Lenovo 0U PDUs
Product Guide

The Lenovo zero-U (0U) Basic and Switched and Monitored 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 48 outlets and 42 outlets. 0U PDUs are designed to be installed vertically in the rear channel 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 Lenovo zero-U (0U) PDUs. (v1 and v2 models are identical).

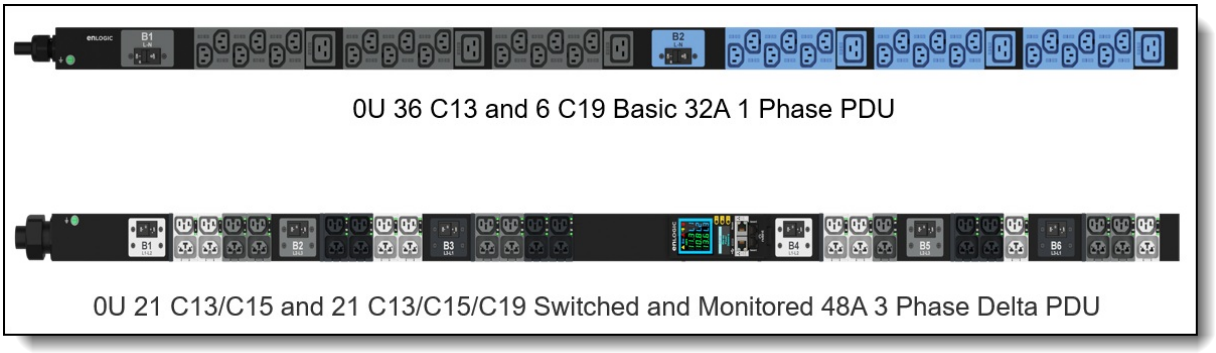


Figure 1. Lenovo 0U PDUs

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 and Switched and Monitored 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. Furthermore, the Basic PDUs offer a cost-effective option to users who do not require intelligence. The Switched and Monitored PDUs also offer individual outlet remote monitoring and switching (on/off), which allow for remote power sequencing and further helping to prevent unintended PDU overloading.

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 two types of 0U PDUs available from Lenovo. The PDUs covered in this document are:

- 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.
- 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.

Basic PDUs

The Basic PDUs offer a cost-effective option to users who do not require intelligence. Premium hydraulic-magnetic circuit breakers operate reliably in high temperature environments.

The following tables provide the ordering part numbers for the Basic PDUs.

Table 1. v1 Basic PDUs - Ordering part numbers

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4XF7A93901	C0XG	0U PDU Mounting Bracket for 9307 Rack	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 2. v2 Basic PDUs - Ordering part numbers

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A93176	C0QH	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93177	C0QJ	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

The following table shows the orderable part number, feature code and CTO (Machine Type/Model) for the v2 Basic PDU models.

Table 3. Ordering part number, feature code and CTO models

Description	Part number	Feature code	CTO
V2 Basic PDUs			
0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU v2	4PU7A93176	C0QH	7DGLCTO1WW
0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU v2	4PU7A93177	C0QJ	7DGLCTO1WW

Included with the PDUs

The PDUs include the following items:

- One Power Distribution Unit with an attached power cord
- Mounting hardware
- PDU warranty poster
- Safety guidelines
- Quick start guide

The following figure displays the Basic PDUs. (v1 and v2 models are identical).

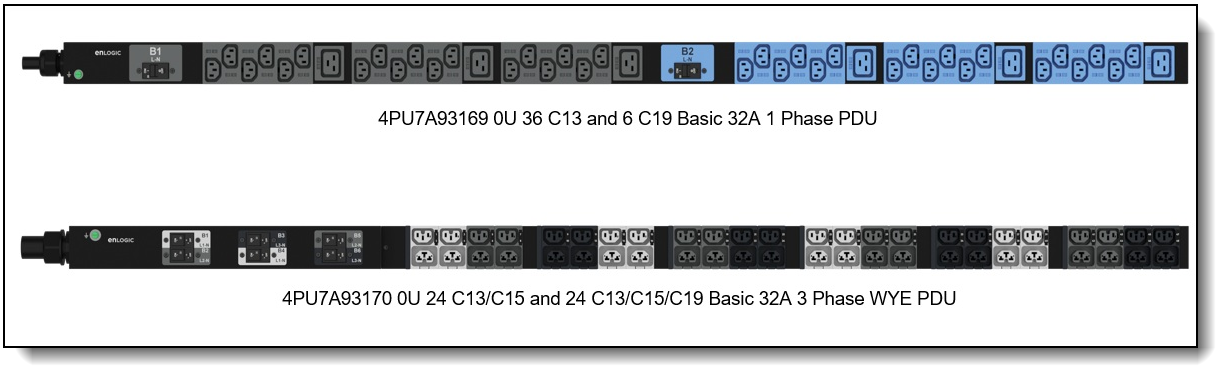


Figure 2. Lenovo 0U Basic PDUs

Features and specifications basic PDUs

The 0U Basic PDUs have the following common features:

- Advanced features, such as color-coded standard IEC outlets
- Enlogic's standard low-profile design
- Toolless mounting
- Operate reliably in high temperature environments.

