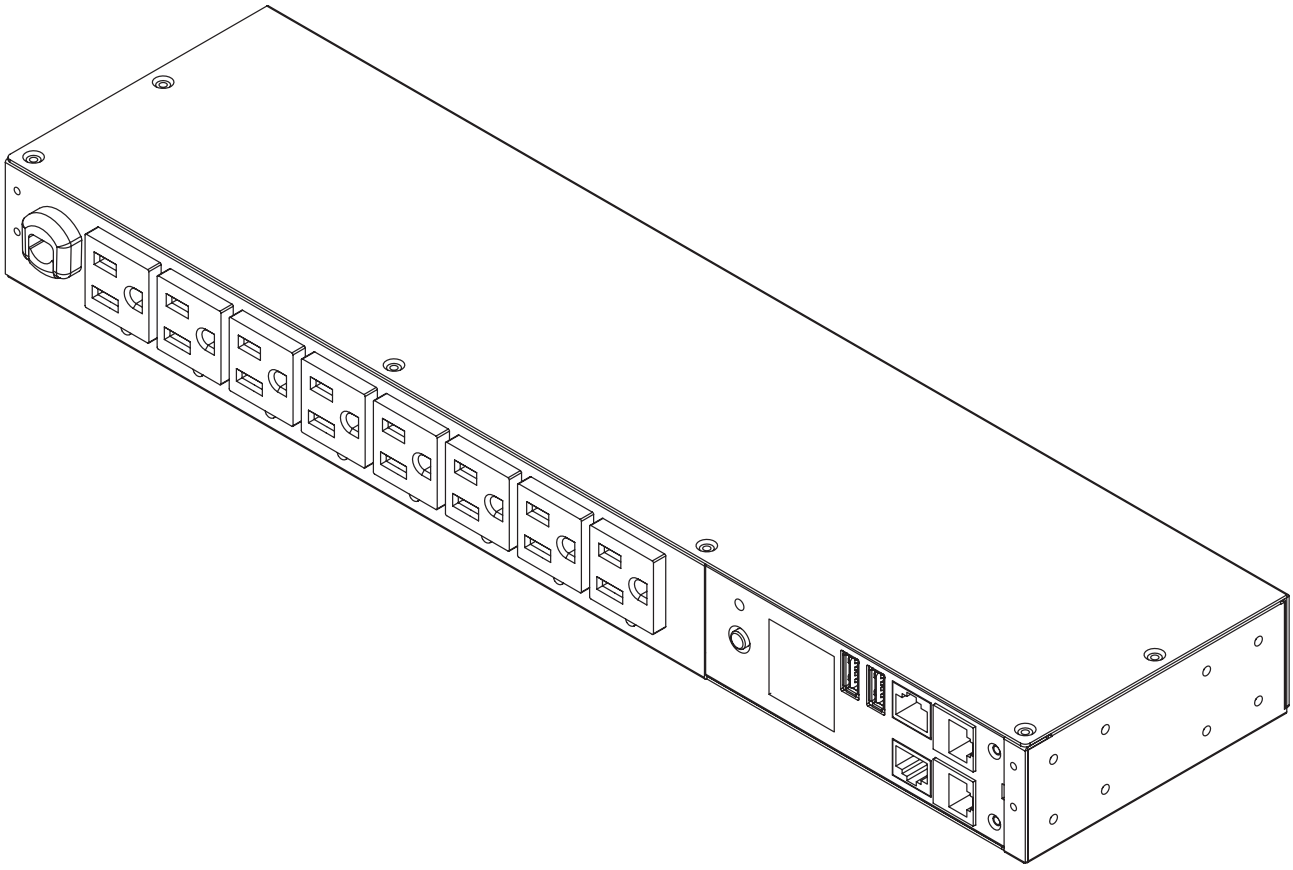
CyberPower®

YOUR ULTIMATE ALLY IN POWER

POWER DISTRIBUTION UNITS

1U / 2U
SWITCHED / METERED / MONITORED SERIES

USER MANUAL



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4241 12th Avenue East, Suite 400 | Shakopee, MN 55379
CyberPowerSystems.com

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MODEL LIST

Switched Metered by Outlet Series

1U	2U	
PDU81001G	PDU81003G	PDU81308G
PDU81002G	PDU81007G	PDU81309G
PDU81004G	PDU81008G	PDU81310G
PDU81005G	PDU81009G	
PDU81006G	PDU81010G	
PDU81306G	PDU81307G	

Metered by Outlet Series

1U	2U	
PDU71001G	PDU71003G	PDU71308G
PDU71002G	PDU71007G	PDU71309G
PDU71004G	PDU71008G	PDU71310G
PDU71005G	PDU71009G	
PDU71006G	PDU71010G	
PDU71306G	PDU71307G	

Switched Series

1U	2U	
PDU41001G	PDU41003G	PDU41308G
PDU41002G	PDU41007G	PDU41309G
PDU41004G	PDU41008G	PDU41310G
PDU41005G	PDU41009G	
PDU41006G	PDU41010G	
PDU41306G	PDU41307G	

Monitored Series

1U	2U	
PDU31001G	PDU31003G	PDU31308G
PDU31002G	PDU31007G	PDU31309G
PDU31004G	PDU31008G	PDU31310G
PDU31005G	PDU31009G	
PDU31006G	PDU31010G	
PDU31306G	PDU31307G	

SAFETY PRECAUTIONS

Read the following before installing or operating the Power Distribution Units (PDU):

- Use only the supplied hardware to attach the mounting brackets.
- The PDU must be plugged into a three-wire, grounded outlet on a circuit that is protected by a fuse or circuit breaker.
  For 15A PDU series, please use a 15A circuit protector.
  For 20A PDU series, please use a 20A circuit protector.
  For 30A PDU series, please use a 30A circuit protector.
  Connection to any other type of power outlet may result in a shock hazard.
- Do not use extension cords or adapters with this PDU.
- Never install a PDU or associated wiring or equipment during a lightning storm.
- Ensure that the power cord, plug, and socket are in good condition.

