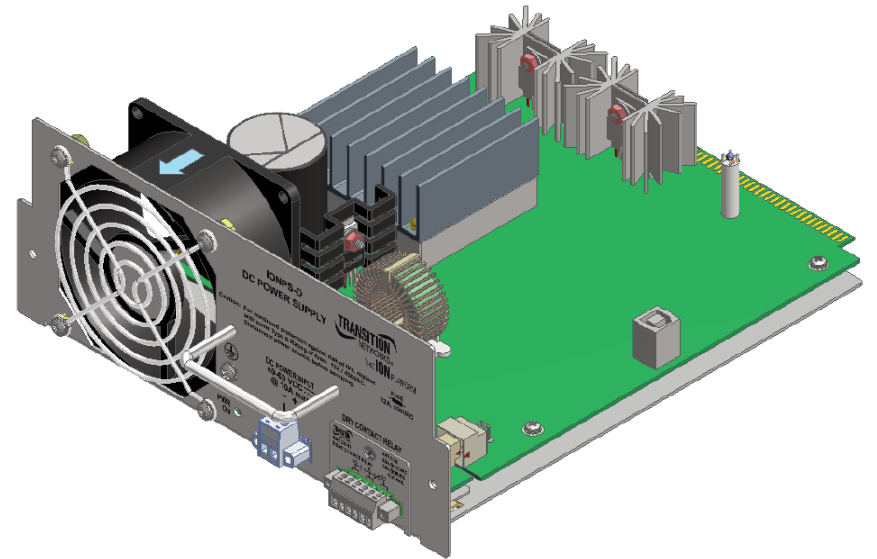




IONPS-D

40 – 60VDC Power Module



User Manual
33424.C

Table of Contents

Cautions and Warnings	3
Definitions	3
Cautions and warnings in this manual	3
Description	4
Power module component identification	4
Notices	4
Installation	5
Power source circuit requirements	5
Equipment ground	5
Disconnect requirements	5
Connecting external power	6
Redundant (<i>failover</i>) chassis power module	7
Power module redundancy	9
Maintenance	9
Replacing the power module	9
Replacing the fuse	11
Technical Specification	12
Troubleshooting	13
Contact Us	14
Compliance Information	15

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 module, 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 module.

⚠ WARNING: Do not connect the power module 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 module has a provision for grounding. Equipment grounding is vital to ensure safe operation. The installer must ensure that the power module 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 external power source OFF and ensure that the power module 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 module. Failure to observe this warning could result in an electric shock, even death.

Description

Transition Networks' IONPS-D power module can deliver power or provide optional, redundant DC power for the ION chassis.

Power module component identification

See Figure 1:

- 1 Fan
- 2 Functional Ground Terminal
- 3 Handle for installing and removing the power module
- 4 Power ON LED
- 5 2-position Euro Block (\pm voltage leads)
- 6 Dry Contact Relay (Optional)
- 7 Temperature sensor

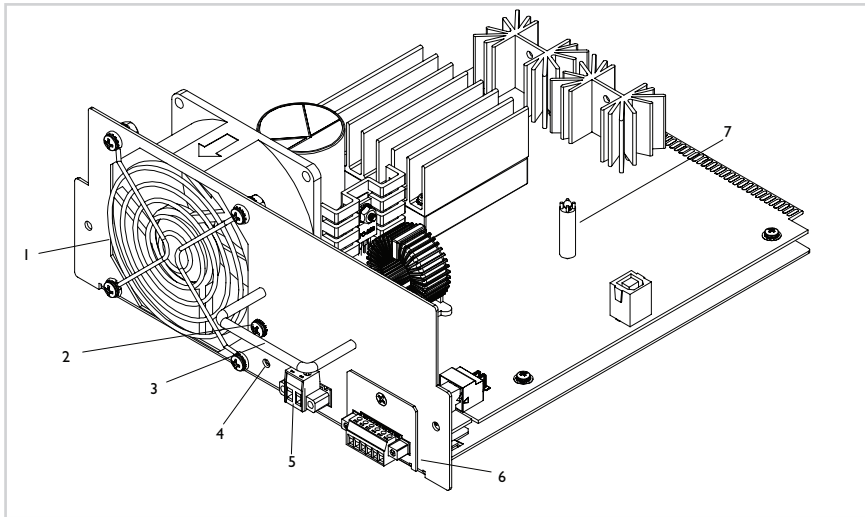


Figure 1: Power Module Components

Notices

- The IONPS-D power module must be installed by qualified technical personnel only. Transition networks assumes no responsibility for the improper installation, set up or use of these power module.
- 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 IONPS-D DC power module is intended for installation in restricted access location only.

The IONPS-D, DC power module can replace an existing DC power module or an AC power module in an ION Chassis.

