Vertiv™ PowerDirect
50 VDC Power System

Quick Installation Guide

Overview

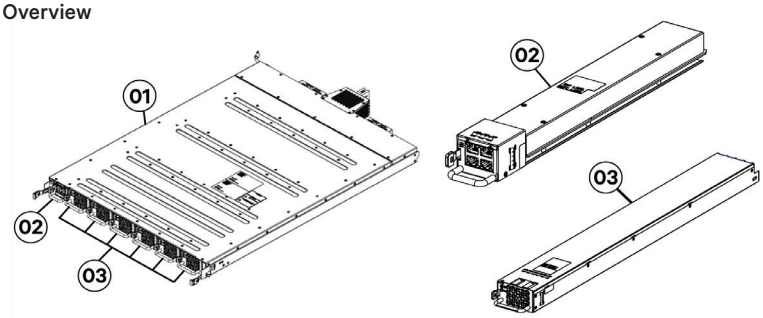
Model Number PSS5033

The Vertiv™ PowerDirect Model PSS5033 50 VDC Power System is an integrated power system containing power supply units (PSUs), a DC shelf, and a power monitoring module (PMM). This system can contain up to eight (8) shelves (4+4 Redundancy Configuration) that can be configured into a single system. Each shelf contains one (1) PMM and up to six (6) PSUs. The capacity of a single shelf is 33kW/50Vdc.

The following instructions provide information to help install the system. Use the QR code on page 4 to access the complete documentation package for the components of the PowerDirect 50 VDC Power System.

IMPORTANT: *Before installing, refer to the Important Safety Instructions in the User Manual UM1PSS5033 available by scanning the QR code on page 4. Refer to the manuals accessed via the QR code for more detailed information.*

System Overview



Item	Part Number	Description
01	1PSS503321N2	DC Shelf
02	1PMM1S0	Powering Monitering Interface Module (PMM)
03	1R05500E5	Power Supply Unit (PSU)

Installing the System

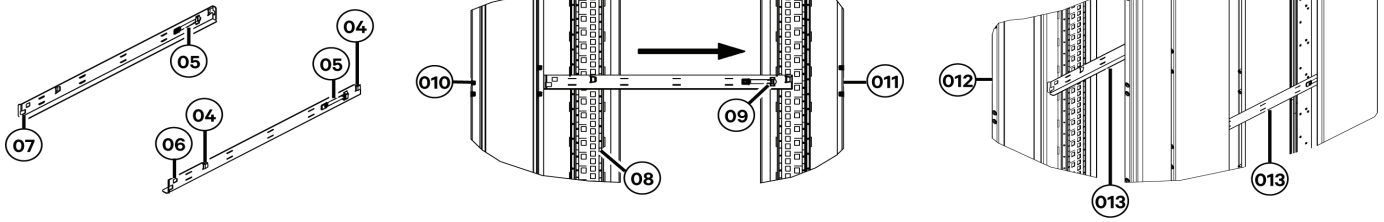
1. Inspect the equipment.

Check the packing slip to ensure all components ordered were received. Report any missing items to the carrier and your local sales representative immediately. Inspect equipment for obvious damage. If damage is visible, do not proceed and follow local practices for reporting and handling damaged goods.

2. Installing Rack Mounting Rail Kit

Find the related OpenU marking number of the desired location on the rack. Install one side of the mounting rail kit by orienting the rail as shown in the figure. Align mounting rail tabs to the corresponding cutout in the IT rack frame according to desired OpenU number. Slide the mounting rail in until the mounting rail tabs fit into the cutouts. Pull the

Installing Rack Mounting Rail Kit



Item	Description
04	Mounting Rail Tab
05	Mounting Rail Latching Clip
06	Cutout for Vertical Retention Clip
07	Cutout for Shelf Latch
08	OpenU Marking Number
09	Raise Mounting Rail Clip and Push in Mounting Rail
010	Rack Front
011	Rack Back
012	Rack
O13	Mounting Rails

mounting rail latching clip toward the center of the rack while sliding the mounting rail into position. Release the mounting rail latching clip to secure the rail to the rack. Repeat the procedure for the other side mounting rail.