 **WARNING!**	**To prevent the risk of fire or electrocution, this PDU should be installed in a temperature and humidity controlled indoor area free of conductive contaminants. Do not install this PDU where excessive moisture or heat is present.**

PRÉCAUTIONS DE SÉCURITÉ

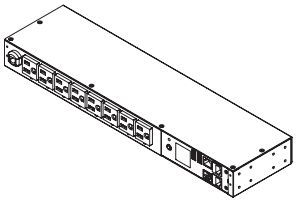
Lisez ce qui suit avant d'installer ou d'utiliser les unités de distribution de l'alimentation (PDU):

- Utilisez uniquement le matériel fourni pour fixer les supports de montage.
- Le PDU doit être branché sur une prise à trois fils mise à la terre sur un circuit protégé par un fusible ou un disjoncteur.
  Pour la série PDU 15A, veuillez utiliser disjondteur de 15A.
  Pour la série PDU 20A, veuillez utiliser un disjoncteur de 20A.
  Pour la série PDU 30A, veuillez utiliser un disjoncteur de 30A. La connexion à tout autre type de prise de courant peut provoquer un choc électrique.
- N'utilisez pas de rallonges ni d'adaptateurs avec ce PDU.
- N'installez jamais un PDU ni le câblage ou l'équipement associé pendant un orage.
- Assurez-vous que le cordon d'alimentation, la fiche et la prise sont en bon état.
- Pour le PDU avec les cordons d'alimentation d'entrée connectés, la prise doit être installée à proximité de l'équipement et doit être facilement accessible.
- Assurez-vous de débrancher les cordons d'alimentation et toutes les sources d'alimentation avant de tenter de réparer ou de retirer cette unité.
- Pour le dispositif de protection contre les surintensités des équipements, veuillez noter que tous les PDU avec un courant d'entrée supérieur à 20A sont équipés de deux disjoncteurs de dérivation à montage encastré.

INTRODUCTION

Package Contents, 1U Models

1. PDU
2. 2 x short and 2 x long Mounting Brackets
3. 12 x Bracket Mounting Screws (Flat Head M4 x 8)
4. 6 x Rack Mounting Screws and Washers (M5 x 12)
5. Cord Retention Tray
6. 6 x Cord Retention Tray Mounting Screws (M3 x 6)
7. 12 x Cable Ties (NEMA outlet PDU) or
   27 x Cable Ties (IEC outlet PDU)
8. RJ45 / DB9 Serial Port Connection Cable
9. User's Manual, Warranty Registration Card,
   Software Download Card (not pictured)



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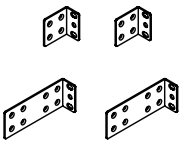

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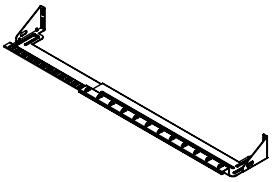

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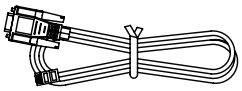

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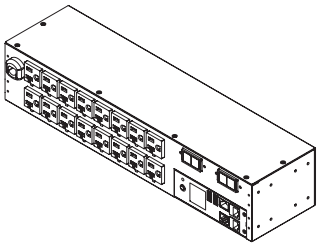
Package Contents, 2U Models

1. PDU
2. 2 x Mounting Brackets
3. 12 x Bracket Mounting Screws (Flat Head M4 x 8)
4. 6 x Rack Mounting Screws and Washers (M5 x 12)
5. 2 x Cord Retention Trays
6. 12 x Cord Retention Tray Mounting Screws (M3 x 6)
7. 24 x Cable Ties (NEMA outlet PDU) or
   30 x Cable Ties (10 IEC outlet PDU) or
   48 x Cable Ties (16 IEC outlet PDU)
8. RJ45 / DB9 Serial Port Connection Cable
9. User's Manual, Warranty Registration Card,
   Software Download Card (not pictured)



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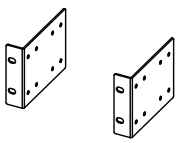

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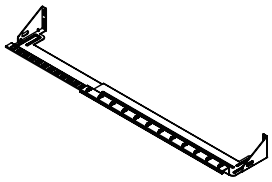

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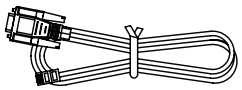

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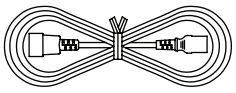
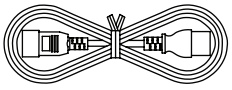
INTRODUCTION

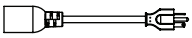
The items below are only included with certain models



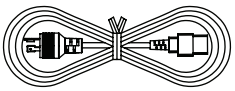
Power Cord 10-ft
IEC 320 C13/14
PDU81004G / PDU71004G / PDU41004G / PDU31004G)



Power Cord 10-ft
IEC 320 C19/20
PDU81005G / PDU71005G / PDU41005G / PDU31005G



Adapter
NEMA L5-20R to 5-20P
PDU81002G / PDU71002G / PDU31002G



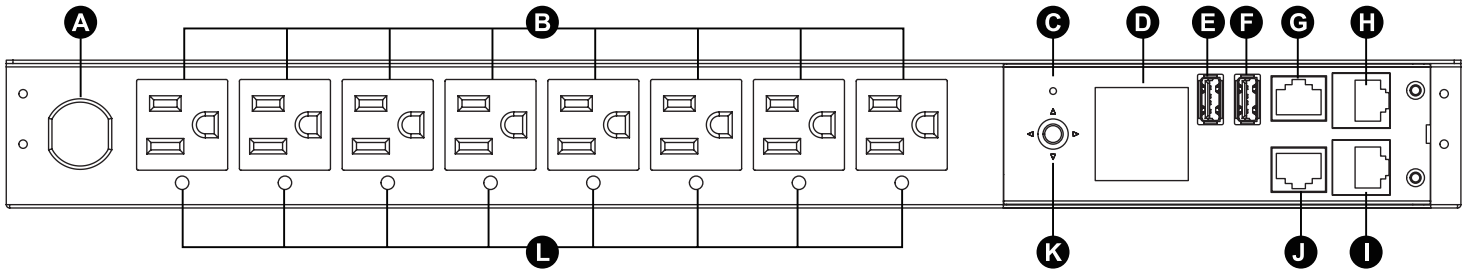
Power Cord 10-ft
IEC 320 C19 to NEMA L6-20P
PDU81006G / PDU71006G / PDU41006G / PDU31006G

CHECK!	**Before using, please check to ensure the package contains all the items shown above.** **If there are missing parts, please contact your local CyberPower technical support team for assistance.**

