



Lenovo 0U Basic PDUs

Product Guide

The Lenovo zero-U (0U) Basic power distribution units (PDUs) are the ideal solutions when you need flexible, reliable, easy-to-deploy power distribution with branch circuit protection to minimize downtime. These rack-dense units distribute power to up to 42 outlets. The 0U PDUs are designed to be installed vertically in the rear channel or side pockets of a Lenovo rack, thereby not consuming any horizontal rack space that otherwise be used by servers, storage and network switches (hence the term 0U).

The following figure displays the 0U Basic PDUs.

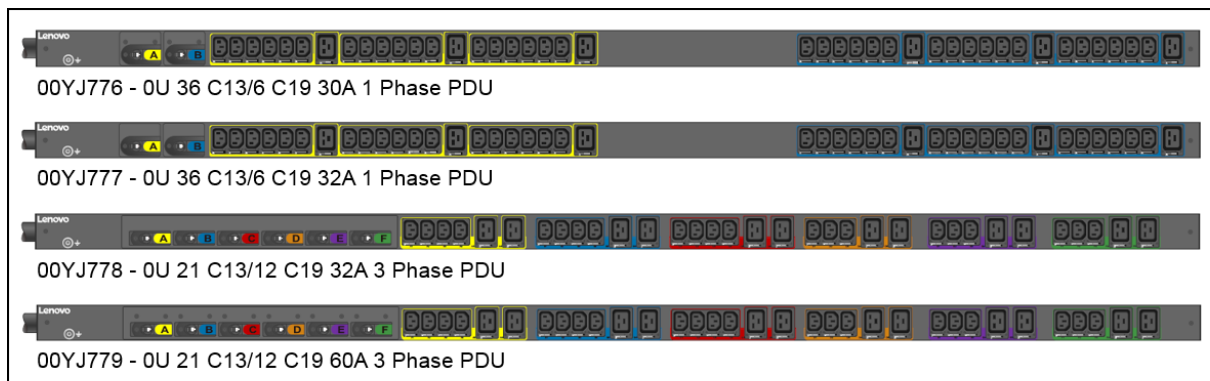


Figure 1. Lenovo 0U Basic PDUs

Did you know?

With ever growing power densities in today's rack environments, it is all too easy to add load in the wrong place and trigger an overload event. The 0U Basic PDU offerings can minimize this impact, providing the ability to quickly recover with resettable circuit breakers for each designated bank of receptacles, referred to as load groups. Breakers are color coded to the receptacles in a particular load group to aid in configuration, installation, and maintenance.

Introduction to PDUs

A power distribution unit (PDU) is a highly reliable, multiple outlet power strip designed to consolidate line cords within the rack and distribute conditioned power from an uninterruptible power supply (UPS) or utility power to servers and other IT equipment. The PDU efficiently distributes power within the rack and provides fault-tolerant power redundancy for high availability requirements.

There are three types of PDUs available from Lenovo: basic, monitored, and switched & monitored. The PDUs covered in this document are of the basic type.

- **Basic PDUs:** The simplest and most cost-effective power distribution. Available with various outlet configurations and line cord options to support different systems and load requirements.
- **Monitored PDUs:** provides the same benefits as a Basic PDU, but adds additional advanced PDU power monitoring down to the load group. This enables businesses to have a cross-platform rack-level power and thermal view for trending analysis to improve power management
- **Switched & monitored PDUs:** These are advanced power management solutions, providing power monitoring at the outlet level, with increased accuracy at low amperages, for more precise views of power consumption down to the individual server level instead of at the consolidated load group. These PDUs also offer management via a web-based interface which includes individual outlet switching (on/off). Outlet switching allows for remote power sequencing and helps prevent unintended PDU overloading.

Part number information

The following table provides the ordering part numbers and feature codes for the 0U Basic PDUs.