Note: Network Management Module is not supported

The following tables compare the technical and environmental specifications of the 0U Basic PDUs.

Note: The Basic v1 and v2 are functionally identical

Table 4. v1 Basic PDUs specifications

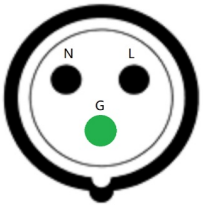
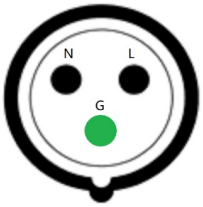
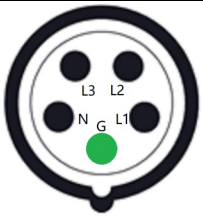
Feature	**0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU**
Part Number	4PU7A93169
Input power	
Number of phases	Single phase input
Line cord	Attached line cord, 3 m length (10 ft)
Line cord connector	IEC 60309 332P6
Plug design	
Input voltage	200-240V
Input current	30A (derated 24A) (NA) / 32A(EU)
Maximum power rating	5.kVA / 7.40 kVA
Output power	
Number of C13 outlets	36x (C13)
Number of C19 outlets	6x (C19)
Output voltage rating at 50/60Hz	200-240 VAC
Output current rating	Each C13 outlet: 10 amps; Each C19 outlet: 16 amps
Circuit breakers	2x 20A, single-pole electro mechanical switch
Capacity per PDU (Amps)	24A Total (NA) OR 32A Total (EU)
Mechanical and environmental	
Physical dimensions (L x W x D)	1490 mm x 52 mm x 53 mm
Operating temperature	-5 to 60°C (23 to 140°F)
Operating humidity	5-90% RH / 5-95% RH; non-condensing

Table 6. v2 Basic PDUs specifications

Feature	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU v2	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU v2
Part Number	4PU7A93176	4PU7A93177
Input power		
Number of phases	Single phase input	Three phase input
Line cord	Attached line cord, 3 m length (10 ft)	Attached line cord, 3 m length (10 ft)
Line cord connector	IEC 60309 332P6	IEC 60309 532P6
Plug design		
Input voltage	200-240V	200-240V / 346-415v
Input current	30A (derated 24A) (NA) / 32A(EU)	30A (derated 24A) (NA) / 32A(EU)
Maximum power rating	5.kVA / 7.40 kVA	17.3kVA / 22.10 kVA
Output power		
Number of C13 outlets	36x (C13)	24x (C13/C15 combo)
Number of C19 outlets	6x (C19)	24x (C13/C15/C19 combo)
Output voltage rating at 50/60Hz	200-240 VAC	200-240 VAC
Output current rating	Each C13 outlet: 10 amps; Each C19 outlet: 16 amps	Each C13 outlet: 10 amps; Each C19 outlet: 16 amps
Circuit breakers	2x 20A, single-pole electro mechanical switch	6x 20A, single-pole electro mechanical switch
Capacity per PDU (Amps)	24A Total (NA) OR 32A Total (EU)	24A Total (NA) OR 32A Total (EU)
Mechanical and environmental		
Physical dimensions (L x W x D)	1490 mm x 52 mm x 53 mm	1490 mm x 56 mm x 75 mm
Operating temperature	-5 to 60°C (23 to 140°F)	-5 to 60°C (23 to 140°F)
Operating humidity	5-90% RH / 5-95% RH; non-condensing	5-90% RH / 5-95% RH; non-condensing

Switched and Monitored PDUs

The following tables provide the ordering part numbers for the 0U Switched and Monitored PDUs.

Table 7. Switched and Monitored v1 PDUs - Ordering part numbers and feature codes

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A93171	C0D8	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93175	C0CS	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4XF7A93184	C0D2	PDU Environmental Sensor- Temperature & Humidity	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4X97A93183	C0D3	PDU serial communication Cable	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4XF7A93901	C0XG	0U PDU Mounting Bracket for 9307 Rack	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 8. Switched and Monitored v2 PDUs - Ordering part numbers and feature codes

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A93181	C0QN	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (60A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N
4PU7A93178	C0QK	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93182	C0QP	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93180	C0QM	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93179	C0QL	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU v2 (30A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N

The following table shows the orderable part number, feature code and CTO (Machine Type/Model) for the Switched and Monitored v2 PDU models.