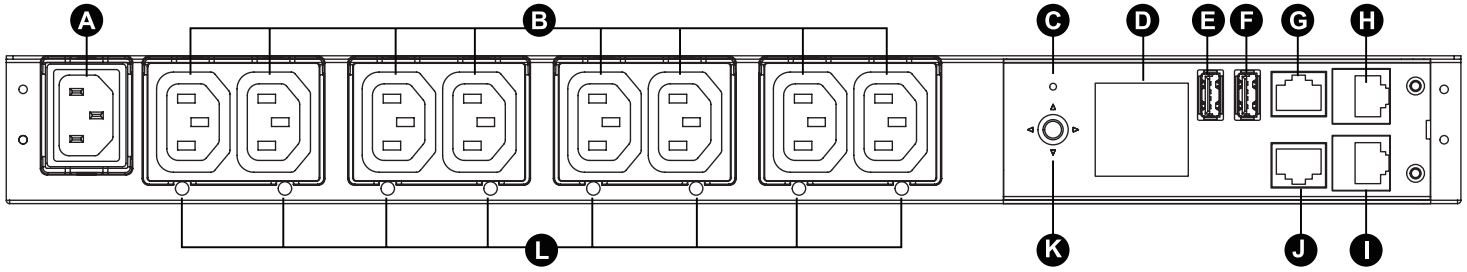
PRODUCT FEATURES - 1U 15A MODELS

Front Panel Description

NEMA Type



IEC Type



A. AC Inlet/ AC Power Cord - Used to connect PDU to utility power or UPS.

B. AC Output Receptacles - Provides power for connected equipment.

C. Reset Button - Used to reset the PDU to default settings.

D. Multifunction LCD Readout - Displays various PDU information such as power and load condition.

E. USB Port (USB 1) - Used to upgrade the firmware via a flash drive.

F. USB Port (USB 2) - Saved for future expansion.

G. ENV Port (RJ45 modular port) – Used for connecting with environmental sensor.

H. Ethernet Port (ETH 1) – Used to connect PDU to the network or daisy-chain to another PDU.

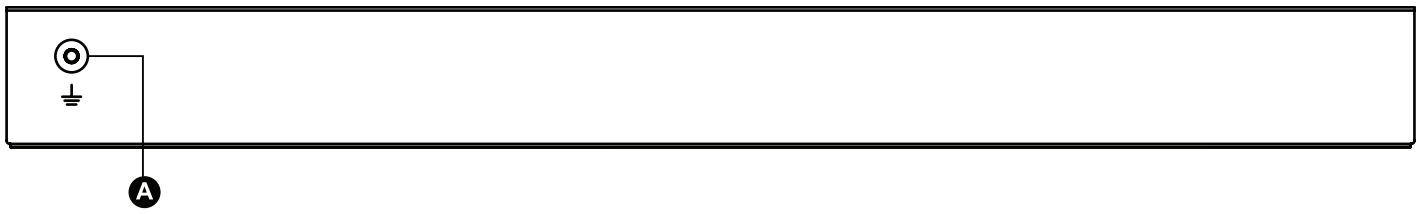
I. Ethernet Port (ETH 2) – Used to connect PDU to the network or daisy-chain to another PDU.

J. Serial/Link Port (RJ45 modular port) - Used to connect to a PC and control the PDU locally or chain to another PDU for power sharing.

K. Multi-function Button - Used to choose selected items and toggle through available information options.

L. Outlet Indicator (switched series only) – Indicates if the outlet is providing power to connected equipment.

Rear Panel Description



A. Ground Stud - Used to ground the PDU

TECHNICAL SPECIFICATIONS - 1U 15A MODELS

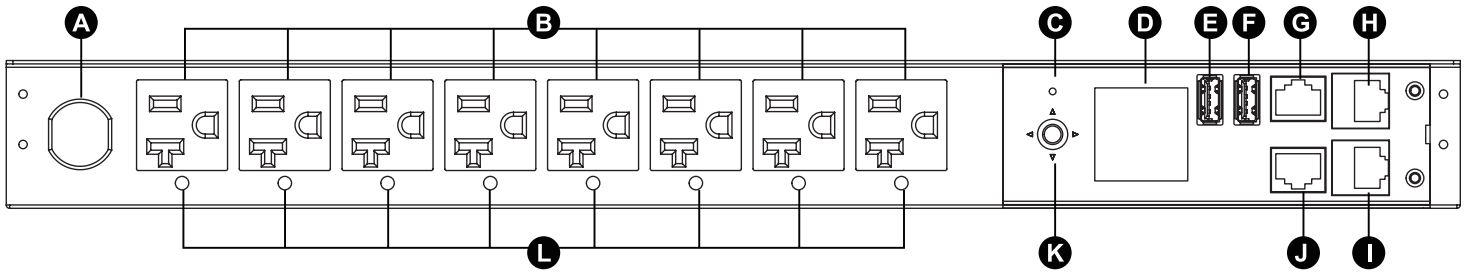
Model Name	PDU81001G PDU71001G PDU41001G PDU31001G	PDU81004G PDU71004G PDU41004G PDU31004G
Input		
Nominal Voltage	100 - 120 V	100 - 240 V
Frequency	50 / 60Hz	
Maximum Input Current	12A UL (Derated)	10 A CE / 12A UL (Derated)
Plug Type	NEMA 5-15P	IEC 320 C14
Power Cord Type	SR (14 AWG)	Socket
Power Cord Length	12 ft / 3.65 m	10 ft / 3.05 m
Output		
Nominal Voltage	100 - 120 V	100 - 240 V
Maximum Output Current	12A UL (Derated)	10 A CE / 12A UL (Derated)
Outlet Type	NEMA 5-15R	IEC 320 C13
Outlet Number	8	
Management and Communications		
Multifunction LCD Readout	Voltage, Frequency, Load, Current, HW/FW Version, Network Information	
Software	PowerPanel® Business Edition	
Networking	Yes	
Serial Port	RJ45	
Sensor Capable	Optional	
Physical		
Dimensions (Height x Width x Depth)	1.75 x 17.05 x 4.41 in. / 44 x 433 x 112 mm	
Environmental		
Humidity	0 to 95% Non-condensing	
Altitude	11,480 ft / 3,500 m	
Temperature	32°F to 140° F / 0° C to 60° C	
Safety Approvals		
Certifications	UL 62368-1 / FCC Class A	UL 62368-1 / CE / FCC Class A

All specifications are subject to change without notice.