CAUTION: While installing or servicing the power module, 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 module.

Power source circuit requirements

The IONPS-D power module 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 module reliably, routing and securing the DC input wires safely in accordance with local and national electrical codes.

Equipment ground

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

⚠ CAUTION: While installing or servicing the power module, 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 module.

Connecting external power

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

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.

Note: The power module can be hot swapped (*i.e., swapped while the chassis is in operation*) provided the power module has been disconnected from its external power source.

To connect power to the DC power module in the ION chassis, do the following:

1. Turn main power source OFF.
2. Loosen the “2” mounting screws, attaching the Euro Block to the power module and pull it from the power module. See Figure 2.

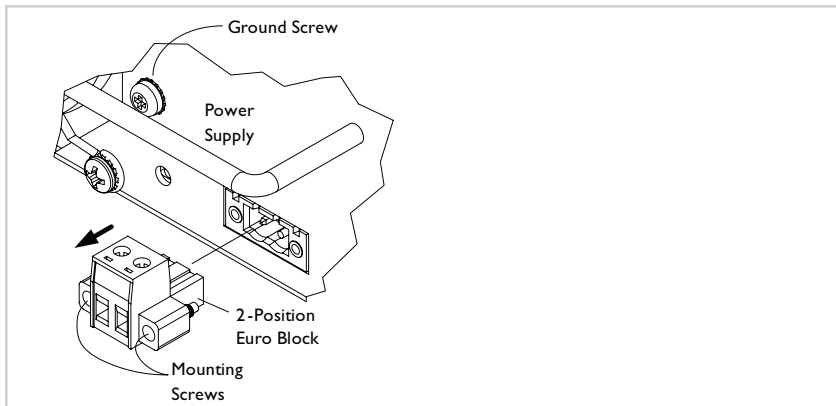


Figure 2: Removing the Euro Block from Power Module

Connecting external power — Continued

3. Note polarity, insert the “2” power wires into the Euro Block.
4. Use the “2” wire-securing screws to secure the power wires in the Euro Block. See Figure 3.

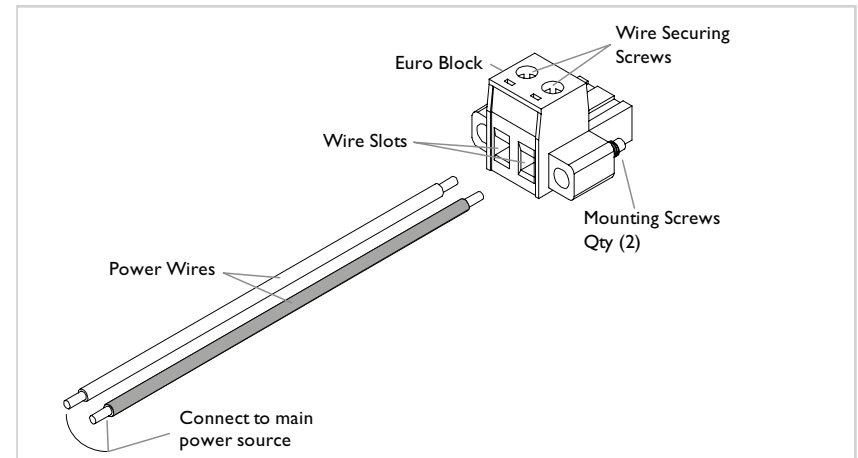


Figure 3: Installing Power Wires

5. Connect the other end of the power wires to the main power source.
6. Reinsert the Euro Block into the power module and secure it using the 2, Euro Block mounting screws, shown in Figure 3.

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

7. Turn the main power ON: the power LED on the power module should be ON and the fan will be rotating.

Redundant (*failover*) chassis power module

Note: In a dual redundant power module configuration (*second module inserted into the chassis*), the fan in the second power module will operate without external power applied, if power is applied to the chassis. This provides extra chassis heat exhaust when the power module is not in use, and in stand-by mode.

Redundant (failover) chassis power module—continued

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

1. Remove and keep the two (2) 6-32 philips head screws attaching the slot cover to the chassis. See Figure 4.

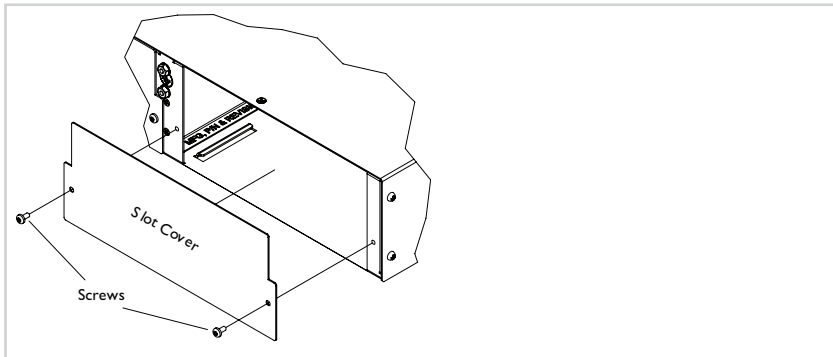


Figure 4: Remove Slot Cover

2. Remove the Euro Block from the power module.
3. Ensure that the main power source is switched OFF.
4. Note polarity, insert the “2” power wires into the Euro Block and secure them.
5. Insert the Euro Block into the power module and tighten the “2” screws to secure it to the chassis.
6. Connect the ground wire to the power module chassis.
7. Slide the second power module into the chassis. See Figure 5.

