

24VAC Power Supply Module

NPB-PWR

INSTALL SHEET

This document covers the mounting and wiring of the 24V input, 15V output NPB-PWR power supply module for Tridium® JACE® controller models T-200 and T-600, (T-200/600 or JACE 2/6).

Table 1 NPB-PWR module description.

| Description | Notes |
|---|---|
| 24 Vac or 24 Vdc input, 15Vdc output, 30W power supply. Intended for mounting on 35mm DIN rail. | Refer to the specific <i>Mounting and Wiring Guide</i> for the controllers above for complete mounting and wiring details, including details for this specific power supply module. Such documents also provide all certification and listing information. Also, note that another AC line input (120V/240V) power supply module can be used for powering a T-200/600 controller. See the <i>NPB-PWR-UN Module Install Sheet</i> for details. |

Included in this Package

Included in this package you should find the following items:

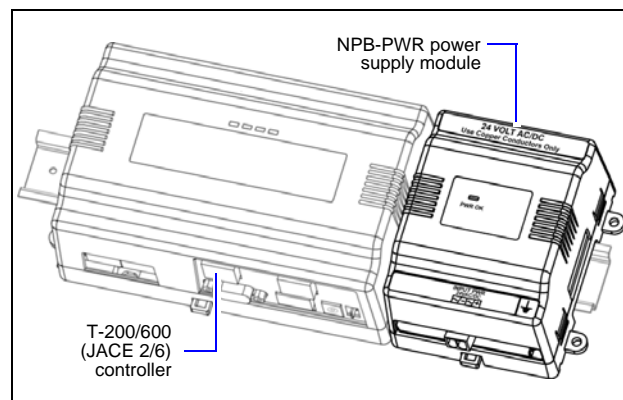
- a NPB-PWR module, and grounding wire with quick-disconnect 0.187" female connector.
- This document, *24VAC Power Supply Module*, Part Number 11840 Rev 1.1

Material and Tools Required

These tools and supplies are typically required:

- One of the following:
 - UL listed, Class 2, 24Vac transformer, rated at *minimum* of 15VA to 25VA (factoring in a little headroom, where the latter is for a fully expanded unit). Note that a *dedicated* transformer is required—meaning, it cannot also power additional equipment.
 - 24Vdc power supply, capable of supplying at least 1A (24W).
- DIN rail, type NS35/7.5 (35mm x 7.5mm) and end clips (stop clips), as needed.
- Small flat-blade screwdriver: for making wiring connections to the 24V input terminals.

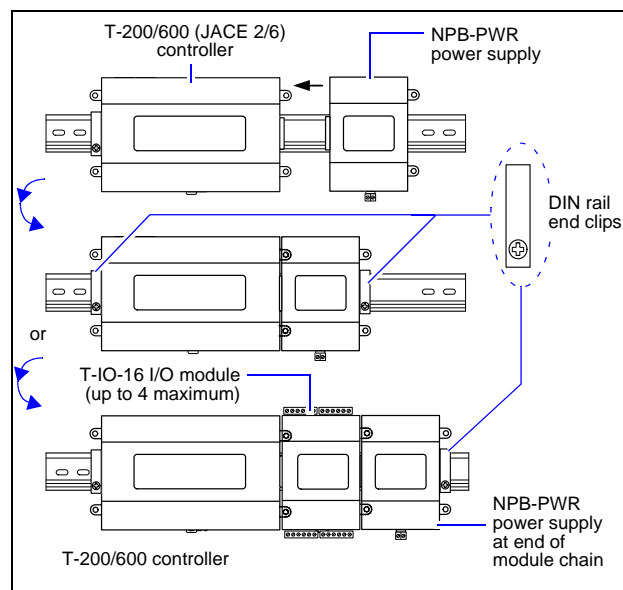
Figure 1 NPB-PWR power supply module.



Application

The NPB-PWR is a DIN-mountable, 24Vac or 24Vdc input, power supply module. The module furnishes 15Vdc at 30VA maximum on a 20-position connector that mates to the right side of a T-200/600 controller, or to a T-IO-16 (I/O module) directly attached on that controller's accessory module chain. See [Figure 2](#).