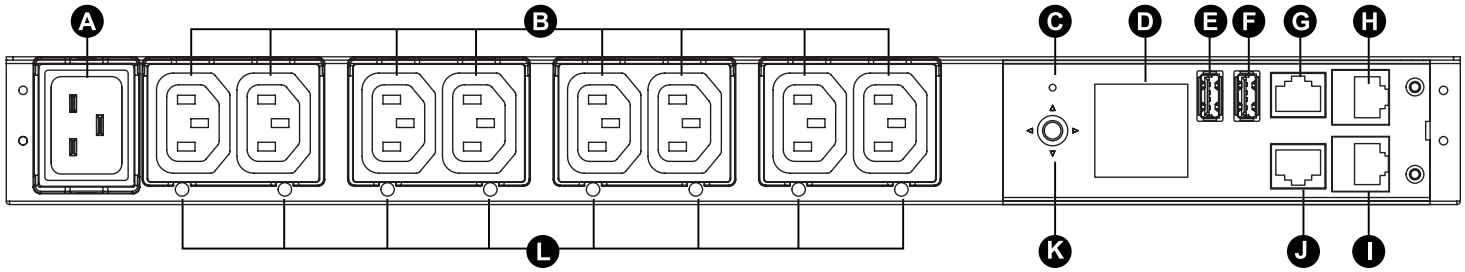
PRODUCT FEATURES - 1U 20A MODELS

Front Panel Description

NEMA Type



IEC Type



A. AC Inlet/ AC Power Cord - Used to connect PDU to utility power or UPS.

B. AC Output Receptacles - Provides power for connected equipment.

C. Reset Button - Used to reset the PDU to default settings.

D. Multifunction LCD Readout - Displays various PDU information such as power and load condition.

E. USB Port (USB 1) - Used to upgrade the firmware via a flash drive.

F. USB Port (USB 2) - Saved for future expansion.

G. ENV Port (RJ45 modular port) – Used for connecting with environmental sensor.

H. Ethernet Port (ETH 1) – Used to connect PDU to the network or daisy-chain to another PDU.

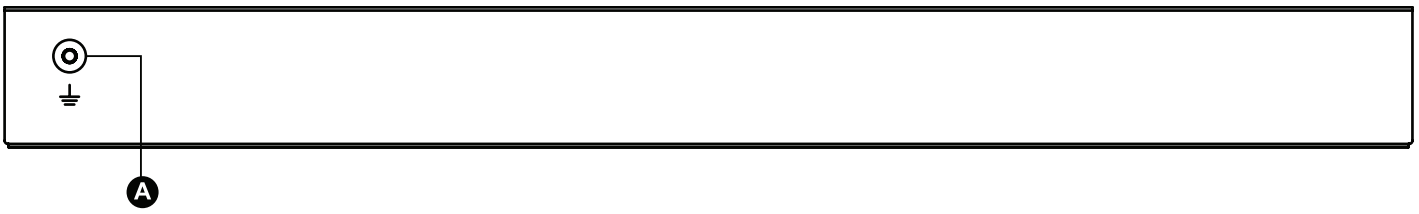
I. Ethernet Port (ETH 2) – Used to connect PDU to the network or daisy-chain to another PDU.

J. Serial/Link Port (RJ45 modular port) - Used to connect to a PC and control the PDU locally or chain to another PDU for power sharing.

K. Multi-function Button - Used to choose selected items and toggle through available information options.

L. Outlet Indicator (switched series only) – Indicates if the outlet is providing power to connected equipment.

Rear Panel Description



A. Ground Stud - Used to ground the PDU

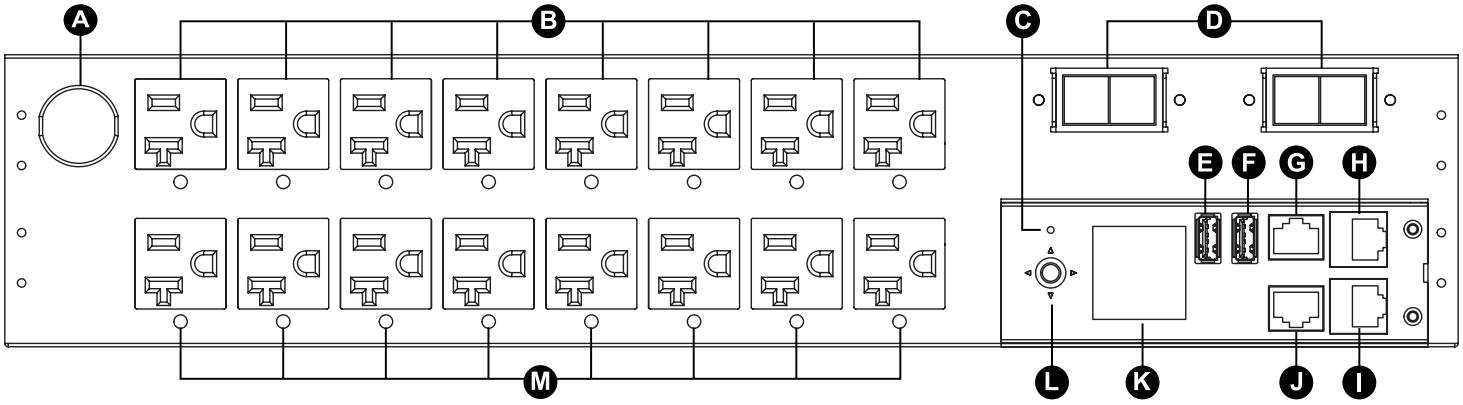
TECHNICAL SPECIFICATIONS - 1U 20A MODELS

Model Name	PDU81002G PDU71002G PDU41002G PDU31002G	PDU81005G PDU71005G PDU41005G PDU31005G	PDU81006G PDU71006G PDU41006G PDU31006G	PDU81306G PDU71306G PDU41306G PDU31306G
Input				
Nominal Voltage	100 - 120 V	100 - 240 V	200 - 240 V	
Frequency	50 / 60Hz			
Maximum Input Current	16A CE, UL (Derated)			
Plug Type	NEMA L5-20P (Adapter)	IEC 320 C20	NEMA L6-20P	IEC 309 16A
Power Cord Type	SR (12 AWG)	Socket		
Power Cord Length	12 ft / 3.65 m	10 ft / 3.05 m	12 ft / 3.65 m	
Output				
Nominal Voltage	100 - 120 V	100 - 240 V	200 - 240 V	
Maximum Output Current	16A CE, UL (Derated)			
Outlet Type	NEMA 5-20R	IEC C13		
Outlet Number	8			
Management and Communications				
Multifunction LCD Readout	Voltage, Frequency, Load, Current, HW/FW Version, Network Information			
Software	PowerPanel® Business Edition			
Networking	Yes			
Serial Port	RJ45			
Sensor Capable	Optional			
Physical				
Dimensions (Height x Width x Depth)	1.75 in. x 17.05 in. x 4.41 in / 44 mm x 433 mm x 112 mm			
Environmental				
Humidity	0 to 95% Non-condensing			
Altitude	11,480 ft / 3,500 m			
Temperature	32°F to 140° F / 0° C to 60° C			32°F to 131° F 0° C to 55° C
Safety Approvals				
Certifications	UL 62368-1 FCC Class A	UL 62368-1 / CE FCC Class A	UL 62368-1 FCC Class A	UL 62368-1 / CE FCC Class A

