

WTI Part No. 14531
Rev. A

NPS Series

Network Power Switches • Horizontal Mount

Products Covered:

NPS-4HS15 Series

NPS-8HS Series

NPS-8HD Series

NPS-H20-ATS Series

NPS-16HD Series

Hardware Guide



Power & Console Solutions | wti.com



Warnings and Cautions: Installation Instructions



Secure Racking

If Secure Racked units are installed in a closed or multi-unit rack assembly, they may require further evaluation by Certification Agencies. The following items must be considered.

1. The ambient within the rack may be greater than room ambient. Installation should be such that the amount of air flow required for safe operation is not compromised. The maximum temperature for the equipment in this environment is 60°C. Consideration should be given to the maximum rated ambient.
2. Installation should be such that a hazardous stability condition is not achieved due to uneven loading.

Input Supply

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

Grounding

Reliable earthing of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit.

No Serviceable Parts Inside; Authorized Service Personnel Only

Do not attempt to repair or service this device yourself. Internal components must be serviced by authorized personnel only.

- **Shock Hazard - Do Not Enter**
- **Lithium Battery**
CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Disconnect Power

If any of the following events are noted, immediately disconnect the unit from the outlet and contact qualified service personnel:

1. If the power cord becomes frayed or damaged.
2. If liquid has been spilled into the device or if the device has been exposed to rain or water.

Two Power Supply Cables



Note that some NPS series units feature two separate power inlets and a separate power supply cable for each power inlet. Make certain to disconnect all power supply cables from their power source before attempting to service or remove the unit.

15 Amp Starter Cable(s)

Depending on your specific model, some NPS Series units may be shipped with either one or two 125 VAC, 15 Amp "Starter" Cables. These Starter Cables will allow you to connect the NPS to power for bench testing and initial start up and are adequate for applications that only require 15 Amps. For 20-Amp power switching applications, please refer to the WTI Power Cable guide supplied with the unit, or use appropriate 20-Amp cables.

Agency Approvals

FCC Part 15 Regulation

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 his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

WARNING: *Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment*

EMC and Safety Directive Compliance

The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

- **Council Directive 2014/30/EU of 26 February 2014 on the approximation of the laws of Member States relating to electromagnetic compatibility;**
- and
- **Council Directive 2014/35/EC of 26 February 2014 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.**

Industry Canada - EMI Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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1. Introduction

This Hardware Guide covers set-up and installation for our NPS Series Network Power Switches. NPS Series units are designed to simplify the process of remotely managing vital network elements located at distant network equipment sites and off-site facilities by providing secure remote access to power switching and reboot functions at the remote network equipment site.

Note: *For instructions regarding configuration and operation of the NPS Series Device, please refer to the [WTI Firmware Guide](#).*

Model Numbers Covered

This Hardware Guide discusses all WTI NPS Series products. Throughout this Hardware Guide, all of these units are referred to as the "NPS."

2. Unit Description

2.1. NPS-4HS15 Series - Front Panel

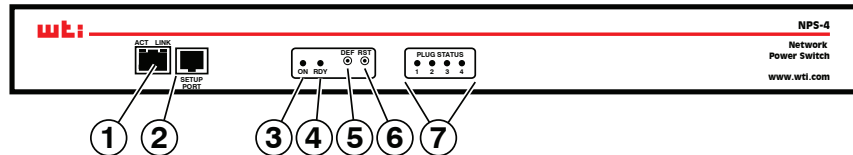


Figure 2.1: NPS-4HS15 Series - Front Panel

As shown in Figure 2.1, the NPS-4HS15 Series Front Panel includes the following components:

1. **Network Port:** An RJ45 Ethernet port for connection to your 10/100/1000Base-T, TCP/IP network. Note that the Network Port also includes two, small LED indicators for Link and Data Activity. For more information on Network Port configuration, please refer to the [WTI Firmware Guide](#).
2. **SetUp Port:** An RJ45 RS232 serial port (DCE configuration) used for connection to a local terminal or external modem, as described in [Section 4.3](#). For a description of the Setup Port interface, please refer to [Appendix B](#).
3. **"ON" Indicator:** An LED that lights when power is applied to the NPS.
4. **"RDY" Indicator:** (Ready) Flashes if unit is ready to receive commands.
5. **Default Button:** Toggles outlets On/Off or resets unit to factory default parameters as described in [Section 2.11](#).
6. **Reset Button:** Reboots and/or resets the NPS to factory defaults as described in [Section 2.11](#).
7. **Output Status Indicators:** LEDs light when corresponding outlet is switched On.

