

# VERTIV™GEIST™

## Basic Rack PDU

### User Manual

|               |               |
|---------------|---------------|
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## Notes

- Non-professionals are strictly prohibited from disassembling or assembling this product on their own. All the consequences caused by the users disassembly are at their own risk.
- Do not install electrical equipment or power distribution units in thunderstorm weather.
- It is strictly prohibited to insert grounding pins into any live holes and the unipolar pins.
- Touching the plug is strictly prohibited in the process of inserting the plug into the socket.
- Please use special tools when operating the liquid magnetic circuit breaker. All the consequences caused by users disassembly are at their own risk.
- This product can only be plugged into the same power plug as the product's own socket type. It may be dangerous for users to forcibly connect to different types of plugs.
- If unusual phenomenon is found in the course of use of this product, the power supply should be cut -off immediately, and the cable plug should be pulled out and sent to the local authorized distribution and maintenance service agency for checking.



# Chapter 1 Introduction

This chapter includes a brief overview of the functions, specifications, models and specifications of the Basic PDU (referred as PDU) in the VERTIV™ GEIST™ rack PDU.

## 1.1 Functions

Basic PDU is power distribution unit that provides a safe and reliable power supply for all critical IT equipment within a rack or cabinet. It is suitable for facilities equipped with surge protection at the main electrical service entrance. The unique U-Lock structure of Geist PDU (applicable to select SKUs) ensures the locking of the socket and improves the reliability of equipment power supply. Color grouping of U-lock can effectively improve the management efficiency of the equipment for data center managers, and different chassis colors are available for selection (subject to availability).

## 1.2 Technical Specification

Environmental and Electrical specification as shown in Table 1-1

Table 1-1 PDU Technical Specification

| Parameter Type           | Parameter Name                | Description     |
|--------------------------|-------------------------------|-----------------|
| Environmental Conditions | Operating ambient temperature | -10 °C ~ 45 °C  |
|                          | Storage temperature           | -40 °C ~ 70 °C  |
|                          | Operating humidity            | 5% ~ 95%        |
|                          | Storage humidity              | 5% ~ 95%        |
|                          | Operating Altitude            | ≤ 3050 m        |
| Electrical parameter     | Voltage                       | 100Vac ~ 240Vac |
|                          | Frequency                     | 50 Hz/60 Hz     |


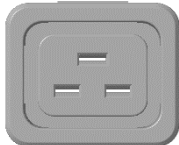
Compliances as shown in Table 1-2

Table 1-2 PDU Certificates Specification

| Product | Certificates Type |            |
|---------|-------------------|------------|
|         | CE                | China RoHS |
| PDU     | ✓                 | ✓          |

Receptacle types and ratings as shown in Table 1-3

Table 1-3 Receptacle Types and Rating

| No. | Specifications | Appearance  | Maximum load current (AC) |
|-----|----------------|---|---------------------------|
| 1   | IECC13         |  | 10 A                      |
| 2   | IECC19         |  | 16 A                      |

## 1.3 Model and Specification

Table 1-4 lists the model and specification of the PDU.

Table 1-4 PDU Model and Specification

|        | Model # | Part #   | Amp (AC) | Hydraulic Magnetic Breaker (Qty) | Receptacle     | U-Lock | Plug Type | Dimension mm (W×H×D) | Installation | Cable L |
|--------|---------|----------|----------|----------------------------------|----------------|--------|-----------|----------------------|--------------|---------|
| 1U PDU | C1646L  | 14240243 | 16A      | None                             | C13 x10        | Y      | IEC60309  | 432×44×165           | Horizontal   | 3m      |
|        | C1648L  | 14240245 | 32A      | 2                                | C13 x 4+C19 x4 | Y      |           | 978×51×51            |              |         |
| 0U PDU | C1647L  | 14240244 | 16A      | None                             | C13 x10+C19 x2 | Y      |           | 1683×51×51           | Vertical     |         |
|        | C1650L  | 14240246 | 32A      | 2                                | C13 x20+C19 x4 | Y      |           |                      |              |         |
|        | C1651   | 14240256 | 16A      | 无                                | C13 x20+C19 x4 | N      | Hardwired |                      |              |         |
|        | C1652   | 14240257 | 32A      | 2                                | C13 x20+C19 x4 | N      |           |                      |              |         |



## Chapter 2 Installation

This chapter includes the installation of PDU, including the installation requirement, installation preparation, and installation diagram.