Table 1. Ordering part numbers and feature codes

Part number	Feature code	Description	Region availability*
00YJ776	ATZY	0U 36 C13/6 C19 24A1 Phase PDU (30A derated)	North America
00YJ777	ATZZ	0U 36 C13/6 C19 32A 1 Phase PDU	International
00YJ778	AU00	0U 21 C13/12 C19 32A 3 Phase PDU	International
00YJ779	ATZX	0U 21 C13/12 C19 48A3 Phase PDU (60A derated)	North America

* See region availability below

Region availability

PDUs indicated in Table 1 as available for North America are available in the following countries:

- United States
- Canada
- Mexico
- Saudi Arabia
- Japan
- Philippines
- Some of Brazil

PDUs indicated in Table 1 as available Internationally are available in these regions:

- Europe
- Africa
- Most of the Middle East
- Most of Asia
- Australia/New Zealand

- Most of South America

Included with the PDUs

The PDUs include the following items:

- One Power Distribution Unit with an attached power cord
- Two spare black plastic key hole buttons for securing clip feet on rack
- Mounting hardware
- Adhesive power feed labels: 1x blue arrow and 1x red arrow (to indicate power source flow)
- PDU warranty poster
- Safety CD
- Important notice
- Quick start guide

Features and specifications

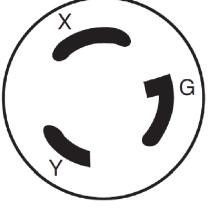
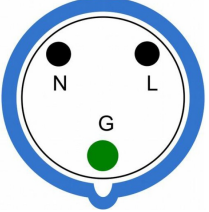
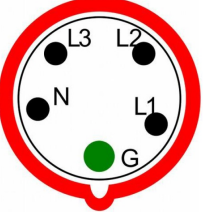
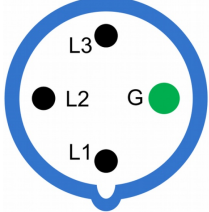
The 0U Basic PDUs have the following common features:

- These PDUs are Eaton-supplied basic PDUs. These are called basic PDUs as they are the simplest and most cost-effective power distribution available.
- 0U rack-dense design with attached input cable, primary outlets, and breakers on one face to improve usability and cable management
- Hardware included to mount in side pocket of rack
- Easily accessible and resettable UL489, color coded circuit breakers to aid in set up, configuration and maintenance in high availability environments.
- Electronic over-current protection
- High capacity up to 23 kW (model dependent)
- The use of PDUs simplifies cable management and increases accessibility. In addition, the button-mount design of these 0U Basic PDUs helps simplify deployment by providing rear and/or side mounting in 9307, 9308, 9360, 9361 and 9363 model rack cabinets making installation of these PDUs extremely versatile. For a complete list of supported rack cabinets, see the Supported rack cabinets section.

The following table compares the technical and environmental specifications of the 0U Basic PDUs.

Table 2. PDU specifications

Feature	0U 36 C13/6 C19 30A 1 Phase PDU	0U 36 C13/6 C19 32A 1 Phase PDU	0U 21 C13/12 C19 32A 3 Phase PDU	0U 21 C13/12 C19 60A 3 Phase PDU
Part Number	00YJ776	00YJ777	00YJ778	00YJ779
Feature Code	ATZY	ATZZ	AU00	ATZX
Region	North America	International	International	North America
Input power				
Number of phases	Single phase input		Three phase input	
Line cord	Attached line cord, 3 m length (9-ft, 10-in)			
Line cord connector	NEMA L6-30P	332P6, W+N+PE 1ph	532P6, WYE, 3W+N+PE 3Ph	HBL460P9, Delta 3W+PE 3ph

Feature	0U 36 C13/6 C19 30A 1 Phase PDU	0U 36 C13/6 C19 32A 1 Phase PDU	0U 21 C13/12 C19 32A 3 Phase PDU	0U 21 C13/12 C19 60A 3 Phase PDU
Plug design				
Input voltage	200-240V	200-240V	200-240V / 350-415V	200-240V
Input current	24A (derated from 30A)	32A	32A	48A (derated from 60A)
Maximum power rating	5760 VA	7680 VA	23,040 VA	20,736 VA
Output power				
Number of C13 outlets	36	36	21	21
Number of C19 outlets	6	6	12	12
Output voltage rating at 50/60Hz	200-240V	200-240V	200-240V	200-240V
Output current rating	Each C13 outlet: 10 amps; Each C19 outlet: 16 amps			
Circuit breakers	Two double-pole branch rated circuit breakers rated at 16A		Six double-pole branch rated circuit breakers rated at 16A	
Number of load groups	2 (A, B)	2 (A, B)	6 (A-F)	6 (A-F)
Number of outlets per load group	A = 18x C13, 3x C19 B = 18x C13, 3x C19	A = 18x C13, 3x C19 B = 18x C13, 3x C19	A = 4x C13, 2x C19 B = 4x C13, 2x C19 C = 4x C13, 2x C19 D = 3x C13, 2x C19 E = 3x C13, 2x C19 F = 3x C13, 2x C19	A = 4x C13, 2x C19 B = 4x C13, 2x C19 C = 4x C13, 2x C19 D = 3x C13, 2x C19 E = 3x C13, 2x C19 F = 3x C13, 2x C19
Capacity per load group (Amps)	A = 20 A B = 20 A	A = 16 A B = 16 A	A = 20 A B = 20 A C = 20 A D = 16 A E = 16 A F = 16 A	A = 20 A B = 20 A C = 20 A D = 20 A E = 20 A F = 20 A
Capacity per phase (Amps)	Not applicable	Not applicable	Phase 1: A + D = 32 A Phase 2: B + E = 32 A Phase 3: C + F = 32 A	Phase 1: A + D = 32 A Phase 2: B + E = 32 A Phase 3: C + F = 32 A
Capacity per PDU (Amps)	24 A	32 A	96 A	86 A
Mechanical and environmental				

