



# Vertiv™ Rack Mount Power Supply Unit

Installer/User Guide

**Technical Support Site**

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures. For additional assistance, visit <https://www.VertivCo.com/en-us/support/>.

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# 1 PRODUCT OVERVIEW

The Vertiv™ Rack Mount Power Supply Unit (RMPSU) allows you to safely and reliably supply, manage and monitor power to multiple devices. Depending on the model, the unit has eight or 16 output ports that each have a maximum power draw limit of 20 watts (W) per 12 volt (V) port. The output ports receive power from one or two power input ports that connect to a 460 W power module with an input power level of 100-240 V. The optional second power module provides redundancy for mission-critical installations.

## 1.1 Features and Benefits

Each output port operates with 12 volts direct current (VDC) on the unit. You can connect devices that require 12 VDC to the output ports using a connection cable. However, if your device operates with 5 VDC, you must connect a converter module to the output port prior to connecting your device. The RMPSU can support use of all eight or 16 output ports in any combination of 12 VDC and 5 VDC devices with the use of proper connection cables and converter modules.

The unit features the following benefits:

- Electronic short protection - If an electrical short occurs on a device connected to one of the output ports, the unit limits the power supplied to that output port until the microprocessor identifies the overload condition and trips the output port. This usually occurs within one second of the fault. You must correct the electrical short via the RMPSU management application firmware or by using the CLEAR button on the front panel. The other output ports on the unit are unaffected by the electrical short on a single output port.
- 5 V overload protection - The 5 V converter module provides an extra layer of protection. If the power supply on the module exceeds 5.5 Ampere (A), the internal circuit trips and protects the power modules and associated cabling. After the power supply is corrected, you can toggle the power port to resume functionality.
- Limited power source (LPS) - The unit is equipped with automated protection circuits and is fully compliant with the IEC60950-1 regulation which classifies it as a limited power source.

## 1.2 Device and Power Module

See the Vertiv™ Rack Mount Power Supply Unit Quick Installation Guide for procedures to mount a converter module, connect a 12 V or 5 V device, connect a power module and connect the unit to a network.

Both 12 V and 5 V devices use a three-pin plug to attach to the device directly or via a converter module. Before you can disconnect the three-pin plug, you must log in to the management application and turn off power to the power outlet.

To disconnect a three-pin locking plug:

1. In the left navigation bar, click *STATUS & CONTROL*.
2. On the Status & Control management application window, click *ON* in the State column to turn off power to the selected power outlet.

**NOTE: The green LED indicator is no longer illuminated when power is turned off.**

3. Pull back the outer body of the three-pin plug to release it from the socket and remove the plug.

To remove a power module:



**CAUTION: Power modules cannot be connected or disconnected while power is applied. Observe safe practices and anti-static precautions when removing a power module from the chassis.**

1. Isolate power from the module to be removed and disconnect the power cord.
2. Push the locking lever to the left to unlock the module and pull the module out of the bay.
3. If you are not replacing the removed module, install a blanking plate over the vacant bay.

## 1.3 Connections

The unit must have network connectivity for you to access the management application. You can temporarily connect a computer to the network port on the unit for configuration purposes.

**NOTE: Cross-over or straight connections are both supported; however, you must use an S/FTP shielded patch cable to link the unit to the computer.**

To temporarily connect a computer to the network port:

1. Connect a standard patch cable to the Ethernet 10/100 network port on the front panel of the main chassis.
2. Connect the opposite end of the standard patch cable to your computer.