Figure 2 NPB-PWR powers T-200/600 controller.



A T-200/600 controller with up to four T-IO-16 modules can be powered by the NPB-PWR module.

Mounting



Note DIN rail mounting is the preferred method, to ensure accurate alignment between the powered devices and the NPB-PWR module.

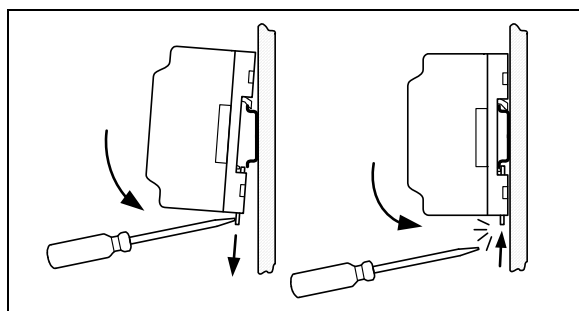
If DIN rail mounting is impractical, you can use screws in mounting tabs on the devices. For mounting tab dimensions for device assemblies, refer to the *Mounting and Wiring Guides* for the T-200/600 (JACE 2/6) controllers, or for the T-IO-16 module.

The NPB-PWR module mounts on installed 35mm DIN rail as shown below. Orientation can be in any direction.

Procedure 1 Mounting on DIN rail.

1. Position the NPB-PWR on the rail, tilting to hook DIN rail tabs over one edge of the DIN rail.

Figure 3 Hook top of rail, pry plastic clip downwards.

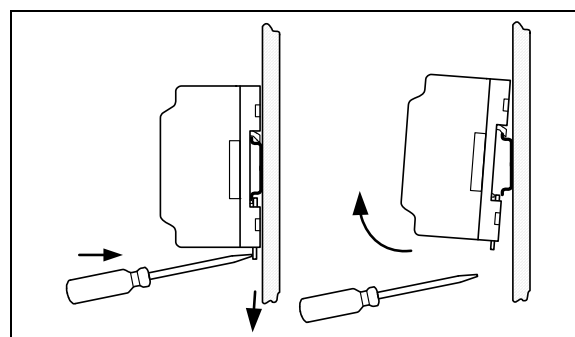


2. Use a screwdriver to pry down the plastic locking clip, then push **down** and **in** on the module. This forces the clip to snap over the other edge of the DIN rail. See [Figure 3](#).
3. Slide the NPB-PWR along the DIN rail to connect its left-side 20-position plug into the T-200/600 (or its last T-IO-16 accessory module).
4. Use DIN rail end clips to secure both ends of the connected devices (see [Figure 2](#) on page 1).
5. Refer to other *Mounting and Wiring Guides* for additional mounting details.



Note To *remove* the module from a DIN rail, use a screwdriver to pry out the plastic locking clip, then pull down and out at the bottom of the unit. See [Figure 4](#).

Figure 4 Removing module from DIN rail.



Wiring



Warning A 24Vac or 24Vdc circuit powers the NPB-PWR. Disconnect power to this circuit before installation to prevent electrical shock or equipment damage.

Make all connections in accordance with national and local electrical codes. Use copper conductors only.

Do not exceed 30W supply capacity of the NPB-PWR by the powered devices.