Feature	0U 36 C13/6 C19 30A 1 Phase PDU	0U 36 C13/6 C19 32A 1 Phase PDU	0U 21 C13/12 C19 32A 3 Phase PDU	0U 21 C13/12 C19 60A 3 Phase PDU
Physical dimensions (DxWxH)	2.5 x 2.0 x 66.4 in 66 x 52 x 1689 mm	2.5 x 2.0 x 66.4 in 66 x 52 x 1689 mm	3.0 x 2.0 x 66.4 in 77 x 52 x 1689 mm	3.8 x 2.0 x 66.4 in 99 x 52 x 1689 mm
Weight	4 kg / 8.8 lb.	4 kg / 8.8 lb.	5.3 kg / 11.6 lb.	8.7 kg / 19.1 lb.
Operating temperature	10° C to 55° C 50° F - 122° F	10° C to 60° C 50° F to 140° F	10° C to 60° C 50° F to 140° F	10° C to 55° C 50° F - 122° F
Operating humidity	5% to 95% without condensation			

Connectors and load groups

The 0U Basic PDUs with 36 C13 connectors and 6 C19 connectors (part numbers 00YJ776 and 00YJ777) have the components and controls as shown in the following figure.

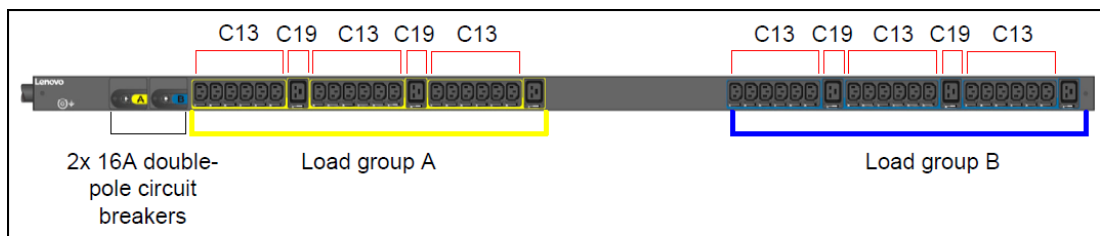


Figure 2. Load groups for part numbers 00YJ776 and 00YJ777

The 0U Basic PDUs with 21 C13 connectors and 12 C19 connectors (part numbers 00YJ778 and 00YJ779) have the components and controls as shown in the following figure.

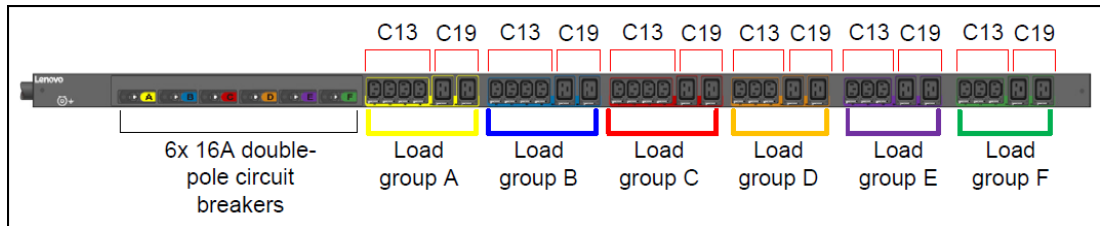


Figure 3. Load groups for part numbers 00YJ778 and 00YJ779

Selecting the right PDU

To avoid over sizing or under sizing power, it is important to understand the power requirements of the hardware that will be powered by the PDU(s). To understand this, use the Power Configurator tool to determine the hardware's overall power usage. Download the Power Configurator from the following link: <http://support.lenovo.com/au/en/documents/LNVO-PWRCONF>

Likewise, to avoid over sizing or under sizing PDUs it is also important to understand the PDU capabilities and capacities.