### 2.1 Installation Requirement

- (1)The ambient temperature of the PDU installation location must not exceed 60°C.
- (2)Ensure that the PDU is installed in a well-ventilated environment.
- (3)Installation of the PDU should avoid the risk of electrical load imbalance.
- (4)Connect the equipment to the branch circuit according to the nameplate nominal rating, taking into consideration the possible effects that overloading of the circuits might have on overload protection and supplied wiring.
- (5)PDU overload current protection depends on building installation, where certified overload protection device must be installed. The parameters of the overload protection device should comply with the PDU nameplate ratings and local/national electrical code.
- (6)The power supply of the circuit breaker-free PDU needs to be equipped with overload protection and the overload protection type needs to refer to the PDU rating parameters.
- (7)The installation equipment should ensure reliable grounding, and special attention should be paid to the reliable grounding of the input power supply based on the branch circuit. The PDU must be connected to an earthed socket outlet.
- (8)The PDU installation area should be restricted and only trained service personnel should install and access the PDU.
- (9)For pluggable equipment, install the PDU so the input plug or appliance coupler may be disconnected for service.
- (10)The PDU is intended for indoor use only. Do not install the unit in wet or outdoor environments, and do not install it next to water tanks or plumbing.
- (11)The PDU is intended for use with TN, TT power supply systems.

### 2.2 Installation Preparation

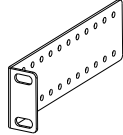
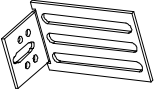
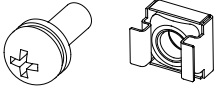
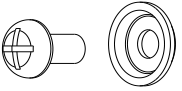
- (1)Select the appropriate tool to mount the equipment on the rack. For examples of installation, refer section 2.3 Installation Diagram.
- (2)Plug the PDU into appropriately rated and protected branch circuit receptacles.
- (3)During PDU installation, ensure that the device is powered off.
- (4)Do not connect PDU-powered devices before installation.

## 2.3 Installation Instruction

### 2.3.1 Installation Accessories

Table 2-1 lists the accessories to be used during installation.

Table 2-1 Installation Accessories

|                         | 1U Mounting bracket<br>(2pcs)   | 0U Mounting bracket<br>(2pcs)   | M6 floating nut and<br>M6 x 16 screw (4 sets)                                       | Toolless mounting<br>button   |
|-------------------------|---|---|---|---|
|                         |  |  |  |  |
| Horizontal installation | ✓   |   | ✓   |   |
| Vertical installation   |   | ✓   |   | ✓   |

### 2.3.2 Installation Procedures

Two installation modes are available for the PDU: horizontal installation and vertical installation.

#### Horizontal installation

1U model is suitable for Horizontal Installation.

Fix the PDU onto the 19" rails with M6 floating nuts and M6 x16 screws, as shown in Figure 2-1.

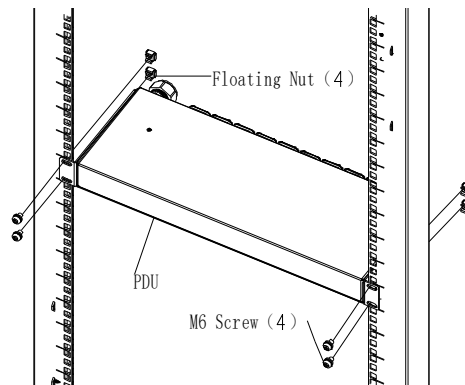


Figure 2-1 PDU installation

#### Note

For 1U horizontal mounting PDU, the brackets can be installed on the front or the rear.

#### Vertical installation

0U model is suitable for vertical installation. Vertical installation is divided into two types: Tool-less and bracket mounting.

##### 1. Tool-less installation

1) Insert the two mounting buttons (installed before delivery) on the rear of the PDU into the suitable installation hole on the cable organizer of the cabinet.

- 2) Press down the PDU until it is firmly clamped and locked, as shown in Figure 2-2.
- 3) Remove the PDU from the rack, lift the PDU vertically and make it slide upwards until the button is out of the mounting hole.