2.2. NPS-4HS15 Series - Back Panel

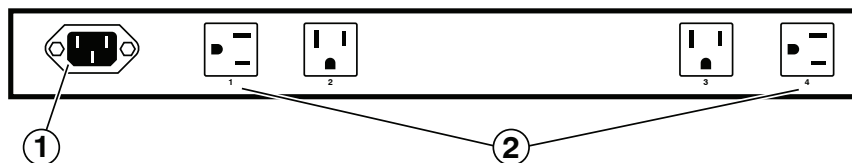


Figure 2.2: NPS-4HS15 Series - Back Panel

As shown in Figure 2.2, the NPS-4H15 Series Back Panel includes the following components:

1. **Power Inlet:** Supplies power to NPS control functions and outlets. Also includes cable keeper (not shown).
 - NPS-4HS15-1 Units: One IEC 60320 C14 inlet, for 100/120V power.
 - NPS-4HS15-2 Units: One IEC 60320 C14 inlet, for 100/240V power.
2. **Switched Outlets:** AC Outlets that can be switched On, Off, rebooted or set to default state in response to user commands.
 - NPS-4HS15-1 Units: Four NEMA 5-15R Outlets.
 - NPS-4HS15-2 Units: Four IEC 60320 C13 Outlets

2.3. NPS-8HS Series - Front Panel

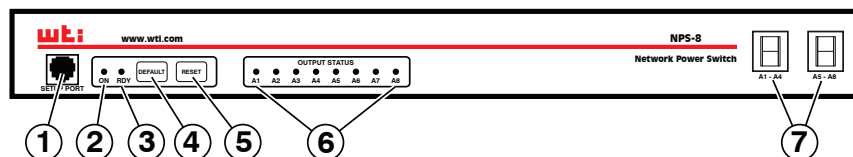


Figure 2.3: NPS-8HS Series - Front Panel

As shown in Figure 2.3, the NPS-8HS Series Front Panel includes the following components:

1. **SetUp Port:** An RJ45 RS232 serial port (DCE configuration) used for connection to a local terminal or external modem, as described in [Section 4.3](#). For a description of the Setup Port interface, please refer to [Appendix B](#).
2. **"ON" Indicator:** An LED that lights when power is applied to the NPS.
3. **"RDY" Indicator:** (Ready) Flashes if unit is ready to receive commands.
4. **Default Button:** Toggles outlets On/Off or resets unit to factory default parameters as described in [Section 2.11](#).
5. **Reset Button:** Reboots and/or resets the NPS to factory defaults as described in [Section 2.11](#).
6. **Output Status Indicators:** LEDs light when corresponding outlet is switched On.
7. **Circuit Breakers:** Two circuit breakers, which protect the eight switched outlets. One circuit breaker protects outlets A1 through A4, and the other circuit breaker protects outlets A5 through A8.
 - NPS-8HS20-1 Units: Two 20 Amp Breakers.
 - NPS-8HS20-2 Units: Two 20 Amp Breakers.
 - NPS-8HS16-3 Units: Two 16 Amp Breakers.

2.4. NPS-8HS Series - Back Panel

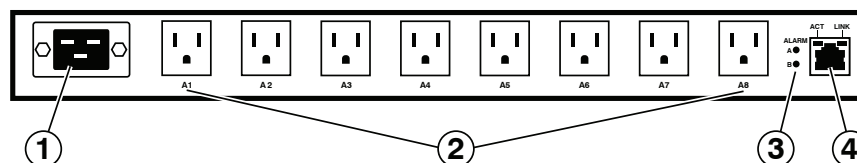


Figure 2.4: NPS-8HS Series - Back Panel

As shown in Figure 2.4, the NPS-8HS Series Back Panel includes the following components:

- Power Inlet:** Supplies power to NPS control functions and outlets.
 - NPS-8HS20-1 Units: One IEC 60320 C20 inlet, for 100/120V power.
 - NPS-8HS20-2 Units: One IEC 60320 C20 inlet, for 100/240V power.
 - NPS-8HS16-3 Units: One IEC 60320 C20 inlet, for 200/240V power.
- Switched Outlets:** AC Outlets that can be switched On, Off, rebooted or set to default state in response to user commands.
 - NPS-8HS20-1 Units: Eight NEMA 5-15R Outlets.
 - NPS-8HS20-2 Units: Eight IEC 60320 C13 Outlets
 - NPS-8HS16-3 Units: Eight IEC 60320 C13 Outlets
- Alarm Indicator Lights:** Two LEDs which light when an alarm condition is detected. For information on Alarm Configuration, please refer to the [WTI Firmware Guide](#).
- Network Port:** An RJ45 Ethernet port for connection to your 10/100/1000Base-T, TCP/IP network. Note that the Network Port also includes two, small LED indicators for Link and Data Activity. For more information on Network Port configuration, please refer to the [WTI Firmware Guide](#).