## 2 MANAGEMENT APPLICATION

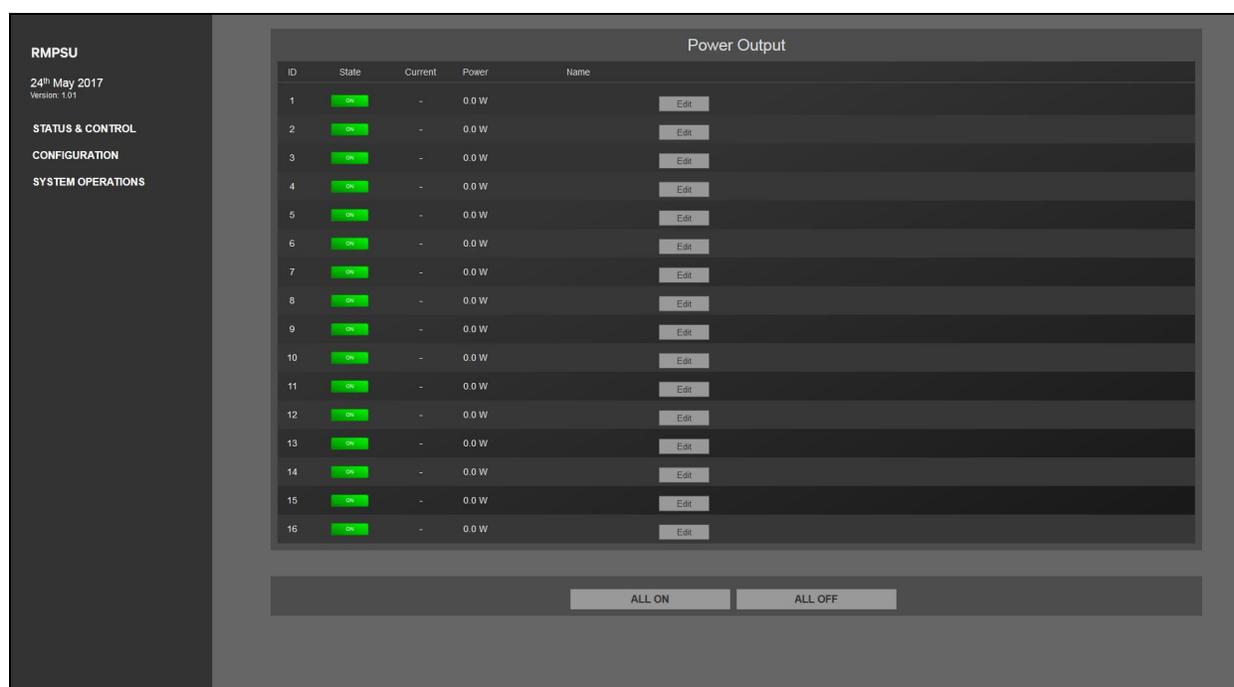
You can access the unit through the management application which is a browser-based user interface that allows you to configure the input power supply, the output power outlets and appliance settings. The management application is password-protected. Authorized administrators can access the management application locally or remotely. When you log in, the Status & Control window appears by default.

**NOTE: The default IP address for all units is 192.168.1.22, the default username is admin and the default password is password. You cannot delete the admin user account.**

To log in to the management application:

1. Open a web browser and navigate to the IP address associated with the unit.
2. Enter the username and password.

**Figure 3.1 Status & Control Window**



### 2.1 STATUS & CONTROL Link

From the Status & Control window, you can view and configure the status of the power input and output in real-time. It displays the state, internal temperature, ambient temperature, fan speed, input current and output current for each power supply. From this window, you can view the input and output current for each port, toggle the port on or off and configure a port's name.

To access the Status & Control window:

Click *STATUS & CONTROL* in the left navigation menu.

To configure the status of an output port:

In the row of the output port to be changed, click the *State* button to toggle power on or off.

**NOTE: The State button displays the current state of the output port and appears green with the word ON if power is turned on to the output port. It appears gray and displays the word OFF if the power is turned off to the port.**

To configure the status of all output ports:

Click *ALL ON* or *ALL OFF* and click *OK* in the confirmation window.

**NOTE: When you click *ALL ON*, the output ports are energized in a staggered sequence determined by the Channel interval setting on the General Configuration window.**

To configure the name of an output port:

1. Click *Edit* in the row of the output port to be configured.
2. In the Name field, enter the name of the output port and click *Update*.