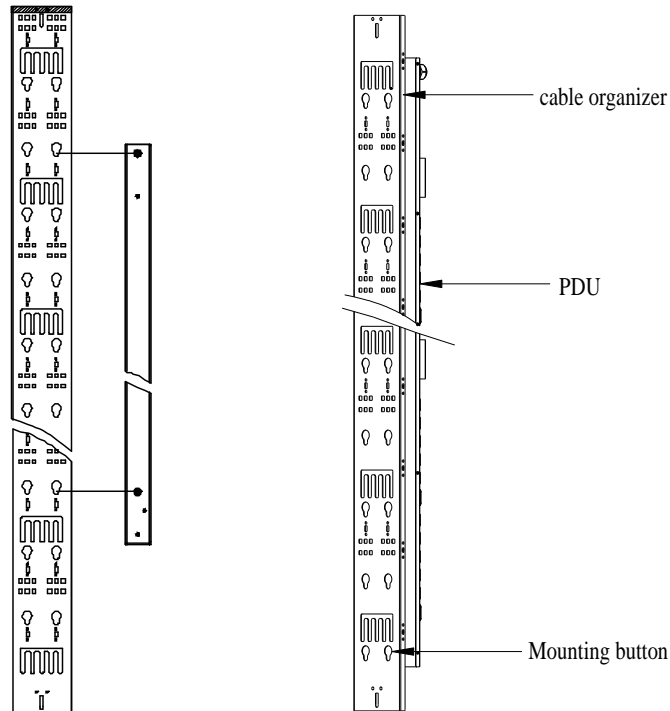


Figure 2-2 PDU Tool-less Installation

**Note**

The distance of the installation hole on the cable manager used for the tool-less installation should be an integral multiple of 312 mm.

**2. Bracket Mounting**

- 1) Install the brackets on both ends of the PDU with M3 × 10 Self tapping screws, as shown in Figure 2-3.
- 2) Install the PDU on the rack with supplied accessory screw/nut, as shown in Figure 2-3.



Figure 2-3 Fixing the Bracket

**Installed on the VE rack beam**

Align the installation holes of the two 0U brackets with the higher row round hole of the top crossbeam and the upper row round hole of the bottom crossbeam respectively and install the PDU on to the crossbeam of the VE rack using four self-tapping screws.

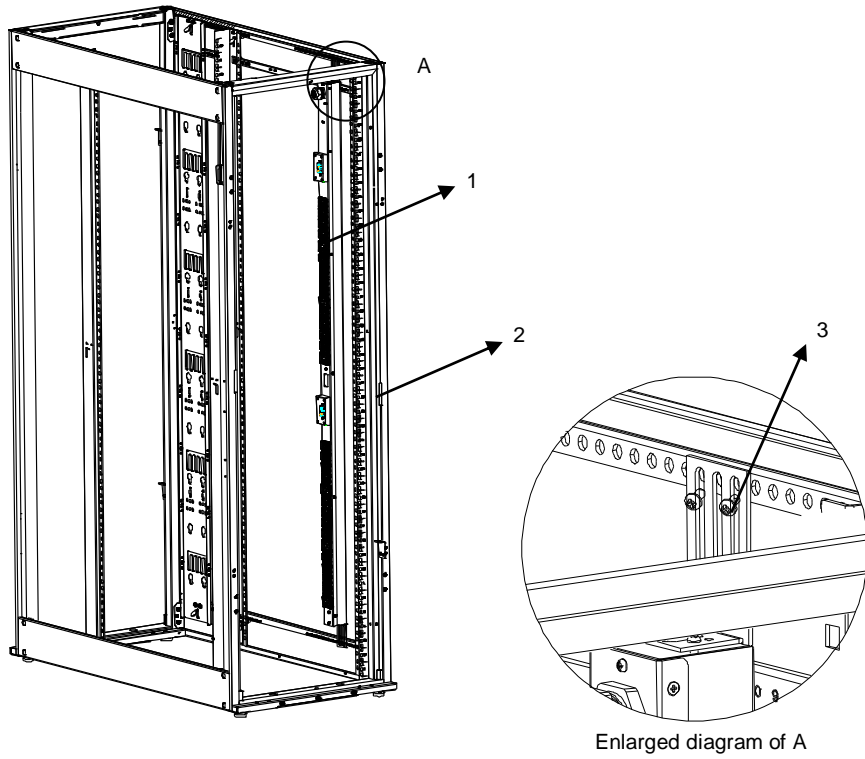


Figure 2-4 Installing PDU (VE series cabinet)