Table 9. Ordering part number, feature code and CTO models

Description	Part number	Feature code	CTO
Switched and Monitored v2 PDUs			
0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (60A derated)	4PU7A93181	C0QN	7DGMCTO1WW
0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	4PU7A93178	C0QK	7DGMCTO1WW
0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU v2	4PU7A93182	C0QP	7DGMCTO1WW
0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU v2	4PU7A93180	C0QM	7DGMCTO1WW
0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU v2 (30A derated)	4PU7A93179	C0QL	7DGMCTO1WW

Included with the PDUs

The PDU unit is delivered in a corrugated box and contains:

- One Power Distribution Unit with an attached power cord
- Network Management Controller (NMC is pre-installed)
- Plugs and wires
- Safety information sheet
- Quick start guide
- Warranty card

The following figure displays the 0U Switched and Monitored PDUs. (v1 and v2 models are identical)

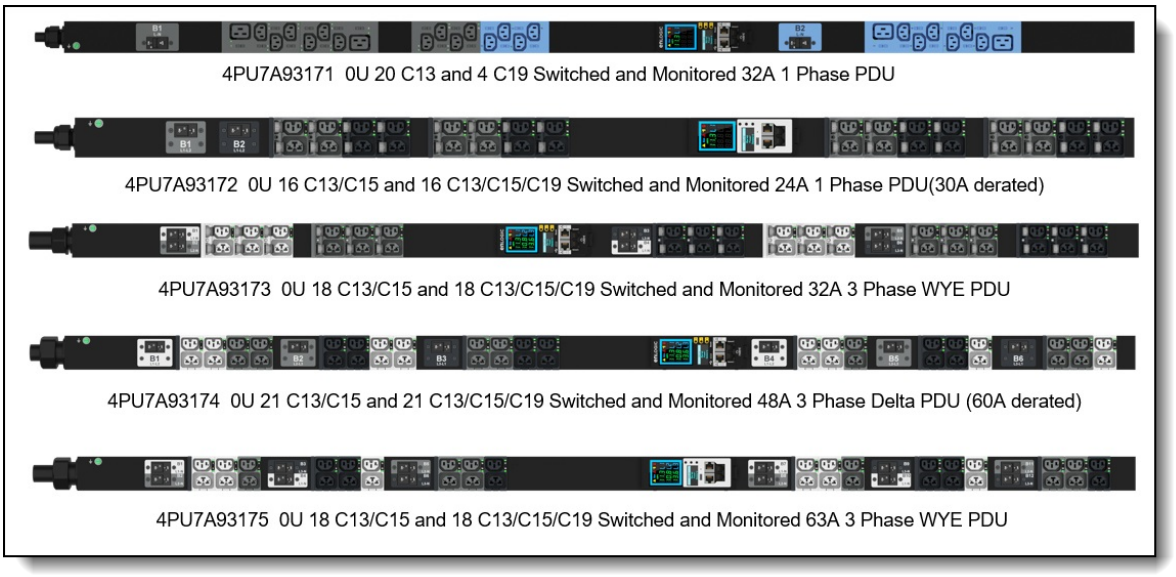


Figure 3. Lenovo 0U Switched and Monitored PDUs

Features and specifications switched and monitored PDUs

The 0U Switched & Monitored PDUs have the following common and intelligent features like:

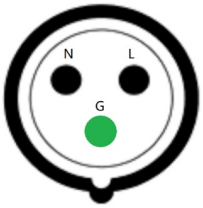
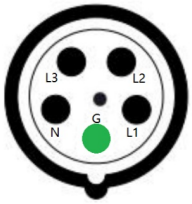
- Advanced features, such as color-coded with locking IEC outlets
- Enlogic's standard low-profile design
- Toolless mounting
- Operate reliably in high temperature environments.
- Sleek and space saving unit with low profile circuit breakers
- Color-coded receptacles and different type of power outlets which can be customized according to needs and IT requirements.
- Support Network Management Module and alerting capabilities supporting HTTP, HTTPS, SSH, SNMP, and email.
- Support encryption, passwords, and advanced authorization options including local permissions, LDAP/S, and Active Directory.
- Daisy Chain up to 64 Rack PDUs and supports a maximum of 10 environmental sensors each (sensors are optional)
- Power Sharing feature that allows the data of the PDU to be recorded even during a Power Failure.
- The Switched & Monitored PDUs also provide both current options with unique features:
    - **Single-Phase Models**:
        - All Single-Phase model support hydraulic magnetic breakers that are colour coded to the corresponding outlets.
    - **Three-Phase Models**:
        - In standard 415 V Three-Phase (Wye) configurations, the colour of each circuit breaker and outlet correspond to the appropriate input phase. The PDU is labelled to indicate the input-phase associated with each circuit breaker and outlets.
        - In North America 208 V Three-phase (delta) configurations, the colour of the circuit breaker corresponds to the line connections and includes a label of the two connected input-phases

The following tables compare the technical and environmental specifications of the 0U Switched and Monitored PDUs.