Note: The fan in the second power module will operate without external power applied, if power is applied to the chassis.

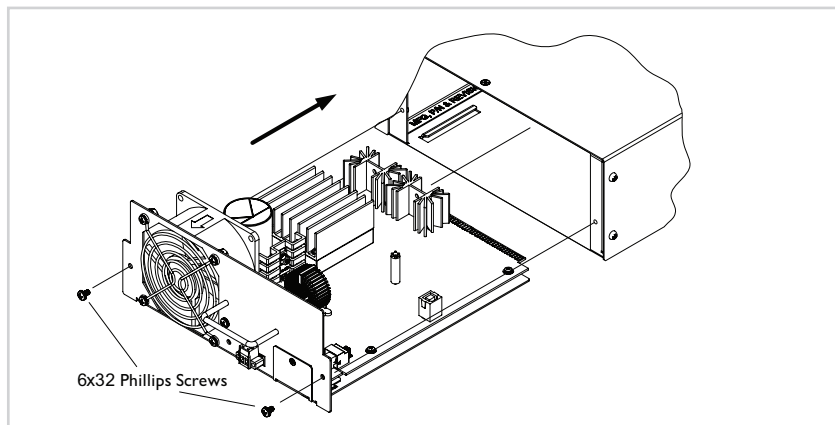


Figure 5: Power Module Installation

Redundant (failover) chassis power module—continued

8. Secure the power module to the chassis with the two (2) 6-32 philips head screws.
9. Switch main power source ON — the LED on the redundant module should be lit.

Power module redundancy

The IONPS-D, DC Power Module includes Instant failover (IFO) circuitry that provides the capability for the primary Power Module to power the chassis backplane while the auxiliary Power Module is in ‘hot’ standby mode. If the IFO circuitry detects the loss of primary power, the auxiliary Power Module instantly provides power to the chassis backplane. When primary power is restored, the IFO circuitry places the auxiliary Power Module in ‘hot’ standby mode. The chassis primary Power Module is located in the left slot of the chassis as viewed from the rear. The chassis auxiliary Power Module is located in the right slot of the chassis as viewed from the rear. A single Power Module installed in either bay can power the chassis backplane.

Note: The IONPS-D, DC Power supplies DO NOT load share.

Maintenance

⚠ WARNING: Do not connect the power 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 module

Note: The power module can be hot swapped (*i.e., swapped while the chassis is in operation*) provided that it is not connected to an active (*switched ON*) external power source.

To replace the power module:

1. Make sure that the external power source is switched OFF.
2. Remove the chassis grounding lug if necessary.
3. Remove the ground wire connected to the power module.
4. Remove the Euro Block containing the power wires.
5. Remove and keep the two (2) 6-32 philips head screws, securing the power module to the chassis.
6. Carefully pull the power module from the chassis.
7. Locate the new power module.

Maintenance — Continued

Replacing the power module

8. Install the Euro Block containing the “2” power wires.
9. Position the power module at the chassis slot, as shown in Figure 6.
10. Slide the power module completely into the chassis slot.
11. Insert the two screws to attach the power module to the chassis.

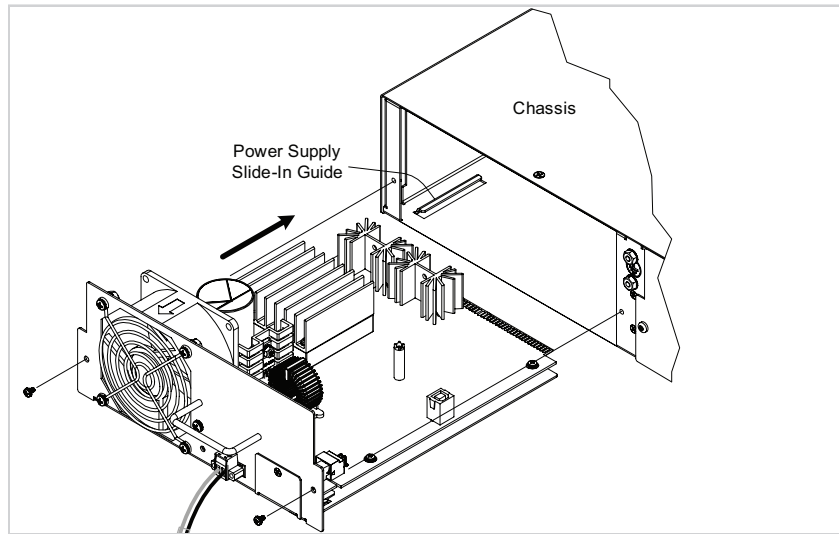


Figure 6: Replacing the Power Modules

12. If necessary, attach the chassis grounding log.
13. Switch the main power source to the ON position. The fan will be operations and the power LED will be lit.