2.5. NPS-8HD Series - Front Panel

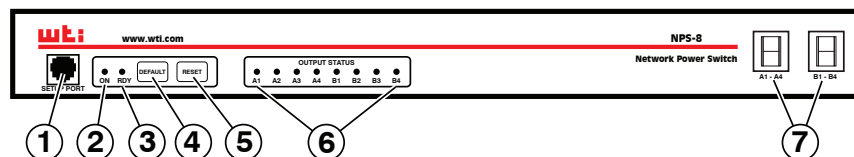


Figure 2.5: NPS-8HD Series - Front Panel

As shown in Figure 2.5, the NPS-8HD Series Front Panel includes the following components:

1. **SetUp Port:** An RJ45 RS232 serial port (DCE configuration) used for connection to a local terminal or external modem, as described in [Section 4.3](#). For a description of the Setup Port interface, please refer to [Appendix B](#).
2. **"ON" Indicator:** An LED that lights when power is applied to the NPS.
3. **"RDY" Indicator:** (Ready) Flashes if unit is ready to receive commands.
4. **Default Button:** Toggles outlets On/Off or resets unit to factory default parameters as described in [Section 2.11](#).
5. **Reset Button:** Reboots and/or resets the NPS to factory defaults as described in [Section 2.11](#).
6. **Output Status Indicators:** LEDs light when corresponding outlet is switched On.
7. **Branch A & B Circuit Breakers:** Two circuit breakers, which protect Branch A outlets A1 through A4, and the other circuit breaker protects Branch B outlets B1 through B4.
 - NPS-8HD20-1 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-8HD20-2 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-8HD16-3 Units: Two 16 Amp Breakers (One Breaker per Branch.)

2.6. NPS-8HD Series - Back Panel

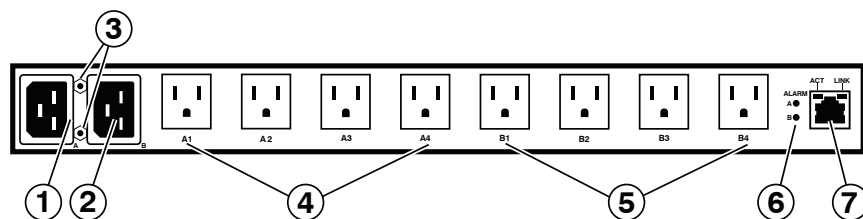


Figure 2.6: NPS-8HD Series - Back Panel

As shown in Figure 2.6, the NPS-8HD Series Back Panel includes the following components:

Power Inlets:

Each inlet provides power to the four switched outlets on the corresponding branch.

1. **Branch A Power Inlet:** Supplies power to outlets A1 through A4.
 - NPS-8HD20-1 Units: IEC 60320 C20 inlet, for 100/120V power.
 - NPS-8HD20-2 Units: IEC 60320 C20 inlet, for 100/240V power.
 - NPS-8HD16-3 Units: IEC 60320 C20 inlet, for 200/240V power.
2. **Branch B Power Inlet:** Supplies power to outlets B1 through B4.
 - NPS-8HD20-1 Units: IEC 60320 C20 inlet, for 100/120V power.
 - NPS-8HD20-2 Units: IEC 60320 C20 inlet, for 100/240V power.
 - NPS-8HD16-3 Units: IEC 60320 C20 inlet, for 200/240V power.
3. **Cable Retainer Mounts:** Mounting Hardware for Cable Retainer Bracket.

Switched Power Outlets:

Eight switched power outlets, (four switched outlets per branch,) that draw power from the corresponding branch power inlet.