3. **Installing DC Shelf(s) into Rack**

   Partially slide the DC shelf into the front of the rack, resting the bottom of the DC shelf on the rack mounting rails. Slide the mounting levers located on each side of the DC shelf in towards the center of the shelf. Slide the DC shelf completely into the rack. Release the mounting levers to secure the DC shelf to the rack. Verify that the shelf's DC output connector mates properly with the vertical DC busbar set in the rear of the rack.

Making Electrical Connections

4. **Make power system frame grounding connection.**

   Connect the end of the factory-installed frame-grounding network lead cable to a suitable ground.

5. **Make 50 VDC output connection.**

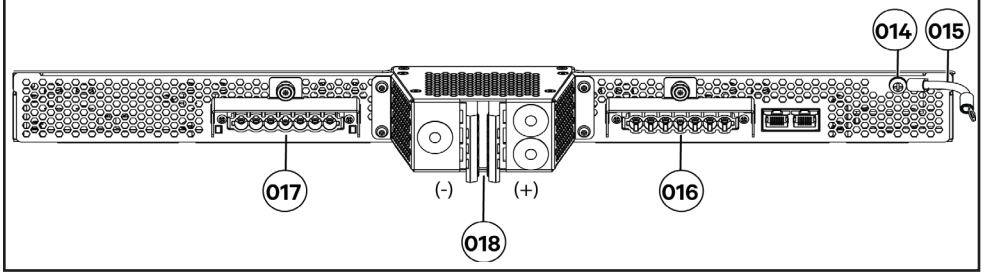
   WARNING: *Observe proper polarity when making output connections.*

   DC output is provided via a DC output connector located on the back of the DC shelf (connection 018 in figure). This connector is compatible to mate with the vertical DC busbar set in an Open Compute Project version 3 HPR rack.

6. **Make AC input connections.**

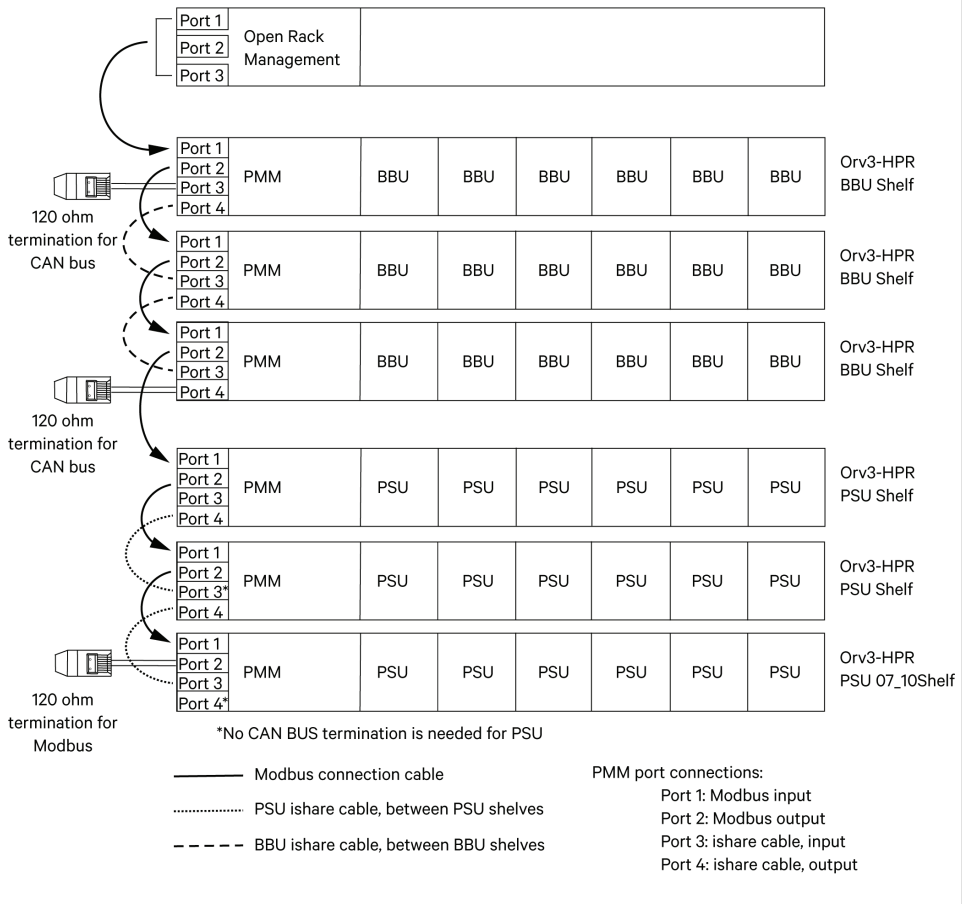
   AC input is connected to the AC Input 1 (connection 016) and AC Input 2 (connection 017). See SAG1PSS5033 for information on AC input cable options.