Note: The Switched and Monitored v1 and v2 are functionally identical

Table 10. Switched and Monitored v1 PDUs specifications

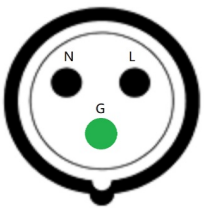
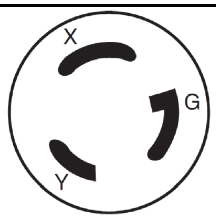
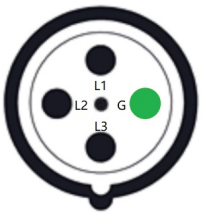
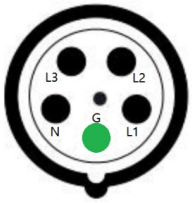
Feature	**0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU**	**0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 63A 3 Phase WYE PDU**
Part Number	4PU7A93171	4PU7A93175
Input power		
Number of phases	Single phase input	Three phase input
Line cord	Attached line cord, 3m length (10ft)	Attached line cord, 3m length (10ft)
Line cord connector	332P6, W+N+PE 1ph	IEC 60309, 4P 5W, 6H IP67 (watertight)

Feature	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU	0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 63A 3 Phase WYE PDU
Plug design		
Input voltage	200-240V	200-240V / 346-415 V
Input current	30A (derated 24A) / 32A (EU)	60A (derated 48A) (NA) / 63A (EU)
Maximum power rating	Dual-rated 5.0kVA (208V NOM) (NA) / 7.4kVA (230V NOM) (EU)	Dual-rated 34.6 kVA (240V NOM)(NA)/ 43.5 kVA (230V NOM)(EU)
Output power		
Number of outlets	• 20x C13 • 4x C19	• 18x C13-C15 combo • 18x C13-C15-C19 combo
Output voltage rating at 50/60Hz	200-240V	200-240V
Output current rating	Each C13 outlet: 10A; Each C19 outlet: 16A	Each C13-C15 combo outlet: 10A; Each C13-C15-C19 combo outlet: 16A
Circuit breakers	2x 20A, single-pole electro mechanical switch	12x 20A, single-pole electro mechanical switch
Capacity per PDU (Amps)	24A Total (NA) or 32A Total (EU)	48A Total (NA) or 63A Total(EU)
Mechanical and environmental		
Physical dimensions (L x W x D)	68.9 x 2.1 x 2.1 in 1750 x 52 x 53 mm	67.7 x 2.3 x 2.9 in 1720 x 56 x 75 mm
Operating temperature	-5 TO 60 C (23 TO 140 F)	-5 TO 60 C (23 TO 140 F)
Operating humidity	5% to 95% without condensation	5% to 95% without condensation

* USA, Canada
** USA, Canada, and Japan

Table 11. Switched and Monitored v2 PDUs specifications

Feature	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	0U 16 C13-C15 and 16 C13-C15-C19 Switched and Monitored 24A 1 Phase PDU v2 (derated from 30A)	0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 32A 3 Phase WYE PDU v2	0U 21 C13-C15 and 21 C13-C15-C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (derated from 60A)	0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 63A 3 Phase WYE PDU v2
Part Number	4PU7A93178	4PU7A93179*	4PU7A93180**	4PU7A93181	4PU7A93182
Input power					
Number of phases	Single phase input	Single phase input	Three phase input	Three phase input	Three phase input