4. **Branch A Switched Power Outlets:** Outlets A1 through A4 draw power from the Branch A Power Inlet.
5. **Branch B Switched Power Outlets:** Outlets B1 through B4 draw power from the Branch B Power Inlet.
 - NPS-8HD20-1 Units: Eight NEMA 5-15R Outlets.
 - NPS-8HD20-2 Units: Eight IEC 60320 C13 Outlets
 - NPS-8HD16-3 Units: Eight IEC 60320 C13 Outlets

Alarm Indicators and Network Port:

6. **Alarm Indicator Lights:** Two LEDs which light when an alarm condition is detected at the corresponding branch. For information on Alarm Configuration, please refer to the [WTI Firmware Guide](#).
7. **Network Port:** An RJ45 Ethernet port for connection to your 10/100/1000Base-T, TCP/IP network. Note that the Network Port also includes two, small LED indicators for Link and Data Activity. For more information on Network Port configuration, please refer to the [WTI Firmware Guide](#).

2.7. NPS-8H20-ATS Series - Front Panel

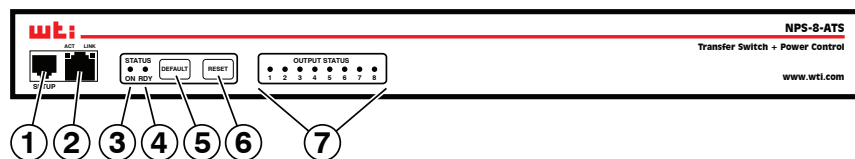


Figure 2.7: NPS-8H20-ATS Series - Front Panel

As shown in Figure 2.7, the NPS-8H20-ATS Series Front Panel includes the following components:

1. **SetUp Port:** An RJ45 RS232 serial port (DCE configuration) used for connection to a local terminal or external modem, as described in [Section 4.3](#). For a description of the Setup Port interface, please refer to [Appendix B](#).
2. **Network Port:** An RJ45 Ethernet port for connection to your 10/100/1000Base-T, TCP/IP network. Note that the Network Port also includes two, small LED indicators for Link and Data Activity. For more information on Network Port configuration, please refer to the [WTI Firmware Guide](#).
3. **"ON" Indicator:** An LED that lights when power is applied to the NPS.
4. **"RDY" Indicator:** (Ready) Flashes if unit is ready to receive commands.
5. **Default Button:** Toggles outlets On/Off or resets unit to factory default parameters as described in [Section 2.11](#).
6. **Reset Button:** Reboots and/or resets the NPS to factory defaults as described in [Section 2.11](#).
7. **Output Status Indicators:** LEDs light when corresponding outlet is switched On.

2.8. NPS-8H20-ATS Series - Back Panel

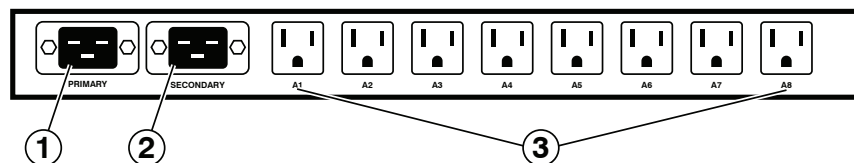


Figure 2.8: NPS-8H20-ATS Series - Back Panel

As shown in Figure 2.8, the NPS-8H20-ATS Series Back Panel includes the following components:

Power Inlets:

Each inlet provides power to the eight switched outlets. If power to either inlet is interrupted, the NPS will automatically draw power from the remaining inlet. Note that each Power Inlet includes mounting hardware for a Cable Retainer Clip.

1. Primary Power Inlet

- NPS-8H20-1-ATS Units: IEC 60320 C20 inlet, for 100/120V power.
- NPS-8H20-2-ATS Units: IEC 60320 C20 inlet, for 200/240V power.

2. Secondary Power Inlet

- NPS-8H20-1-ATS Units: IEC 60320 C20 inlet, for 100/120V power.
- NPS-8H20-2-ATS Units: IEC 60320 C20 inlet, for 200/240V power.

3. Switched Power Outlets: Eight switched power outlets that draw power from the the Primary Power Inlet and the Secondary Power Inlet.

- NPS-8HD20-1 Units: Eight NEMA 5-15R Outlets.
- NPS-8HD20-2 Units: Eight IEC 60320 C13 Outlets

2.9. NPS-16HD Series - Front Panel

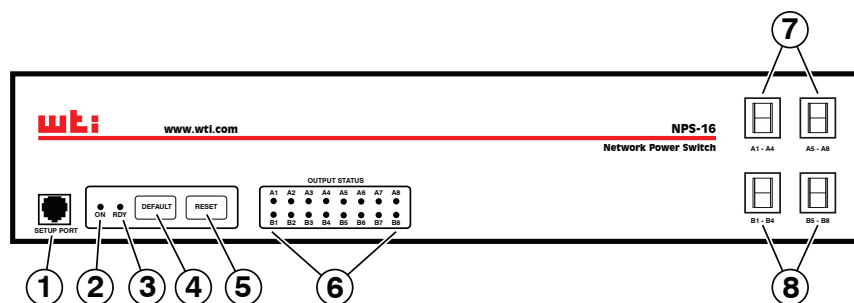


Figure 2.9: NPS-16HD Series - Front Panel

As shown in Figure 2.9, the NPS-16HD Series Front Panel includes the following components:

1. **SetUp Port:** An RJ45 RS232 serial port (DCE configuration) used for connection to a local terminal or external modem, as described in [Section 4.3](#). For a description of the Setup Port interface, please refer to [Appendix B](#).
2. **"ON" Indicator:** An LED that lights when power is applied to the NPS.
3. **"RDY" Indicator:** (Ready) Flashes if unit is ready to receive commands.
4. **Default Button:** Toggles outlets On/Off or resets unit to factory default parameters as described in [Section 2.11](#).
5. **Reset Button:** Reboots and/or resets the NPS to factory defaults as described in [Section 2.11](#).
6. **Output Status Indicators:** LEDs light when corresponding outlet is switched On.
7. **Branch A Circuit Breakers:** Two circuit breakers, which protect Branch A outlets. One circuit breaker protects outlets A1 through A4, and the other circuit breaker protects outlets A5 through A8.
 - NPS-16HD20-1 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-16HD20-2 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-16HD16-3 Units: Two 16 Amp Breakers (One Breaker per Branch.)
8. **Branch B Circuit Breakers:** Two circuit breakers, which protect Branch B outlets. One circuit breaker protects outlets B1 through B4, and the other circuit breaker protects outlets B5 through B8.
 - NPS-16HD20-1 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-16HD20-2 Units: Two 20 Amp Breakers (One Breaker per Branch.)
 - NPS-16HD16-3 Units: Two 16 Amp Breakers (One Breaker per Branch.)

2.10. NPS-16HD Series - Back Panel

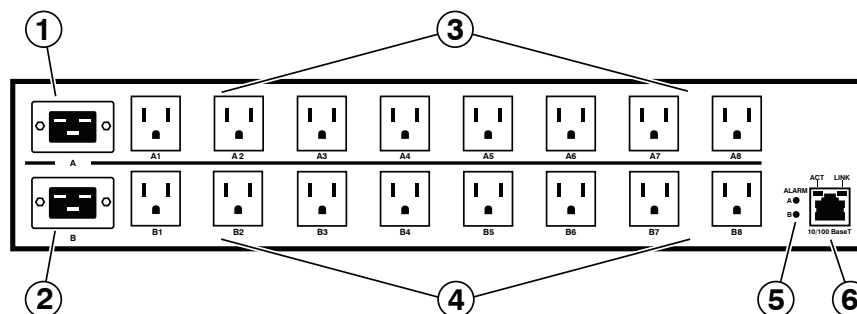


Figure 2.10: NPS-16HD Series - Back Panel

As shown in Figure 2.10, the NPS-16HD Series Back Panel includes the following components:

Power Inlets:

Each inlet provides power to the four switched outlets on the corresponding branch. Note that each inlet includes mounting hardware for the Cable Retaining clips.

1. **Branch A Power Inlet:** Supplies power to outlets A1 through A8.
 - NPS-16HD20-1 Units: IEC 60320 C20 inlet, for 100/120V power.
 - NPS-26HD20-2 Units: IEC 60320 C20 inlet, for 100/240V power.
 - NPS-26HD16-3 Units: IEC 60320 C20 inlet, for 200/240V power.
2. **Branch B Power Inlet:** Supplies power to outlets B1 through B8.
 - NPS-16HD20-1 Units: IEC 60320 C20 inlet, for 100/120V power.
 - NPS-26HD20-2 Units: IEC 60320 C20 inlet, for 100/240V power.
 - NPS-26HD16-3 Units: IEC 60320 C20 inlet, for 200/240V power.

Switched Power Outlets:

Eight switched power outlets, (four switched outlets per branch,) that draw power from the corresponding branch power inlet.