Making Electrical Connections



Connection	Description
014	Shelf Frame Grounding Connection M5 screw Torque: 2 Nm(17.7 in-lbs.)
015	A customer's frame grounding network lead is factory connected to the M5 ground screw. The ground wire diameter is 8 AWG (6 mm2).
016	AC Input #1
017	AC Input #2
018	DC Output

Connecting Parallel Shelves



7. **Connect parallel shelves.**

   NOTE: *When using a single shelf, still need to configure Daisy Chain Jumper.*

   There are two kinds of network cable (P/N 0411B749 and P/N 0411C205), the default configuration is to use short network cable (P/N 0411B749) for parallel operation. When the distance between two shelves in the rack exceeds 250 mm (9.84 inches), order long network cable (P/N 0411C205).

Installing PSUs

The PSU is hot swappable. It can be removed or installed with the system operating without affecting the output bus.

CAUTION: *The rectifier contains double pole fusing; parts of the equipment that remain energized might represent a hazard during servicing after operation of the fuse.*

8. **Insert the module.**

   Unpack the PSU. Partially slide the PSU into the shelf.

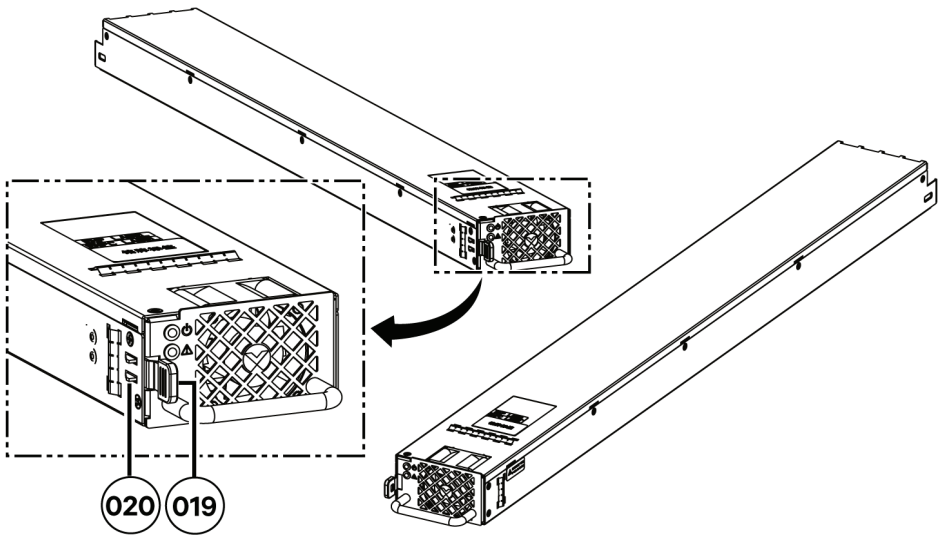
9. **Retract the latch mechanism.**

   Push the spring latch handle located on the front of the PSU. The securing latch on the side of the PSU will retract.