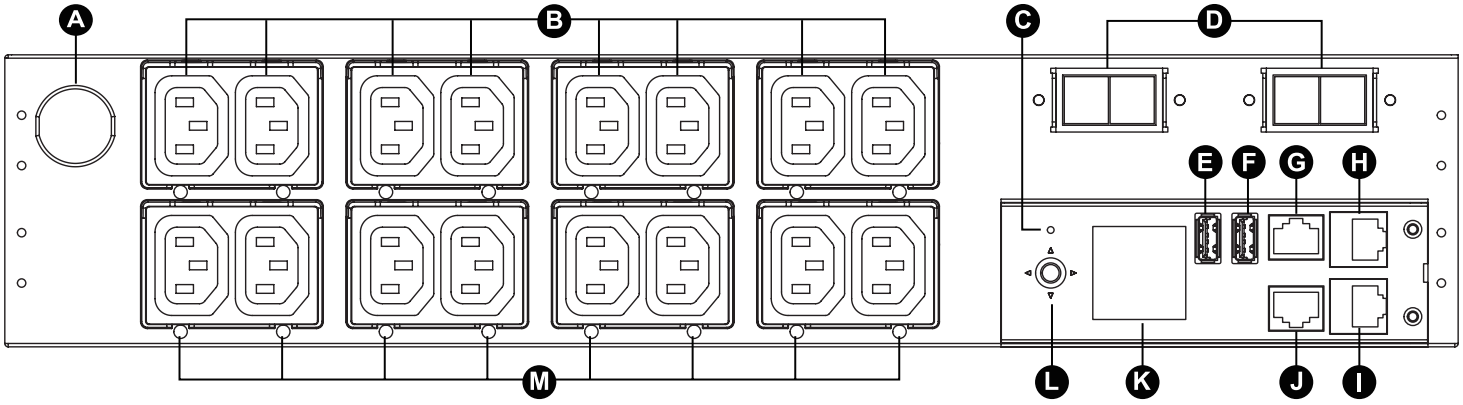
All specifications are subject to change without notice.

Front Panel Description

NEMA Type



IEC Type



A. AC Inlet/ AC Power Cord - Used to connect PDU to utility power or UPS.

B. AC Output Receptacles - Provides power for connected equipment.

C. Reset Button - Used to reset the PDU to default settings.

D. Circuit Breaker – Provides overload protection.

E. USB Port (USB 1) - Used to upgrade the firmware via a flash drive.

F. USB Port (USB 2) - Saved for future expansion.

G. ENV Port (RJ45 modular port) – Used for connecting with environmental sensor.

H. Ethernet Port (ETH 1) – Used to connect PDU to the network or daisy-chain to another PDU.

I. Ethernet Port (ETH 2) – Used to connect PDU to the network or daisy-chain to another PDU.

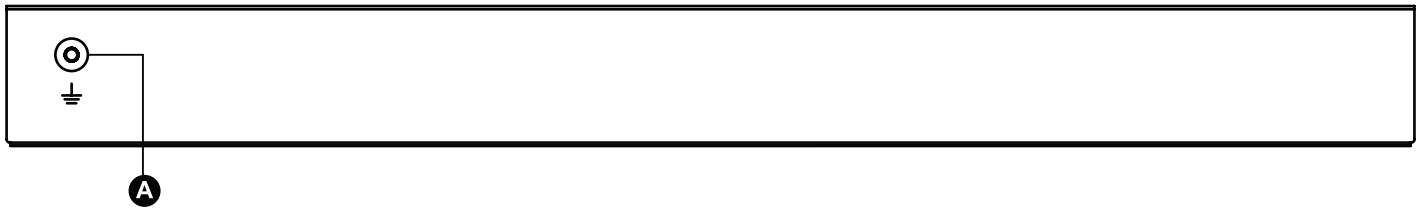
J. Serial/Link Port (RJ45 modular port) - Used to connect to a PC and control the PDU locally or chain to another PDU for power sharing.

K. Multifunction LCD Readout - Displays various PDU information such as power and load condition.

L. Multi-function Button - Used to choose selected items and toggle through available information options.

M. Outlet Indicator (switched series only) – Indicates if the outlet is providing power to connected equipment.

Rear Panel Description



A. Ground Stud - Used to ground the PDU

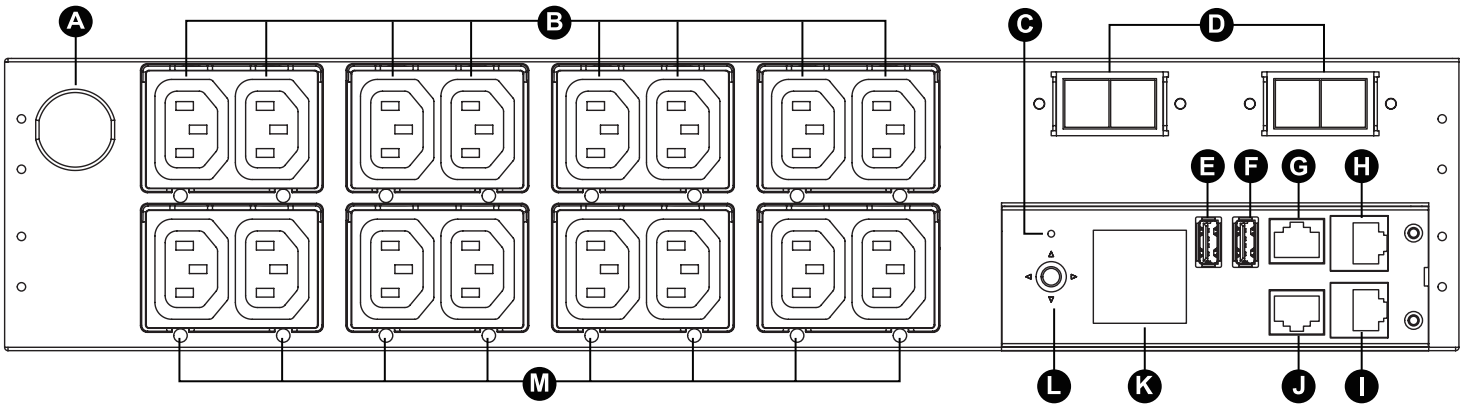
TECHNICAL SPECIFICATIONS - 2U 30A MODELS

Model Name	PDU81003G PDU71003G PDU41003G PDU31003G	PDU81007G PDU71007G PDU41007G PDU31007G	PDU81008G PDU71008G PDU41008G PDU31008G	PDU81009G PDU71009G PDU41009G PDU31009G	PDU81010G PDU71010G PDU41010G PDU31010G
Input					
Nominal Voltage	100 - 120 V	200 - 240 V			
Frequency	50 / 60Hz				
Maximum Input Current	24A UL (Derated)				
Plug Type	NEMA L5-30P	NEMA L6-30P			
Power Cord Type	SR (10 AWG)				
Power Cord Length	12 ft / 3.65 m				
Output					
Nominal Voltage	100 - 120 V	200 - 240 V			
Maximum Output Current	24A UL (Derated) / 20A Per Bank				
Bank Number	2				
Outlet Type	NEMA 5-20R	IEC C13	12 x IEC C13 4 x IEC C19	IEC C19	
Circuit Breaker	Yes				
Management and Communications					
Multifunction LCD Readout	Voltage, Frequency, Load, Current, HW/FW Version, Network Information				
Software	PowerPanel® Business Edition				
Networking	Yes				
Serial Port	RJ45				
Sensor Capable	Optional				
Physical					
Dimensions (Height x Width x Depth)	3.5 x 17.05 x 4.41 in. / 88 x 433 x 112 mm				
Environmental					
Humidity	0 to 95% Non-condensing				
Altitude	11,480 ft / 3,500 m				
Temperature	32°F to 140° F / 0° C to 60° C				
Safety Approvals					
Certifications	UL 62368-1 / FCC Class A				

All specifications are subject to change without notice.