3. **Branch A Switched Power Outlets:** Outlets A1 through A8 draw power from the Branch A Power Inlet.
 - NPS-16HD20-1 Units: Eight NEMA 5-15R Outlets.
 - NPS-16HD20-2 Units: Eight IEC 60320 C13 Outlets
 - NPS-16HD16-3 Units: Eight IEC 60320 C13 Outlets
4. **Branch B Switched Power Outlets:** Outlets B1 through B8 draw power from the Branch B Power Inlet.
 - NPS-16HD20-1 Units: Eight NEMA 5-15R Outlets.
 - NPS-16HD20-2 Units: Eight IEC 60320 C13 Outlets
 - NPS-16HD16-3 Units: Eight IEC 60320 C13 Outlets

Alarm Indicators and Network Port:

6. **Alarm Indicator Lights:** Two LEDs which light when an alarm condition is detected at the corresponding branch. For information on Alarm Configuration, please refer to the [WTI Firmware Guide](#).
7. **Network Port:** An RJ45 Ethernet port for connection to your 10/100/1000Base-T, TCP/IP network. Note that the Network Port also includes two, small LED indicators for Link and Data Activity. For more information on Network Port configuration, please refer to the [WTI Firmware Guide](#).

2.11. Additional Button Functions

The Default and Reset buttons on the NPS front panel can be used to perform the functions described below:

Notes:

- *All Front Panel Button functions can also be disabled via the System Parameters menu, as described in the [WTI Firmware Guide](#).*
- *When the NPS is reset to factory defaults, all user-defined configuration parameters will be cleared, and the default “super” user account will also be restored.*

1. Reboot Operating System:

- a) Press and hold the Reset button for five seconds, and then release it.
- b) The NPS will reboot its operating system; all plugs will be left in their current On/Off state.

2. Set Parameters to Factory Defaults:

- a) Simultaneously press both the Default button and the Reset button, hold them for five seconds, and then release them.
- b) All NPS parameters will be reset to their original factory default settings, and the unit will then reboot. All plugs will be left in their current On/Off state.

3. Toggle/Default All Plugs:

- a) Press the Default button, hold it for five seconds, and then release the Default Button.
- b) The NPS will switch all plugs to the Off state. If all plugs are already in the Off state, then the unit will reset all plugs to their user defined default states.

3. Getting Started

This section describes a simplified bench test procedure for NPS Series products, which will allow you to communicate with the unit in order to demonstrate basic features and check for proper operation.

- For more information regarding installing the NPS hardware in a working network environment, please refer to [Section 4](#).
- For instructions regarding configurations options and advanced operating features, please refer to the [WTI Firmware Guide](#).

3.1. Apply Power to the NPS

First, check the safety precautions listed at the beginning of this Hardware Guide, and refer to the power rating label on the unit regarding power requirements and maximum load and then connect the NPS to an appropriate power source. Note that some NPS Series products feature two power inlets. When power is applied to the NPS, the ON LED on the instrument front panel should light, and the RDY LED should begin to flash within 90 seconds, indicating that the unit is ready to receive commands.

Note: *To determine the exact model number and power requirements for your NPS unit, refer to the nameplate on the back of the unit.*

3.2. Connect Your Computer to the NPS

In the default state, communication with the NPS via Telnet, HTTP and HTTPS are disabled. Although communication via Telnet, HTTP and/or HTTPS can be enabled as described in the [WTI Firmware Guide](#), during this bench test procedure, the NPS will be controlled via the Command Line Interface (CLI) using a local PC, connected to either the Serial SetUp Port or Network Port:

- **Serial SetUp Port:** Use the Ethernet Cable and Adapter supplied with the NPS. In the default state, the Serial SetUp Port is configured for 9600 bps.
- **Network Port:** Use the Ethernet Cable supplied with the unit. The default IPv4 address for the Network Port is 192.168.168.168.

3.3. Communicating with the NPS

Notes:

- *Default serial port parameters are set as follows: 9600 bps, RTS/CTS Handshaking, 8 Data Bits, One Stop Bit, No Parity. Although these parameters can be easily redefined, for this bench test procedure, it is recommended to configure your communications program to accept the default parameters.*
 - *The NPS features a default IP Address (192.168.168.168) and a default Subnet Mask (255.255.255.0.) This allows network IPv4 access to the Command Line Interface, providing that you are contacting the NPS from a node on the same subnet.*
1. **Access the User Interface:** Start your communications program, (e.g., Tera Term, PuTTY, etc.) then press **[Enter]**.
 2. **Username / Password Prompt:** A message will be displayed, which prompts you to enter your username (Login) and password. The default username is "**super**" (all lower case, no quotes), and the default password is also "**super**". If a valid username and password are entered, the NPS will display either the Main Menu (Web Browser Interface) or the Port Status Screen (Text Interface.)