Ground and Input Power

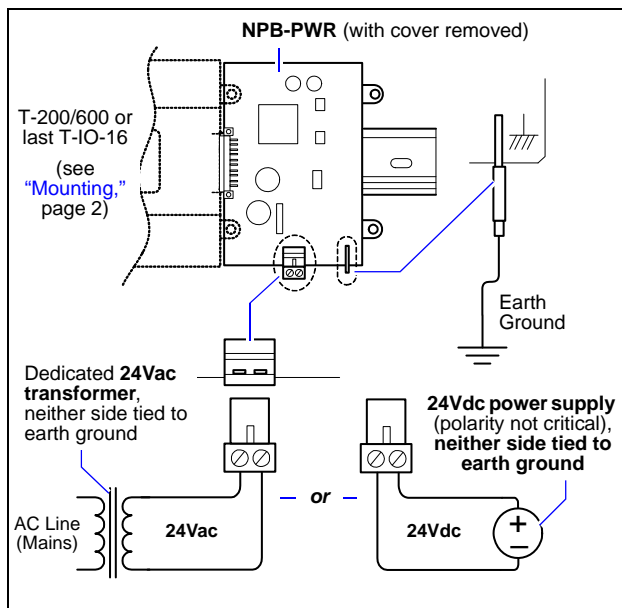
The NPB-PWR module lets you power the T-200/600 controller (and if present, T-IO-16 modules) from a dedicated Class 2, 24Vac transformer, or a 24Vdc power supply. If installing T-IO-16 modules, the NPB-PWR installs as the last (end) module—see [Figure 1](#).



Note If powering from a 24V transformer, do not power any other equipment with it. Otherwise, conducted noise problems may result. Also, do not ground either side of the transformer's 24V secondary.

See [Figure 5](#) for a wiring diagram, and [Procedure 2](#).

Figure 5 NPB-PWR power and earth ground.



At the bottom of the NPB-PWR module is a 2-position power connector, and an earth ground spade lug.



Note You do not have to remove the cover of the NPB-PWR to wire ground or input power.

Procedure 2 Wiring earth ground and input power.

1. Remove power from the AC or DC circuit being wired to the NPB-PWR—see previous [Warning](#).
2. Connect the supplied earth grounding wire to a nearby grounding point. See [Figure 5](#).
3. Unplug the power connector plug from the module and make connections to it as shown in [Figure 5](#).
4. If any device covers were removed, replace them. Make sure all modules in the mounted assembly are firmly connected together and secured.
5. Do not insert the power connector plug yet.

Before restoring power to the NPB-PWR, complete any other wiring connections on the JACE controller and/or its accessory modules. Refer to the appropriate *Mounting and Wiring Guide(s)* for more details.



Warning If T-IO-16 modules are installed, it is important not to remove power after *first* applying it, for a period of up to 4 minutes, in case an automatic “firmware upgrade” from the T-200/600 controller to attached IO modules is in progress. Otherwise, IO modules can be rendered inoperable. Refer to the *T-IO-16 Installation and Configuration Guide* for additional details.

6. To apply power, insert the power connector plug.

Output Power

Once power is restored by inserting the power connector plug into the NPB-PWR, 15Vdc power is supplied to the T-200/600 controller and any chained T-IO-16 expansion modules.

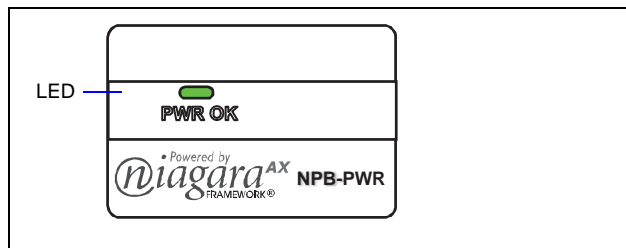


Note If T-IO-16 modules are installed, see the previous [Warning](#) given in [Procedure 2](#).

LED

A single LED is visible on the NPB-PWR's cover, to show supplied 15Vdc power. See [Figure 6](#).

Figure 6 LED "PWR OK".



Whenever 24V power is applied to the NPB-PWR, this LED should remain lit.

Information and/or specifications published here are current as of the date of publication of this document. Tridium, Inc. reserves the right to change or modify specifications without prior notice. The latest product specifications can be found by contacting our corporate headquarters, Richmond, Virginia. Products or features contained herein are covered by one or more U.S. or foreign patents. This document may be copied by parties who are authorized to distribute Tridium products in connection with distribution of those products, subject to the contracts that authorize such distribution. It may not otherwise, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior written consent from Tridium, Inc. Complete confidentiality, trademark, copyright and patent notifications can be found at: <http://www.tridium.com/galleries/SignUp/Confidentiality.pdf>. © 2012 Tridium, Inc.