Table 2-2 Details of Installation with Bolt

| Item        | 1   | 2       | 3                |
|-------------|-----|---------|------------------|
| Description | PDU | Cabinet | M6 screw and Nut |

**Note**

1. The installation with bolt is only suitable for the 0U PDU with the length is 1683mm
2. During PDU installation, the input cable of the PDU need to be secured to the rack or cable manager and cannot be left suspended.

## Chapter 3 U-Lock

This chapter introduces the function of unique colored U-lock of Geist PDU. This feature is applicable to select SKUs only.

### 3.1 Operation of U-Lock

The plug will be locked by the unique U-lock design when inserted in the socket, without any additional action. When the plug needs to be unplugged, press the U-lock bezel on the socket at two opposite sides to release the lock and pull out the plug. The operation is shown in Figure 3-1.

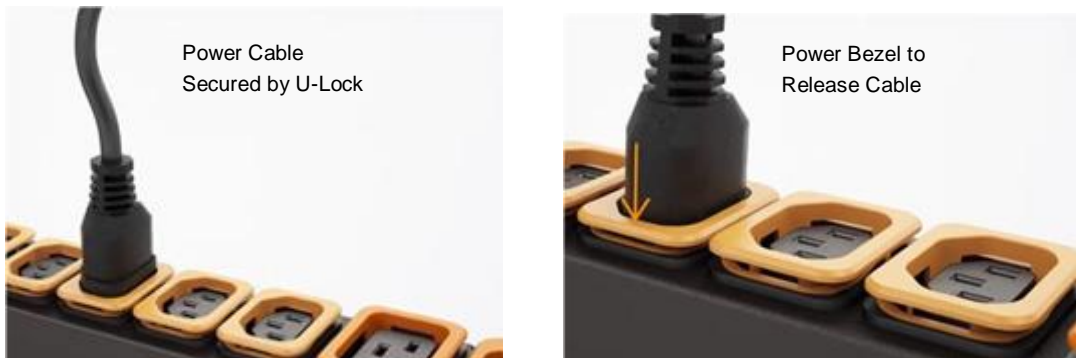


Figure 3-1 Operation of U-Lock

## Appendix: Identification Table for Toxic and Harmful Substances or Elements

| Part Name   | Toxic and harmful substances or elements |         |         |                     |                             |                                |
|---|--|---------|---------|---------------------|-----------------------------|--------------------------------|
|   | Lead                                     | Mercury | Cadmium | Hexavalent Chromium | Polybrominated biphenylsPBB | Polybrominated diphenyl ethers |
|   | Pb                                       | Hg      | Cd      | Cr6+                | PBB                         | PBDE                           |
| Copper Bars   | o  | o       | o       | o                   | o                           | o                              |
| Cable   | o  | o       | o       | o                   | o                           | o                              |
| <p>o: Indicates the content of the toxic and hazardous substance in all homogeneous materials of the part is within the limits specified in SJ/T-11363-2006.</p> <p>x: Indicates the content of the toxic and hazardous substance in at least one of the average quality materials of the part is outside the limits specified in SJ/T-11363-2006.</p>  |  |         |         |                     |                             |                                |
| <p>Vertiv Co., Ltd. has been committed to the design and manufacturing of environmentally-friendly products, it will reduce and eventually eliminate the hazardous substances in the products through unremitting efforts in research. However, limited by the current technical level, the following parts still contain hazardous substances due to the lack of reliable substitute or mature solution: The cable head contains lead.</p> |  |         |         |                     |                             |                                |
| <p>About Environment Protection Period: The Environment Protection Period of the product is marked on the product. Under normal working conditions and normal use of the products observing relevant safety precautions, the hazardous substances in the product will not seriously affect the environment, personnel safety or property in the Environment Protection Period starting from the manufacturing date.</p>                     |  |         |         |                     |                             |                                |
| <p>Scope of application: VERTIV™ GEIST™ RACK PDU</p>  |  |         |         |                     |                             |                                |