3.4. Controlling Power Outlets

If you wish to verify that the NPS is operating properly before deploying the unit in a working network environment, proceed as follows to connect ports and switch outlets:

1. **Review the Help Menu:** At the Text Interface command prompt, type **/H** and press **[Enter]** to display the Help Menu.
2. **Controlling Power Outlets:** You may wish to perform the following tests in order to make certain that the switched outlets are functioning properly.
 - a) **Reboot Outlet:** At the command prompt, type **/BOOT 1** and press **[Enter]**. The status indicator for Plug 1 should go Off, pause for a moment and then go back On, indicating that the boot cycle has been successfully completed.
 - b) **Switch Outlet Off:** At the command prompt, type **/OFF 1** and then press **[Enter]**. The status indicator for Plug 1 should go Off, indicating that the command has been successfully completed. Leave Plug 1 in the "Off" state, and then proceed to the next step.
 - c) **Switch Outlet On:** At the command prompt, type **/ON 1** and press **[Enter]**. The status indicator for Plug 1 should then go back On, indicating that the command has been successfully completed.
3. **Exit from User Interface:** To exit the user interface, type **/x** and press **[Enter]**.

4. Hardware Installation

This section describes the installation procedure for the NPS hardware.

Note: For a detailed description of configurations options and advanced operating features, please refer to the [WTI Firmware Guide](#).

4.1. Connecting the NPS to Your Power Supply



CAUTIONS:



- **Before attempting to install this unit, please review the warnings and cautions listed at the front of the user's guide.**
- **This device should only be operated with the type of power source indicated on the instrument nameplate. If you are not sure of the type of power service available, please contact your local power company.**
- **Reliable earthing (grounding) of this unit must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than directly to the branch circuit.**
- **Some NPS models include two power inlets to allow connection to multiple power supplies.**

4.1.1. Installing the Power Supply Cable Keepers

The NPS includes cable keepers, which are designed to prevent the power supply cables from being accidentally disconnected from the unit.

- **NPS-8HD Series Units:** Cable keepers must be installed by the user.
 1. First make certain that both of the NPS's two power cables are disconnected from the power source.
 2. Install the two standoff screws (included with the cable keeper) in the two vacant screw holes, located between the two power inlets. When the standoff screws are in place, thread the two screws supplied with the cable keeper into the top end of both of the standoff screws.
 3. Connect the power cables to the power inlets. Check to make sure that both cables are firmly seated in the power inlet connectors.
 4. Install the cable keeper plate, by slipping the plate over the two screws which protrude from the top of the standoffs. Slip the cable keeper plate into place, so that the notches in the bottom of the plate slip over the power cables, and the holes in the middle of the plate align with the screws in the tops of the standoffs.
 5. Tighten the two screws into the standoffs to secure the plate and the power supply cables to the unit. Check to make certain that the cables are held firmly in place by the cable keepers.

- **Other NPS Series Units:** These units include pre-installed cable keepers. When attaching the power supply cables to the unit, first swing the cable keepers out of the way, then plug the power cables securely into the power inputs. When the cables are in place, snap the cable keepers over each plug to secure the cables to the unit.

4.1.2. Connect the NPS to Your Power Supply

Refer to the cautions listed below and at the beginning of this User's Guide, and the information on the instrument name plate, and then connect the NPS unit to an appropriate power supply.

Note: *Some NPS units are shipped with one or two detachable 125 VAC, 15 Amp "Starter" Cables. These cable(s) will allow you to connect a 120 VAC NPS unit to power for bench testing and initial start up and are adequate for applications that only require 15 Amps. For higher amp power switching applications, please refer to the WTI Power Cable Guide (which can be found at https://www.wti.com/guides/powercables_refguide.pdf.)*

4.2. Connection to Switched Outlets

Connect the power cord from your switched device to one of the AC Outlets on the NPS unit. Note that when power is applied to the NPS, the AC Outlets will be switched "ON" by default. Note that some NPS models include two separate power branches, while others feature only one power branch.

4.3. Serial SetUp Port Connection

The NPS SetUp Port is a female, RJ45 RS232 connector, wired in a DCE configuration. In the default state, the Setup port is configured for 9600 bps, no parity, 8 data bits, 1 stop bit. The Setup Port can be connected to either an external modem or a local PC, but not both items at the same time. [Appendix B](#) describes the Setup Port interface.