Front Panel Description

IEC Type



A. AC Inlet/ AC Power Cord - Used to connect PDU to utility power or UPS.

B. AC Output Receptacles - Provides power for connected equipment.

C. Reset Button - Used to reset the PDU to default settings.

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I. Ethernet Port (ETH 2) – Used to connect PDU to the network or daisy-chain to another PDU.

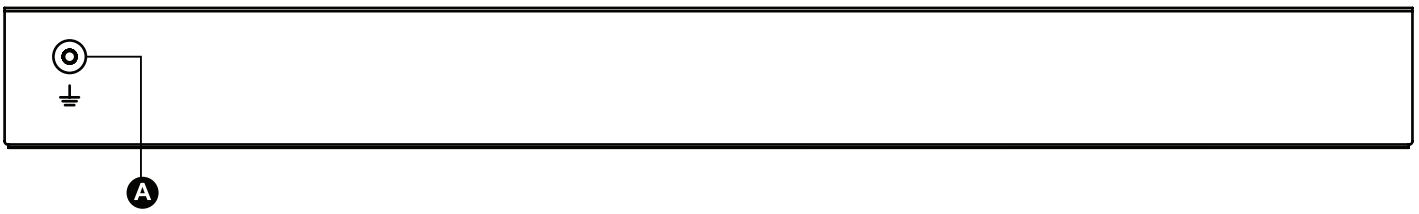
J. Serial/Link Port (RJ45 modular port) - Used to connect to a PC and control the PDU locally or chain to another PDU for power sharing.

K. Multifunction LCD Readout - Displays various PDU information such as power and load condition.

L. Multi-function Button - Used to choose selected items and toggle through available information options.

M. Outlet Indicator (switched series only) – Indicates if the outlet is providing power to connected equipment.

Rear Panel Description



A. Ground Stud - Used to ground the PDU

TECHNICAL SPECIFICATIONS - 2U 32A MODELS

Model Name	PDU81307G PDU71307G PDU41307G PDU31307G	PDU81308G PDU71308G PDU41308G PDU31308G	PDU81309G PDU71309G PDU41309G PDU31309G	PDU81310G PDU71310G PDU41310G PDU31310G
Input				
Nominal Voltage	200 - 240 V			
Frequency	50 / 60Hz			
Maximum Input Current	32A CE			
Plug Type	IEC-309 Blue 230V 32A			
Power Cord Type	SR (10 AWG)			
Power Cord Length	12 ft / 3.65 m			
Output				
Nominal Voltage	200 - 240 V			
Maximum Output Current	32A CE / 20A Per Bank			
Bank Number	2			
Outlet Type	16 x IEC C13	12 x IEC C13 4 x IEC C19	10 x IEC C19	8 x IEC C19
Circuit Breaker	Yes			
Management and Communications				
Multifunction LCD Readout	Voltage, Frequency, Load, Current, HW/FW Version, Network Information			
Software	PowerPanel® Business Edition			
Networking	Yes			
Serial Port	RJ45			
Sensor Capable	Optional			
Physical				
Dimensions (Height x Width x Depth)	3.5 x 17.05 x 4.41 in. / 88 x 433 x 112 mm			
Environmental				
Humidity	0 to 95% Non-condensing			
Altitude	11,480 ft / 3,500 m			
Temperature	32°F to 131° F / 0° C to 55° C			
Safety Approvals				
Certifications	UL 62368-1 / CE / FCC Class A			

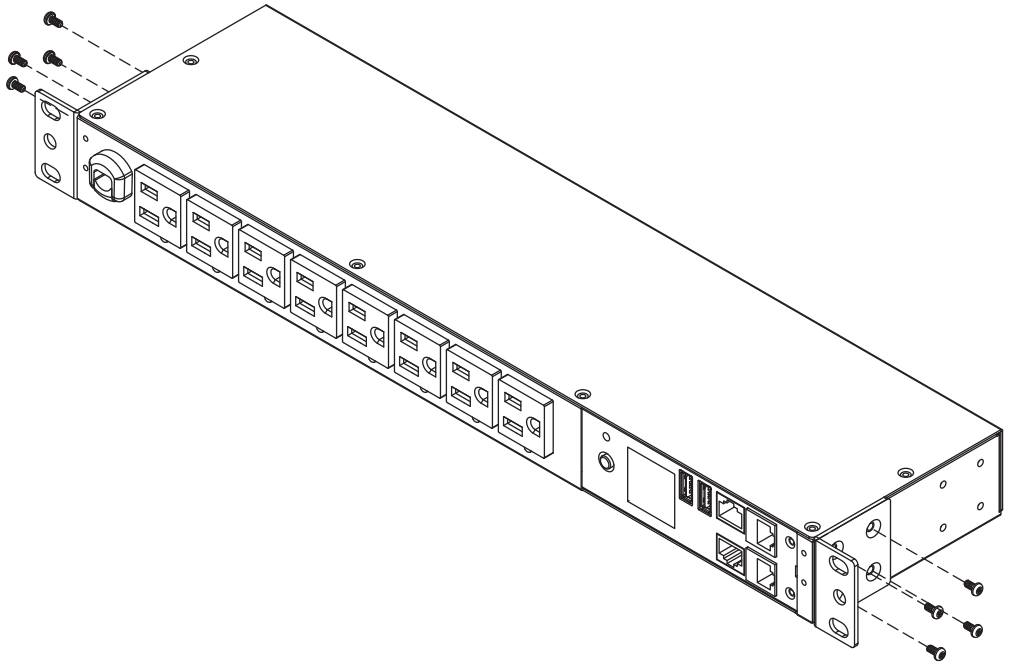
All specifications are subject to change without notice.