**NOTE: Any field in the management application supports ASCII characters only. UTF-8 characters are not supported.**

## 2.2 CONFIGURATION Link

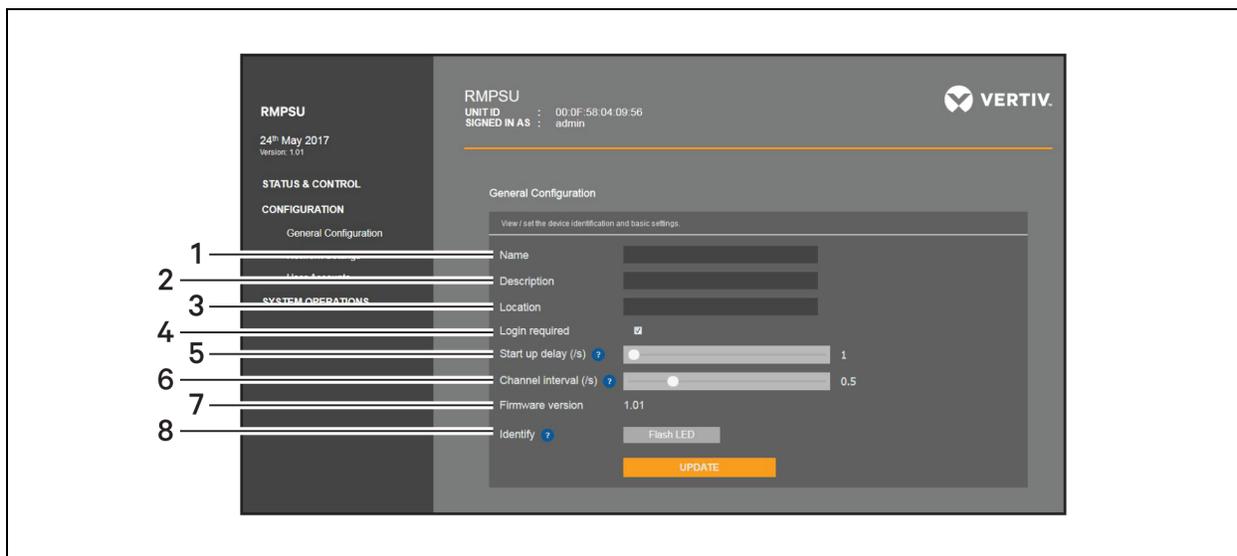
Clicking the *CONFIGURATION* link in the management application displays links to three configuration windows in the left side navigation: *GENERAL CONFIGURATION*, *NETWORK SETTINGS* and *USER ACCOUNTS*. From these windows, you can configure the appliance log-in information, identify and start-up parameters, determine network settings and add and delete user accounts.

## 2.3 General Configuration Window

The General Configuration window allows you to configure identity, login and start-up settings for each unit. Changes made to this window are not saved until you click *Update*.

The following figure and table include the settings on the General Configuration window and setting descriptions.

**Figure 3.2 General Configuration Window**



**Table 3.2 General Configuration Settings**

ITEM	SETTING	DESCRIPTION
1	Name	Serves as the unit identifier.
2	Description	Provides additional information about the unit.
3	Location	Provides the location of the unit.
4	Login required	Determines if users are required to log in to access the unit.
5	Start up delay	Determines the time delay (in seconds) that elapses after power is first applied to the chassis. This feature is particularly useful when multiple units are connected to the same power feed. Staggering the switch on points reduces the initial in-rush currents and impact of multiple switched-mode power supplies. Values range from 1 to 10 seconds.
6	Channel interval	Determines the time delay (in seconds) that elapses as each output port is energized. Values range from 0.1 to 2 seconds.
7	Firmware version	Displays the current version of the internal software the unit uses.
8	Identity	Visually identifies the unit when multiple units are installed together.