4.3.1. Connecting a Local PC

Use the DX9F-WTI Adapter supplied with the unit to connect your PC COM port to the NPS Setup Port. Make certain that the Serial Port Mode is set to "Normal" as described in the [WTI Firmware Guide](#).

4.3.2. Connecting an External Modem

When connecting directly to an external modem, use the optional DX9M-RJ-KIT (not included) to connect your external modem to the NPS Setup Port. Make certain that the modem is initialized at the same default parameters as the NPS Setup Port and that the NPS Serial Port Mode is set to "Modem" as described in the [WTI Firmware Guide](#).

4.4. Connecting the Network Cable

The Network Port is an RJ45 Ethernet jack, for connection to a TCP/IP network. Connect your network cable to the Ethernet Port on the NPS unit. NPS units include a default IPv4 format IP address (192.168.168.168) and a default IPv4 protocol subnet mask (255.255.255.0.) When installing the NPS in a working network environment, it is recommended to define network parameters as described in the [WTI Firmware Guide](#).

Note: *The NPS features a 10/100/1000Base-T auto-negotiating Interface; speed and duplex mode will be automatically negotiated. When connecting to an Ethernet interface, most router switches will autosense to determine if the device is 1000Base-T, 100Base-T or 10Base-T, and then configure the network interface accordingly. If your router switch does not autosense, the NPS will auto negotiate speed and duplex mode.*

4.5. Emergency Shut Off Function

NPS Series units also include an Emergency Shut Off function, that can be used to immediately shut off all NPS power outlets in case of emergency. For more information regarding the Emergency Shut Off feature, please contact WTI Tech Support at service@wti.com.

This completes the NPS Hardware Guide. Prior to placing the unit into operation, it is recommended to refer to the [WTI Firmware Guide](#) for important information regarding advanced configuration options, security functions and more detailed operation instructions. If you have further questions regarding the NPS unit, please contact WTI Customer Support as described in [Appendix C](#).

Appendix A. Specifications

Physical/Environmental:

NPS-4HS15 Series:

Width: 19" (48.3 cm) (Including Rack Brackets)

Depth: 4.6" (11.7 cm)

Height: 1.75" (4.5 cm) One Rack U

NPS-8HS Series, NPS-8HD Series, NPS-8H20-ATS Series:

Width: 19" (48.3 cm) (Including Rack Brackets)

Depth: 8.7" (22.1 cm)

Height: 1.75" (4.5 cm) One Rack U

NPS-16HD Series:

Width: 19" (48.3 cm) (Including Rack Brackets)

Depth: 8.7" (31.1 cm)

Height: 3.5" (8.9 cm) Two Rack U

Operating Temperature: 32°F to 122°F (0°C to 50°C)

Humidity: 10 - 90% RH

Appendix B. Serial Interface Description

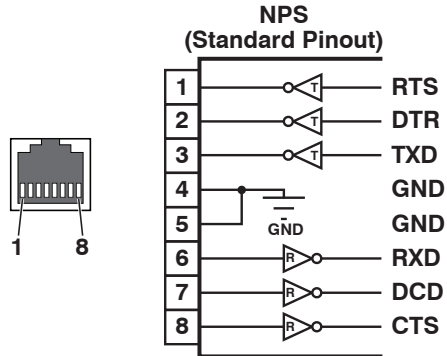


Figure B.1: NPS Series RS232 SetUpPort Interface (RJ45 - Standard Pinout)

B.1. Serial Port (RS232)

DCD and DTR hardware lines function as follows:

1. **When connected:**

- If either port is set for Modem Mode, the DTR output at either port reflects the DCD input at the other end.
- If *neither* port is set for Modem Mode, DTR output is held high (active).

2. **When not connected:**

- If the port is set for Modem Mode, upon disconnect DTR output is pulsed for 0.5 seconds and then held high.
- If the port is *not* set for Modem Mode, DTR output is controlled by the DTR Output option (Serial Port Parameters Menu.) Upon disconnect, Option 23 allows DTR output to be held low, held high, or pulsed for 0.5 seconds and then held high.

Appendix C. Customer Service

Customer Service hours are from 8:00 AM to 5:00 PM, PST, Monday through Friday. When calling, please be prepared to give the name and make of the unit, its serial number and a description of its symptoms. If the unit should need to be returned for factory repair it must be accompanied by a Return Authorization number from Customer Service.

WTI Customer Service
5 Sterling
Irvine, California 92618

Local Phone: (949) 586-9950
Toll Free Service Line: 1-888-280-7227
Service Fax: (949) 583-9514

Email: service@wti.com

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