INSTALLATION GUIDE

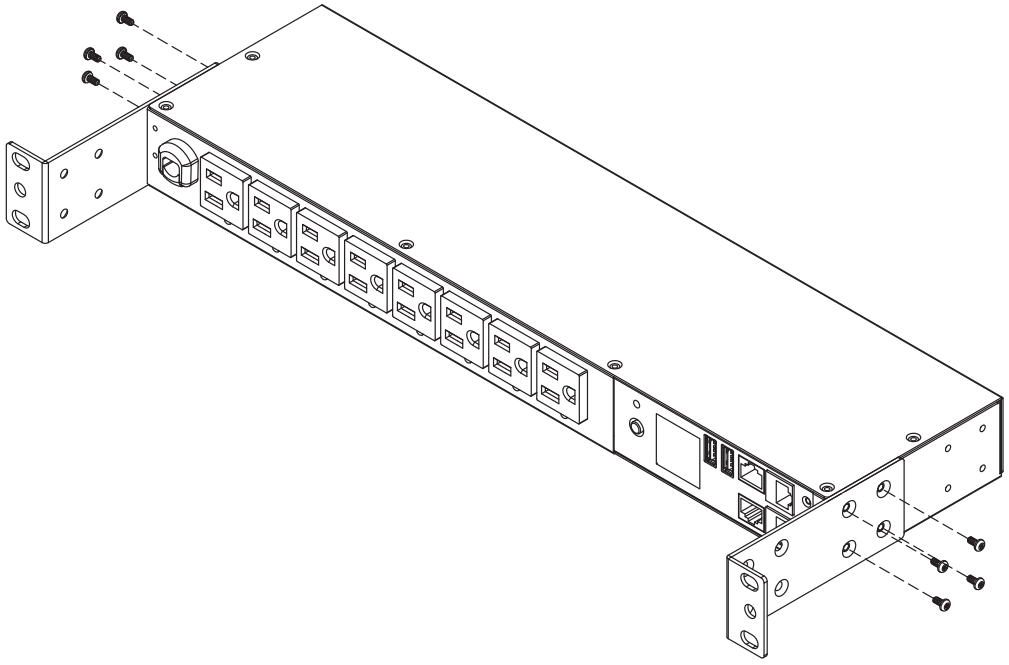
Horizontal Installation - 1U Models

CAUTION!	**CAUTION! Please use only the provided screws through the entire installation process.**

Step 1. Mounting Bracket Installation
Use the provided Mounting Bracket Screws (8) to attach the SHORT Mounting Brackets (2) to the PDU.

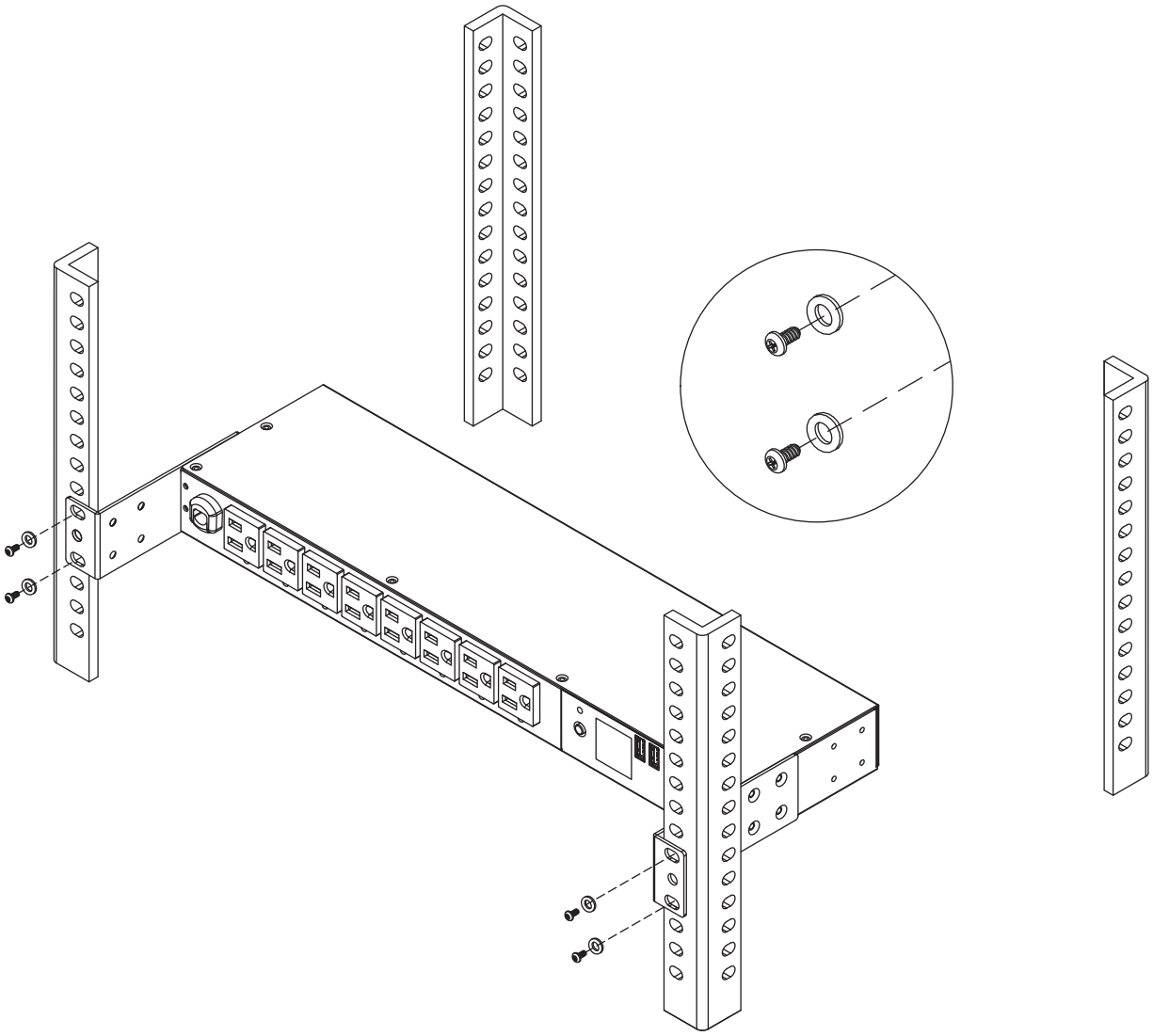


If you plan on attaching the Cord Retention Tray to the PDU, you will need to use the LONG Mounting Brackets (2).