Maintenance — Continued

Replacing the fuse

WARNING: Ensure that the IONPS-D, DC power module has been disconnected from the external power source. Failure to observe this warning could result in an electrical shock or death.

To replace the fuse in the IONPS-D, DC power module, do the following:

1. Ensure the main power source is switched OFF.
2. Remove the power module from the chassis to expose the fuse. See Figure 7.
3. Carefully pull the fuse from the fuse holder. See Figure 7.

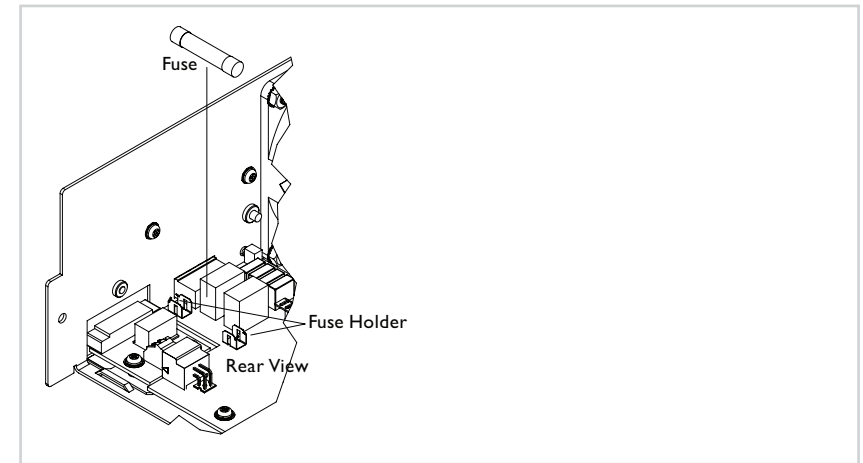


Figure 7: Fuse Holder with Fuse

4. Replace the fuse with an equivalent amperage and voltage rated fuse.
5. Insert and secure the power module to the chassis.
6. Switch the main power source to ON: the fan should be operational and the power LED should be lit.

Technical Specification

For use with Transition Networks Model IONPS-D power module or equivalent.

Dimensions:	8.3" x 8.4" x 2.7" (211 mm x 211 mm x 69 mm)
Weight:	4 lb. (6.35kg) approximately
Power input:	48VDC (40 – 60VDC) @ 5A (typical for a fully-loaded chassis); 10 Amps max
Under-voltage lockout:	40VDC max, 38VDC min
Inrush current:	5A max
Power output:	12VDC @ 12 Amp max
Fuse:	450VAC, 12.0 Amp
MTBF:	40,00 MIL-HDBK-217F hours 110,000 Bellcore hours

Environment

Operating temp:	0°C to 50°C (32°F to 122°F)
Storage temp:	-25°C to 70°C (-13°F 185°F)
Humidity:	5% to 95%, non-condensing
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 module fails, isolate and correct the failure by determining the answers to the following questions and then taking the indicated action:

- Is the power LED on the IONPS-D, DC power module lit?
 - NO
 - Is the power module inserted properly into the chassis?
 - Is the power module properly connected to the external power source?
 - Does the external power source provide power?
 - Is the fuse on the IONPS-D, DC power module intact?
See the "Replacing the fuse" section for fuse replacement procedure if necessary.
 - YES
 - 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

Transition now

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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Transition Networks provides seminars via live web-based training.
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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:	IONPS-D, DC Power Module Module		
Purpose: To declare that the IONPS-D to which this declaration refers is in conformity with the following standards: EMC Directive 2004/108/EC; EN 55022:2006+A1:2007 Class A; EN55024:1998+A1:2001+A2:2003; EN61000-3-2; EN61000-3-3; CFR Title 47 Part 15 Subpart B Class A; IEC 60950-1 2nd Edition: 2009; UL 60950-1, 2nd Edition: 2007; EN 60950-1 2nd Edition: 2006 + A11: 2009			
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		July, 2011 Date	

Compliance Information

FCC regulations

This equipment has been tested and found to comply with the limits for a Class A 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 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 prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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