

NI PXI-1006 Power Supply Shuttle User Guide

The NI PXI-1006 power supply shuttle is a replacement part for the PXI-1006 chassis.

To minimize downtime caused by a power supply failure, the PXI-1006 chassis has a modular power supply shuttle. This power supply shuttle includes the chassis power supply, cooling fans, and fan-control circuitry. Key features of the power supply shuttle include the following:

- Universal AC input with automatic voltage and frequency ranging
- Over-current protection through push-reset circuit breaker
- Remote power monitoring and inhibit through a rear-panel connector
- Selectable fan speed

Unpacking

Carefully inspect the shipping container and the power supply shuttle for damage. Check for visible damage to the metal work. Check to make sure all handles, hardware, and switches are undamaged. Visually inspect the inside of the shuttle for any possible damage, debris, or detached components. If damage appears to have been caused during shipment, file a claim with the carrier. Retain the packing material for possible inspection and/or reshipment.

What You Need to Get Started

- NI PXI-1006 chassis (the unit being repaired)
- NI PXI-1006 power supply shuttle
- Read Me First: Safety and Radio-Frequency Interference*

National Instruments™, NI™, and ni.com™ are trademarks of National Instruments Corporation. Product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your CD, or ni.com/patents.

April 2003
323569A-01

❑ NI PXI-1006 User Manual (provided with the chassis; also available at ni.com/support)

❑ No. 1 Phillips screwdriver

Description

Refer to Figure 1 to locate user-accessible components on the power supply shuttle.

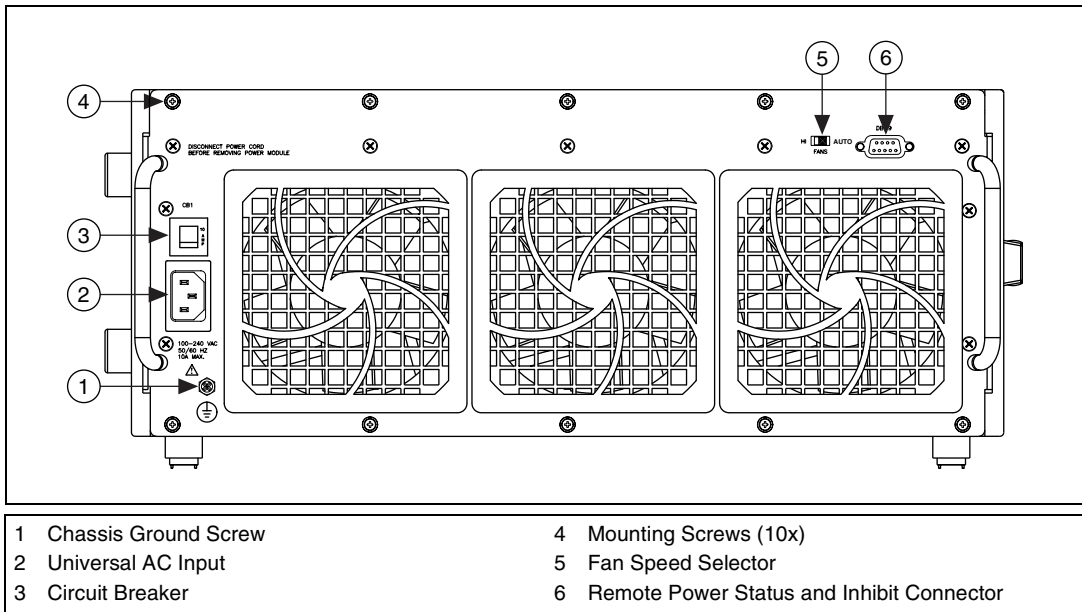


Figure 1. PXI-1006 Power Supply Shuttle Rear Panel

Installation and Maintenance

The information in this section is for qualified service personnel only. Refer to the *Read Me First: Safety and Radio-Frequency Interference* document included with your kit before using the power supply shuttle.