**To access and configure General Configuration window properties:**

1. Log in to the unit and click *CONFIGURATION - GENERAL CONFIGURATION* in the left navigation menu.
2. On the General Configuration window, configure the Name, Description and Location fields.
3. If applicable, select the Login required checkbox to require users to log in to access the unit.
4. Select a value from 0 to 10 in the Start up delay field.
5. Select a value from 0.1 to 2 in the Channel interval field.
6. Click *Update* to save and commit the changes.

**To flash the LED indicators on the front of the unit:**

Click *Flash LED* one time to flash the LED indicators five times.

-or-

Click *Flash LED* two times to flash the LED indicators continuously.

-or-

Click *Flash LED* three times to stop the LED indicators from flashing.

**2.3.1 Network Settings window**

You can view and configure the unit's IP address, netmask and gateway from the Network Settings window. You can also view the unit's MAC address and determine if the unit uses Dynamic Host Configuration protocol (DHCP) to automatically configure network settings. Changes made to this window are not saved until you click *Update*.

**NOTE: When setting the unit to DHCP you must have access to the DHCP server/pool to see the assigned IP address. After you set the unit to DHCP, you will not have access to a console or serial port to view the address pulled from the DHCP server. In lieu of DHCP, you can assign a static address.**

The following table lists the settings on the Network Settings window and descriptions.

**Table 3.4 Network Settings**

SETTING	DESCRIPTION
Obtain IP Address automatically (DHCP)	Determines if the unit uses DHCP to automatically assign all network settings or if the administrator manually configures network settings. If the Obtain IP Address automatically (DHCP) checkbox is selected, all fields on the Network Settings window are grayed out and uneditable.
IP Address	Allows administrators to assign the unit an IP address.
Netmask	Allows administrators to assign the unit a subnet mask.
Gateway	Allows administrators to define an address for a gateway device. This network setting is optional.
MAC Address	Displays the unique MAC address for the unit.

**To access and configure Network Settings window properties:**

1. Log in to the unit and click *CONFIGURATION - NETWORK SETTINGS* in the left navigation menu.
2. Select the Obtain IP Address automatically (DHCP) checkbox to automatically configure network settings.  
  
-or-  
Configure the IP Address, Netmask and Gateway fields as applicable.
3. Click *Update* to save and commit the changes.

**2.3.2 User Accounts window**

You can add users or configure the details of users from the User Accounts window. Every authorized user inherits administrator rights. You can add or delete users as applicable, but you cannot delete or rename the admin user account on the unit.

**NOTE: The unit only requests login credentials if the Login required checkbox is selected on the General Configuration window.**

**To access the User Accounts window:**

Log in to the unit and click *CONFIGURATION - USER ACCOUNTS* in the left navigation menu.

**To add a new user:**

Enter a username, password and password confirmation in the Add New User section and click *Add*.

**To change existing user settings:**

Click *Edit* in the row of the user account to be changed, update the user settings as applicable and click *Update*.

**To delete a user:**

Click *Delete* in the row of the user account to be deleted.

**2.4 SYSTEM OPERATIONS Link**

From the System Operations window, you can reboot the unit, reset the unit configuration to factory default settings or perform a firmware update. For the latest firmware updates, visit the Software Downloads section on the Vertiv website or contact Technical Support.



**CAUTION: Executing an action on the System Operations window interrupts the normal operation of the unit.**

When you reset the device, all output ports are restored in a staggered order defined by the start-up delay and Channel interval settings established on the General Configuration window. No configuration details are changed. However, executing a factory reset to the device reboots the unit and returns all the configured settings to factory defaults.

**NOTE:** You can also conduct a physical reboot or factory reset from the front panel of the unit.

**To reset the unit:**

From the System Operations menu, click *Device Reset* and click *OK* on the confirmation window.

**To reset the unit to factory settings:**

From the System Operations menu, click *Factory Reset* and click *OK* on the confirmation window.