Feature	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	0U 16 C13-C15 and 16 C13-C15-C19 Switched and Monitored 24A 1 Phase PDU v2 (derated from 30A)	0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 32A 3 Phase WYE PDU v2	0U 21 C13-C15 and 21 C13-C15-C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (derated from 60A)	0U 18 C13-C15 and 18 C13-C15-C19 Switched and Monitored 63A 3 Phase WYE PDU v2
Line cord	Attached line cord, 3m length (10ft)	Attached line cord, 3m length (10ft)	Attached line cord, 3m length (10ft)	Attached line cord, 3m length (10ft)	Attached line cord, 3m length (10ft)
Line cord connector	332P6, W+N+PE 1ph	NEMA L6-30P	532P6, WYE, 3W+N+PE 3Ph IP67 (watertight)	IEC460P9, Delta 3W+PE 3ph IP67 (watertight)	IEC 60309, 4P 5W, 6H IP67 (watertight)
Plug design					
Input voltage	200-240V	200-240V	200-240V / 346-415V	200-240V	200-240V / 346-415 V
Input current	30A (derated 24A) / 32A (EU)	30A (derated 24A)	30A (derated 24A) / 32A (EU)	60A (derated 48A)	60A (derated 48A) (NA) / 63A (EU)
Maximum power rating	Dual-rated 5.0kVA (208V NOM) (NA) / 7.4kVA (230V NOM) (EU)	5kVA (208V NOM)	Dual-rated 17.3 kVA (240V NOM)(NA) / 22.1 kVA (230V NOM) (EU)	17.3 kVA (208V NOM)	Dual-rated 34.6 kVA (240V NOM)(NA)/ 43.5 kVA (230V NOM)(EU)
Output power					
Number of outlets	• 20x C13 • 4x C19	• 16x C13-C15 Locking • 16x C13-C15-C19 Locking	• 18x C13-C15 Locking • 18x C13-C15-C19 Locking	• 21x C13-C15 combo • 21x C13-C15-C19 combo	• 18x C13-C15 combo • 18x C13-C15-C19 combo
Output voltage rating at 50/60Hz	200-240V	200-240V	200-240V	200-240V	200-240V
Output current rating	Each C13 outlet: 10A; Each C19 outlet: 16A	Each C13-C15 Locking outlet: 10A; Each C13-C15-C19 Locking outlet: 16A	Each C13-C15 Locking outlet: 10A; Each C13-C15-C19 Locking outlet: 16A	Each C13-C15 combo outlet: 10A; Each C13-C15-C19 combo outlet: 16A	Each C13-C15 combo outlet: 10A; Each C13-C15-C19 combo outlet: 16A
Circuit breakers	2x 20A, single-pole electro mechanical switch	2x 20A, double-pole electro mechanical switch	6x 20A, single-pole electro mechanical switch	6x 20A, double-pole electro mechanical switch	12x 20A, single-pole electro mechanical switch
Capacity per PDU (Amps)	24A Total (NA) or 32A Total (EU)	24 A	24A Total (NA) or 32A Total (EU)	48 A	48A Total (NA) or 63A Total(EU)
Mechanical and environmental					
Physical dimensions (L x W x D)	68.9 x 2.1 x 2.1 in 1750 x 52 x 53 mm	58.7 x 2.2 x 2.9 in 1490 x 56 x 75 mm	67.7 x 2.2 x 2.9 in 1720 x 56 x 75 mm	67.7 x 2.3 x 2.9 in 1720 x 56 x 75 mm	67.7 x 2.3 x 2.9 in 1720 x 56 x 75 mm
Operating temperature	-5 TO 60 C (23 TO 140 F)	-5 TO 60 C (23 TO 140 F)	-5 TO 60 C (23 TO 140 F)	-5 TO 60 C (23 TO 140 F)	-5 TO 60 C (23 TO 140 F)
Operating humidity	5% to 95% without condensation	5% to 95% without condensation	5% to 95% without condensation	5% to 95% without condensation	5% to 95% without condensation

* USA, Canada
** USA, Canada, and Japan

Connectors and load groups

The 0U Basic PDU with 36x C13 and 6x C19 connectors (part number 4PU7A93169 or 4PU7A93176) have the components as shown in the following figure.

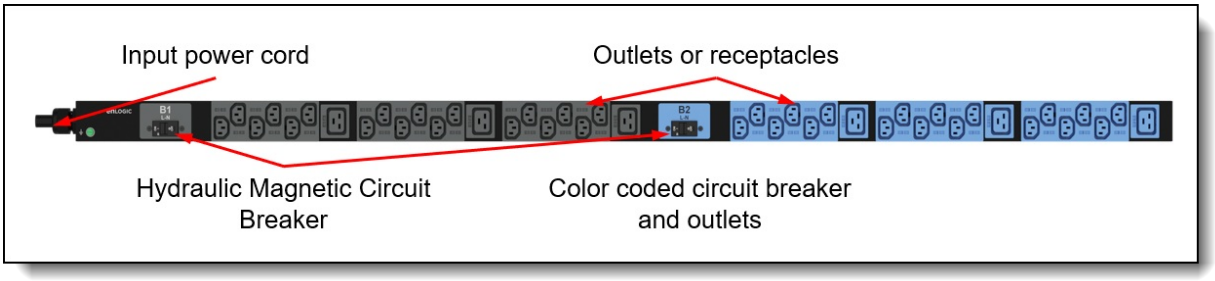


Figure 4. Connectors for Basic PDU (part number 4PU7A93169 or 4PU7A93176)

The 0U Switched and Monitored PDUs with 18x C13/C15 and 18x C13/C15/C19 connectors (part number 4PU7A93175 or 4PU7A93182) have the components and controls as shown in the following figure.