Caution Many components within the PXI-1006 chassis under repair are susceptible to static discharge damage. Service the chassis only in a static-free environment. Observe standard handling precautions for static-sensitive devices while servicing the chassis. Always wear a grounded wrist strap, or equivalent, while servicing the chassis.



Caution Always disconnect the AC power cable before cleaning or servicing the chassis.



Caution *Never* connect the AC power cable to the power supply shuttle until you install it in a PXI-1006 chassis. Do *not* use, test, or configure the power supply shuttle outside of a chassis.

The power supply shuttle is a replacement part for the PXI-1006 chassis. The *NI PXI-1006 User Manual* contains other chassis service procedures. The chassis includes a hardcopy of the *NI PXI-1006 User Manual*. Additionally, you can download a softcopy from ni.com/support.

Removal

Before attempting to replace the power supply shuttle, verify that there is adequate clearance behind the chassis. Set the power switch on the front panel to the Standby position and disconnect the power cable from the power supply shuttle on the back of the chassis. Identify the ten mounting screws that attach the power supply shuttle to the chassis. Refer to Figure 1 for the mounting screw locations. Using a Phillips screwdriver, loosen the captive screws. Pull on the two rear handles of the power supply shuttle to remove it from the back of the chassis.

Installation

Ensure that there is no visible damage to the new power supply shuttle. Verify that the housing and connector on the new power supply shuttle have no foreign material inside. Install the new power supply shuttle into the opening on the rear of the chassis. Tighten the ten mounting screws with a Phillips screwdriver.

Configuration

The fan-speed selector switch is on the rear panel of the power supply shuttle. Refer to Figure 1 to locate the fan-speed selector switch. Select HI for maximum cooling performance (recommended) or AUTO for quieter operation.

Connecting Safety Ground



Caution The power supply shuttle is designed with a three-position NEMA 5-15 jack that connects the ground line to the chassis ground. To minimize shock hazard, make sure the electrical power outlet you use to power the chassis has an appropriate earth safety ground.

If your power outlet does not have an appropriate ground connection, you must connect the premise safety ground to the chassis ground screw. Refer to Figure 1 to locate the chassis ground screw. Complete the following steps to connect the safety ground.

1. Connect a 16 AWG (1.3 mm) wire to the chassis ground screw using a grounding lug. The wire must have green insulation with a yellow stripe or must be noninsulated (bare).
2. Attach the opposite end of the wire to permanent earth ground using toothed washers or a toothed lug.

Specifications

AC Input

Input voltage range90 to 264 VAC

Input frequency range47 to 63 Hz

Maximum steady state
operating current10 A

Over-current protection10 A circuit breaker

Line regulation $\pm 0.1\%$ over operating line range

Efficiency70–80% typical

Power disconnectThe Off (standby) power switch causes the power module to supply DC power to the CompactPCI/PXI backplane. The rear-panel D-sub connector facilitates remote inhibiting operation. The Off (standby) switch must be in the On position prior to use of remote inhibit. The power cord provides main power disconnect.

DC Output

Maximum usable power..... 600 W

DC current capacity (I_{MP})

Voltage	I_{MP} (Steady-State Current)
+3.3 V	60 A
+5 V	60 A
+12 V	9 A
-12 V	1.8 A

Load regulation

Voltage	Regulation
+3.3 V	0.4% or 20 mV max
+12 V	0.4% or 20 mV max
+5 V	0.4% or 20 mV max
-12 V	0.4% or 20 mV max

Maximum ripple and noise 1% ripple, 1% noise
20 MHz bandwidth

Over-current protection..... 105–140% of rated output
current; automatic recovery

Over-voltage protection 3.3 V, 5 V clamp at 122–134%
of output voltage
+12 V and -12 V clamp at
110–120% of output voltage

Power supply shuttle MTTR..... Replacement in under 5 minutes