Consider the following for capabilities:

- Do you require monitoring and/or outlet switching? If so, then visit the Product Guide for switched & monitored PDUs at <http://lenovopress.com/lp0575>. If not, consider the Basic PDUs described here.
- Do you require environmental monitoring capabilities? If so, then visit the Product Guide for switched & monitored PDUs at <http://lenovopress.com/lp0575>. If not, consider the Basic PDUs described here.
- Does the PDU have the right type of power for your scenario? For example, 16A, 30A, 32A, 63A and single or three phase power?
- Does the PDU have enough of the correct type of outlets for your scenario?

Consider the following for capacities:

- Will each outlet be able to support the load being connected to it? For example, C13 outlets have a 10A limit.
- Will each load group be able to support the hardware being connected to it?
- Will each phase, where applicable, be able to support the hardware being connected to it?
- Is the overall power capacity of the PDU able to support the hardware being connected to it?
- Do you have enough PDUs to be N+N or N+1 redundancy if this is required?

For additional information on selecting the right PDU, load groups, phases, outlets, line cords, plugs and specifications, see the Lenovo PDU Technical Reference (International or North American version), available from: <http://support.lenovo.com/documents/lnvo-powinf>

Supported rack cabinets

The 0U Basic PDUs can be installed in the following racks:

- S2 42U Standard Rack cabinet (Types 9307)
- Enterprise Rack cabinet (Types 9308)
- 42U 1200mm Deep Dynamic Rack (Type 9360)
- 42U 1200mm Deep Static Rack (Type 9361)
- 47U 1200mm Deep Static Rack (Type 9362)
- 42U 1100mm Enterprise V2 Dynamic Rack (Type 9363)

Each PDU has a universal mounting bracket that enables the PDU to be mounted in a variety of different racks that are outside of the Lenovo portfolio.

The PDU is designed to be mounted without the use of tools. Mounting buttons are pre-installed on the rear of the PDU at the factory. The mounting buttons allow for three mounting methods for installing the 0U Basic PDUs vertically in a rack.

- Using factory-installed buttons on the PDU to mount the PDU in keyhole openings in the rack frame
- Using buttons on clip feet to mount the PDU in keyhole openings in the rack frame
- Using clip feet and cage nuts secured to the rack to mount the PDU onto the clip

For additional information on racking the 0U Basic PDUs, refer to User's Guide for the PDUs.

Warranty

The 0U Basic PDUs are offered with a three-year limited warranty. At Lenovo discretion this warranty will be either CRU service (customer replaceable unit) or a Lenovo employee, subcontractor or reseller will be assigned to repair the failing item. Proof and date of purchase is required for warranty claims.

Agency approvals

The PDUs conform to the following standards:

- Circuit breaker UL489 approval
- Circuit breaker IEC/EN60934 approval
- Outlet standard: IEC C13-C19: UL498 and IEC 60320

Related publications and links

For more information, see the following documents:

- Rack and power infrastructure portfolio (PDU home page)
<https://www.lenovo.com/us/en/data-center/servers/server-options/system-x-options/rack-and-power-infrastructure/power-distribution-units/c/power>
- User Manual
http://systemx.lenovofiles.com/help/topic/com.lenovo.sysx.racks.doc/0U_Strip_PDU.html?cp=0_6_1_1_0
- Lenovo PDU Quick Reference Guide - North America
<http://lenovopress.com/redp5266-pdu-quick-reference-north-america>
- Lenovo PDU Quick Reference Guide – International
<http://lenovopress.com/redp5267-pdu-quick-reference-international>
- PDU and UPS Technical Reference Guides:
<http://support.lenovo.com/documents/LNVO-POWINF>
- Power Configurator tool:
<http://support.lenovo.com/documents/LNVO-PWRCONF>

Related product families

Product families related to this document are the following:

- [Power Distribution Units](#)

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