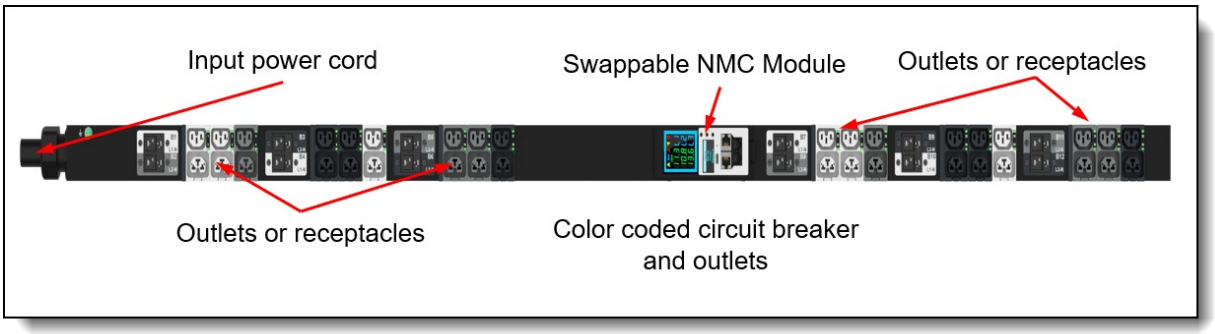


Figure 5. Connectors for Switched and Monitored PDU (part number 4PU7A93175 or 4PU7A93182)

Advanced Network Management

The Switched and Monitored PDUs include a hot-swappable Network Management Controller (NMC) that provides the interface and connectors to manage the PDU.

Features:

- Network Connectivity: Dual ports: 1x Gigabit Ethernet (10/100/1000 Mbps) and 1x (10/100 Mbps) connection/IP address
- Ethernet Cascading: Up to 64 units share a single “daisy-chain” Ethernet connection/IP address
- DC Power Sharing: Each PDU can provide DC power sufficient to power network management electronics and sensors in a neighboring PDU in the event of AC power source loss
- Dual Ethernet Support: Dual Ethernet ports for redundant communication
- Remote Connectivity: HTTP(s), iPV4 and iPV6, SSH, Virtual Serial, SNMP (v1, v2c, v3), JSON-RPC, LDAP(S), FTP/SFTP, RADIUS, Redfish DMTF RESTful API
- WebUI Interfacce: Data efficient REACT framework with native mobile device support

The following figure shows the LED screen and the ports of the NMC. The LED interface provides information about the load status, events, measurements, identification, and settings.

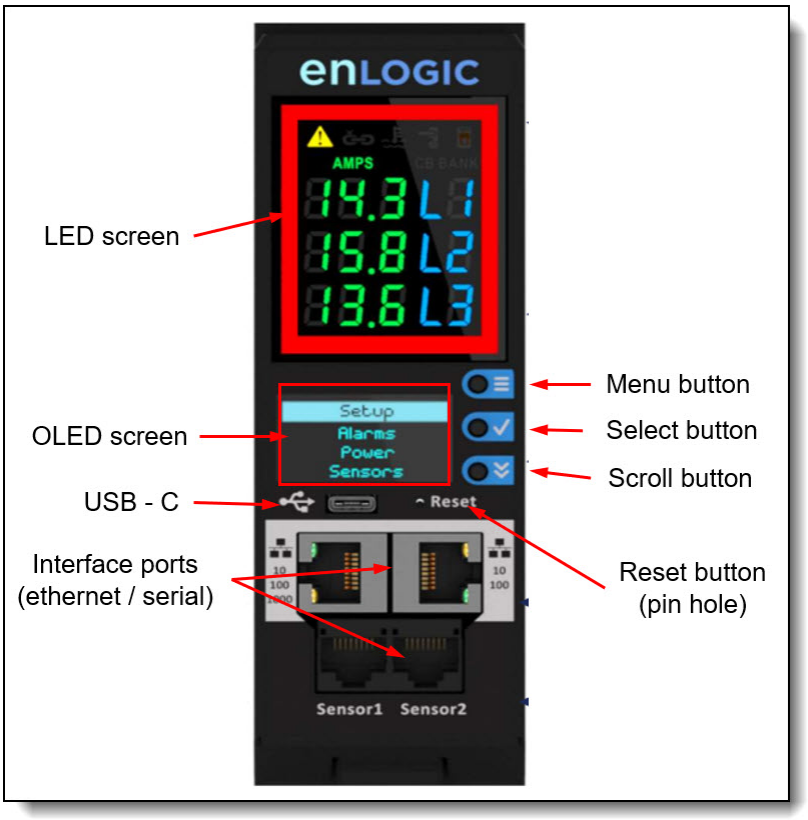


Figure 6. Interface of the Network Management Controller

The components of the NMC are as follows:

- **LED screen**:
  - Graphical alarm icon PDU Alarm
  - Daisy Chain Indicator
  - Environmental Sensor Alarm
  - Security Sensor Alarm
  - Circuit Breaker & outlet Alarm
  - Source color coding - user selected option

Figure 7. LED screen source color coding samples

- **OLED Screen**:
  - Setup
  - Alarms
  - Power

    - Sensors
- **Reset button:** Use this button to reset the PDU for communication purposes only. Resetting the PDU does not affect the outlets/loads.
- **Interface Ports**:
    - **USB-C port**: Use the USB connection to upgrade firmware and configuration file download/upload.
    - **Ethernet ports:** Use for redundancy and cascading (daisy chain)
        - 1x Gigabit Ethernet (10/100/1000 Mbps)
        - 1x (10/100 Mbps)
    - **Serial ports:**
        - Digital Sensor port 1: dual function - sensor or serial connectivity. Use this port to open a serial connection to the PDU from your laptop.
        - Digital Sensor port 2: sensor connectivity
            - Supports up to 10 physical sensors (optional sensors such as: door open/close, fluid spot leak detector, humidity, temperature available thru Enlogic vendor)
- **Daisy chain port**:
    - 1x Gigabit Ethernet (10/100/1000 Mbps) port on PDU1 to 1x (10/100 Mbps) port on PDU2.
    - Use ports to daisy chain two PDUs together. This setup enables multiple PDUs to connect over one Ethernet port. In daisy chain mode, up to 64 PDUs can be connected via one (1) IP address. This allows user to gather information and data of all daisy chained PDUs from the master PDU.

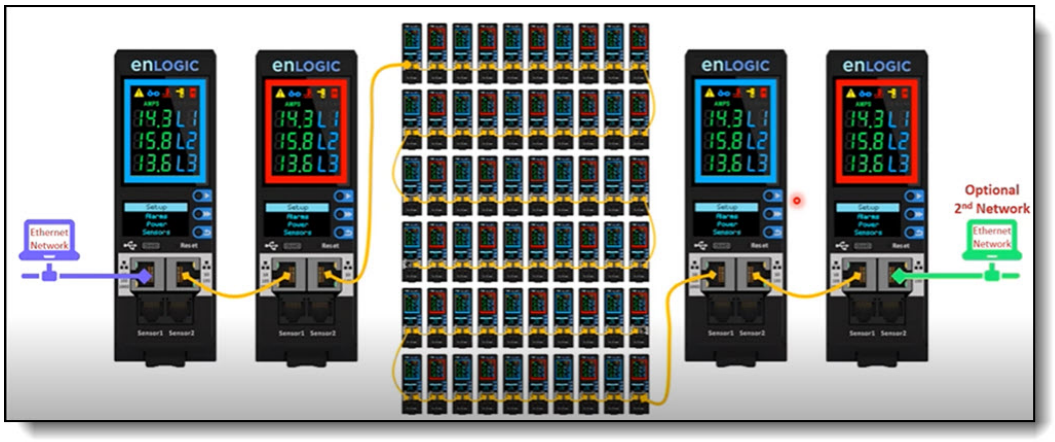


Figure 8. Daisy-chain PDU setup

RNA (Redundant Network Access) Functionality

- Enlogic RNA allows to secure the access of PDU data and statistics on two separate private networks.
- RNA is used with a redundant power delivery design including two rack PDUs for each IT rack. PDUs are used in RNA applications that must be of the same SKU.

  The following is a sample of RNA connectivity

Figure 9. RNA setup with LAN

Browser interface

The PDU provides a graphical user interface that you can view from a web browser. Using a web browser, you can access and monitor the PDU power outlets and output devices remotely from a computer.

The following tasks can be performed though browser interface:

- Controls individual outlets (On/Off)
- Displays PDU current, watts, output power in VA, power factor, and frequency
- Displays outlet level voltage, power factor and cumulative KW hour output
- Sets outlet alarm thresholds
- Views temperature and humidity status where the PDU is located and set thresholds to trigger alarm notifications
- Views dry, humidity and temperature status
- Accesses a graphical historical view of PDU data for statistical trend analysis
- Views PDU Alarms
- Views Event/System Logs

Environment Probe

The optional PDU Environmental Temperature & Humidity sensor (part number 4XF7A93184) can be used to report local temperature and humidity values and make that information available to management tools. The EMP connects to the PDU via its NMC. The PDU Environmental Temperature & Humidity sensor is shown in the following figure.