**To update the firmware:**

1. Download and unzip the latest firmware .zip file.
2. Click *Select Firmware File*, browse to the firmware file and click *Open - Update Firmware*.

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## 3 BASIC OPERATION

### 3.1 Indicators

The unit's front panel is equipped with four LED indicators that relay power module status information, two LED indicators that relay network status information and one LED indicator for each output port to relay output port information.

#### 3.1.1 Front panel indicators

The following table includes the name, description and color of each power module indicator.

**NOTE: The P1 and P2 indicators are identical to and mimic the behavior of the green indicators located on the back of each power module adjacent to the cooling fans.**

**Table 4.2 Front Panel LED Indicators**

LABEL	LABEL DEFINITION	DESCRIPTION	COLOR
P1	Power module 1	<ul style="list-style-type: none"> <li>On - Indicates the power module in bay 1 is receiving power and is operating.</li> <li>Flashing - Indicates an invalid power module is inserted in bay 1.</li> </ul>	Green
P2	Power module 2	<ul style="list-style-type: none"> <li>On - Indicates the power module in bay 2 is receiving power and is operating.</li> <li>Flashing - Indicates an invalid power module is inserted in bay 2.</li> </ul>	Green
INVLD	Invalid	<ul style="list-style-type: none"> <li>Flashing - Indicates one or both of the power modules is invalid.</li> </ul>	Red
OVLD	Overload	<ul style="list-style-type: none"> <li>On - Indicates an overload is detected on one or more of the 12 V output ports and the port must be powered down.</li> </ul> <p>After the overload is resolved, you must press the CLEAR button on the unit to enable the port or click <i>FAULT</i> in the management application.</p>	Red

#### 3.1.2 Network status indicators

The amber network status indicator is located on the left side of the network port and the green indicator is located on the right side. If there is no network link, the amber and green indicators are off. If a network link is present, the amber indicator is on and flashing. If the network link is active, the green indicator is on.

#### 3.1.3 Output status indicators

The green output status indicators on the rear panel indicate whether or not power is supplied to its respective port. If the green indicator is off, no power is supplied and if it is on, power is supplied.

### 3.2 Restoring Output Ports

The output ports on the unit are monitored for electronic short protection and 5 V overload protection. If a short circuit or overload occurs on an output port, the unit pulses the current to the port to limit power to a safe value until the microprocessor trips the output. After the output port is tripped, the OVLD indicator light turns on and *FAULT* displays next to the affected port on the STATUS & CONTROL window of the management application.

For output ports using the converter modules, if the load exceeds 5.5 A, the module internally trips its output port before the electronic short protection reacts and the power trip is not reported back to the unit. The output remains intact but the current listed in the management application for the tripped port falls to zero or near zero.

#### To restore an output port:

1. Check the output port, the unit and cabling connections before you restore the power.
2. Use a narrow tool to press and release the CLEAR button on the front panel to reinstate power to the port.

-or-

On the STATUS & CONTROL window, click *FAULT* next to the tripped port.

#### To restore an output port using a module:

1. Troubleshoot the device connected to the output port, the unit and all the cabling and connections in between.

2. Disconnect and reconnect the converter module to the port that tripped.

-or-

On the STATUS & CONTROL window, click *ON - OFF* to turn off power and turn on power to the port.

### 3.3 Resetting the Unit

You can reset the unit or execute a factory reset from the System Operation window in the management application or from the RESET button on the front panel of the appliance. See [SYSTEM OPERATIONS Link](#) on page 6 for procedures to reset the unit from the management application.

Executing a device reset cycles power to the output ports but does not change any configuration details. A factory reset also cycles power to the output ports and resets all configuration details to the factory default.

#### To reset the unit:

Use a narrow tool to press and release the RESET button on the front panel.

#### To reset the unit to factory settings:

Use a narrow tool to press and hold the RESET button on the front panel for 20 seconds.





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