10. **Secure the PSU into the shelf.**

    Slide the PSU completely into the shelf and release the spring latch handle. The securing latch located on the side of the PSU will pop into a notch in the shelf to secure the PSU to the shelf.

Installing PSUs



Item	Description
019	Spring Latch Handle
020	Securing Latch

11. **Repeat the above steps for each PSU being installed.**

    NOTE: *PSUs are ready for operation immediately after they are installed in the mounting assembly and power is supplied to them.*

12. **Check for alarms.**

    Ensure there are no local or remote alarms active on the system

    NOTE: *Alarms are not available untill after the PMM is installed.*

Installing the PMM

The PMM is hot swappable. It can be removed or installed with the system operating without affecting the output bus.

13. **Insert the module.**

    Unpack the PMM. Partially slide the PMM into the shelf.

14. **Release the latch mechanism.**

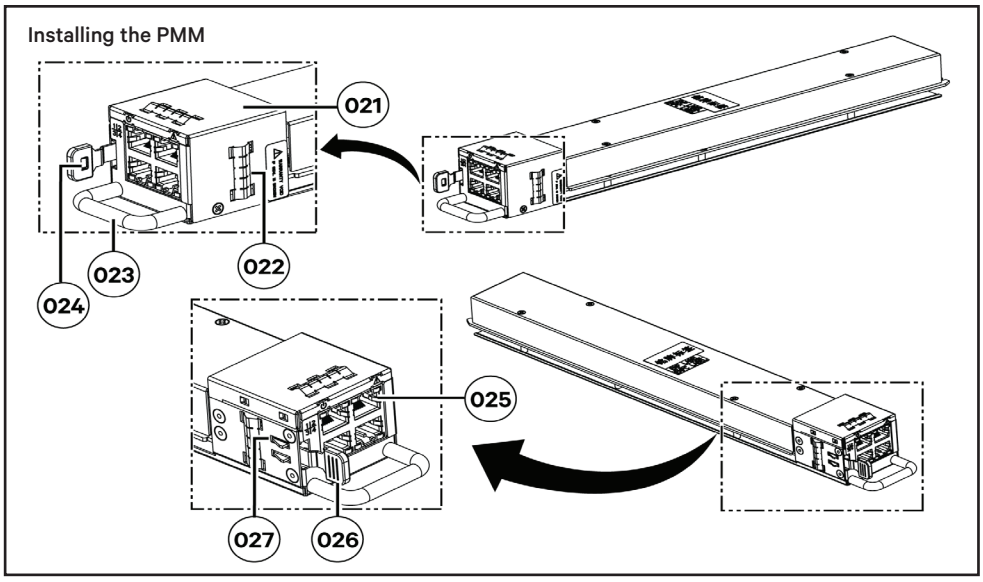
    Push the spring latch handle located on the front of the PMM to the right (this will retract the securing latch located on the side of the PMM).

15. **Secure the PMM into the shelf.**

    Slide the PMM completely into the shelf and release the spring latch handle. The securing latch located on the side of the PMM will pop into a notch in the shelf to secure the PMM to the shelf.

16. **Verify operation.**

    If the system is operating, wait for the PMM to finish booting and verify that the system operates normally and ensure there are no alarms. Communication to the PMM is via modbus over RS485. Refer to user manual for details.



Item	Description
021	Shell
022	EMI Gaskets
023	Handle
024	Latch
025	RJ45 Connector
026	Spring Latch Handle
027	Securing Latch

Customer Documentation Package

Document Number	Description	How Provided
UM1PSS5033	Power System Installation and User Instructions	PDF File
SAG1PSS5033	System Application Guide	PDF File
UM1PMM1S0	System Controller User Instructions	PDF File
UM1R505500E4	Power Supply Unit Instructions	PDF File

To contact Vertiv Technical Support: visit www.Vertiv.com