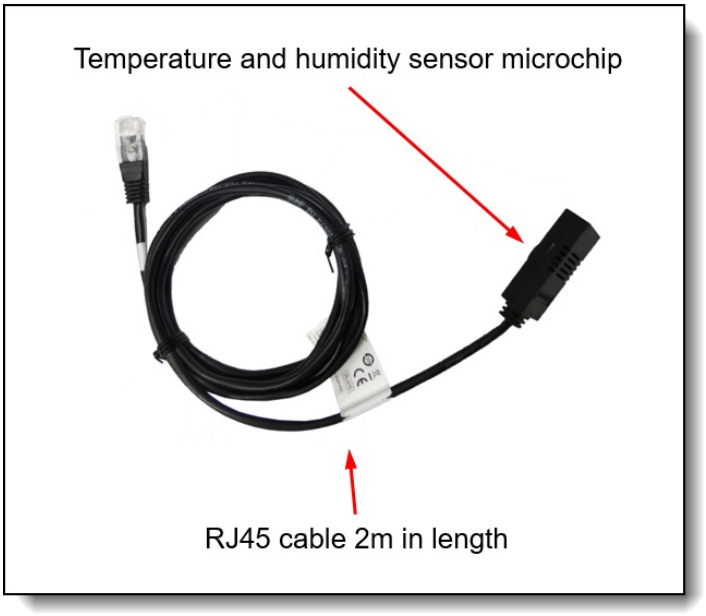


Figure 10. Environmental Temperature & Humidity sensor

The Environmental Temperature & Humidity sensor has the following features:

- Shipped with 2 Meter cable and integrated magnet for easy mounting
- Hot pluggable for easy integration
- Temperature Measuring Range 0 to 65 °C
- Temperature Measuring Accuracy +/- 2 %
- Humidity Measuring Range 10-90% RH, Non-Condensing
- Humidity Measuring Accuracy +/- 5 %
- Can be extended with a standard Ethernet cable

Additional information. Using an Ethernet cable to extend the EMP has the following requirements / limitations :

- Requires: a cross-over Ethernet cable
- Supported cables: CAT 5E or CAT 6E 4Core cable
- Maximum length of the Ethernet cable that can be used: 30 m (98 ft)

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). A useful tool to leverage to help calculate overall power usage is the Lenovo Capacity Planner (LCP) https://datacentersupport.lenovo.com/us/en/solutions/lnvo-lcp.

Likewise, to avoid over sizing 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 consider the switched and monitored PDUs described here. If not, consider the Basic PDUs described above as well.
- Do you require environmental monitoring capabilities? If so, then consider the switched and monitored PDUs described here. If not, consider the Basic PDUs described above as well.
- 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, reference tables above and/or vendor's nVent (CIS) site.

Supported rack cabinets

The 0U Switched and Monitored PDUs can be installed in the following racks:

- S2 42U Standard Rack cabinet (Types 9307)
- 42U 1200mm Deep Dynamic Rack (Type 9360)
- 42U 1200mm Deep Static Rack (Type 9361)
- 42U 1100mm Enterprise V2 Dynamic Rack (Type 9363)
- The 42U or 48U Heavy Duty Rack Cabinet (machine types 7D6D or 7D6E) are supported.

Enlogic PDUs are built with tool-less mounting in most rack enclosure designs.

These PDUs are 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 Switched and Monitored PDUs vertically in a rack.

- Using factory-installed buttons on the PDU to mount the PDU in keyhole openings in the rack frame

For additional information on racking the 0U basic or Switched and Monitored PDUs, refer to User’s Guide for the PDUs.

Warranty

The Lenovo zero-U (0U) Basic and Switched and Monitored power distribution units (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:

- CE, Demko Certified to IEC/EN60950-1
- ROHS, REACH

Related publications and links

For more information, see the following documents:

- nVent Lenovo product age:
  https://www.nvent.com/en-us/data-solutions/support/lenovo
- Enlogic user manual basic PDUs:
  https://enlogic.com/product/EB0337
- Enlogic user manual switched and monitored PDUs:
  https://enlogic.com/product/EN6381
- Lenovo Capacity Planner (LCP):
  https://datacentersupport.lenovo.com/us/en/solutions/lnvo-lcp

Related product families

Product families related to this document are the following:

- Power Distribution Units

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