Horizontal Installation - 1U Models

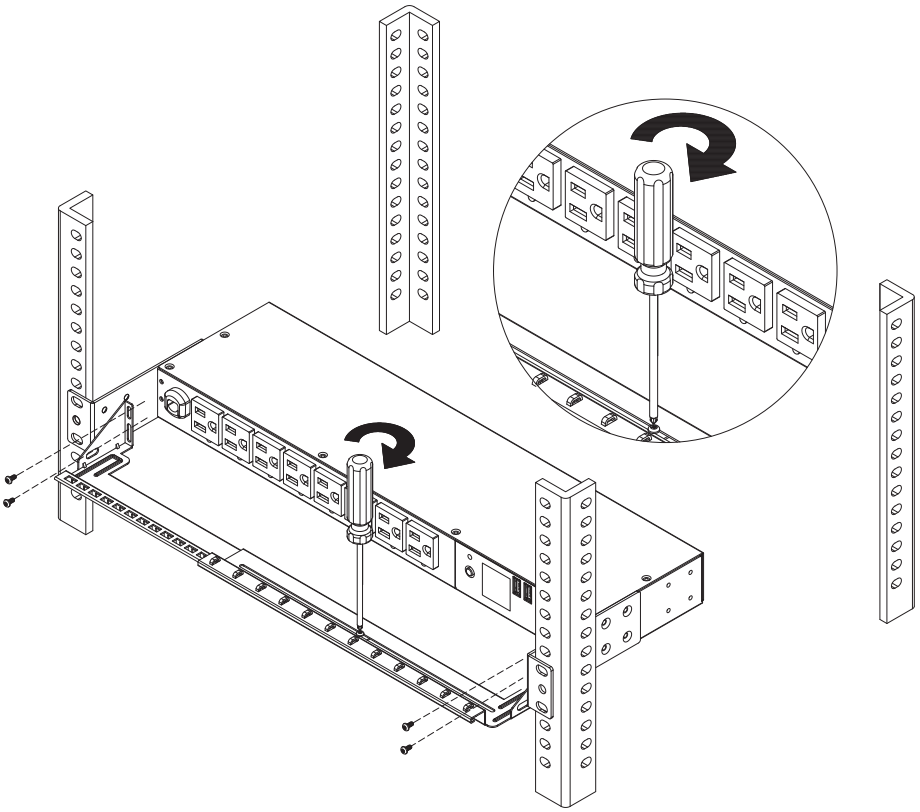
Step 2. PDU Mounting
Use the supplied Washers (4) and Screws (4) to secure the PDU to your existing rack system.
Note: You may also use the screw sets provided by the rack to secure the PDU.



Horizontal Installation - 1U Models

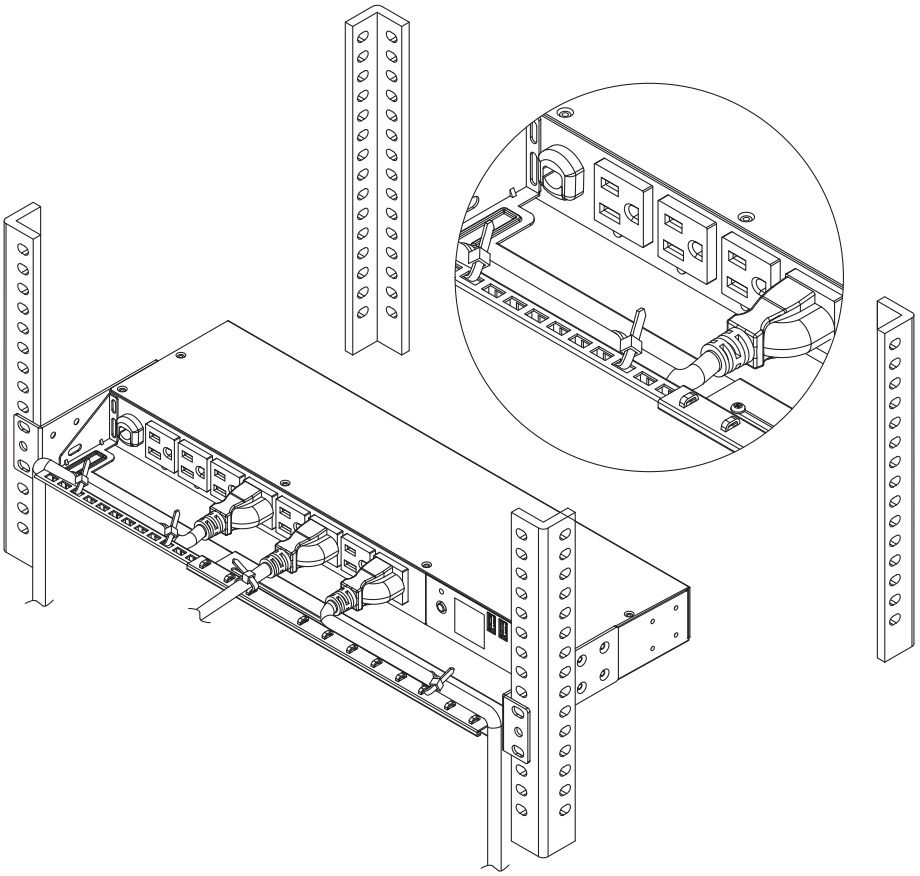
Step 3. Cord Retention Tray Installation (optional)

Adjust the length of the Cord Retention Tray until the screw hole on the tray and PDU are aligned. Attach the Cord Retention Tray to the PDU with the 4 supplied Cord Retention Tray Mounting Screws. Tighten the Cord Retention Tray with the screw on it.



Use the provided Cable Ties to fasten each cord to the Cord Retention Tray.

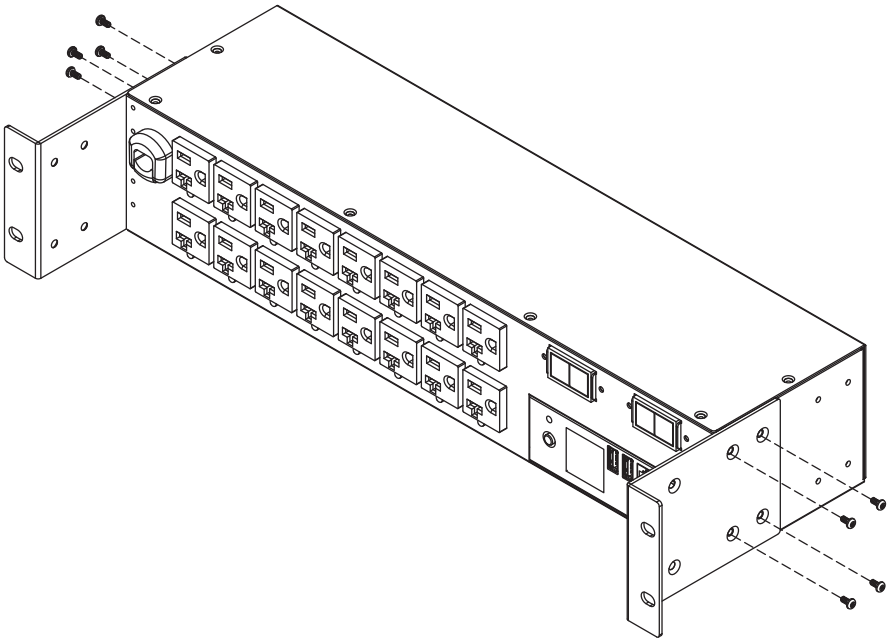
Note: If the PDUs are intended to install in a high temperature environment, please use the Power Cords that could sustain high temperature operation.



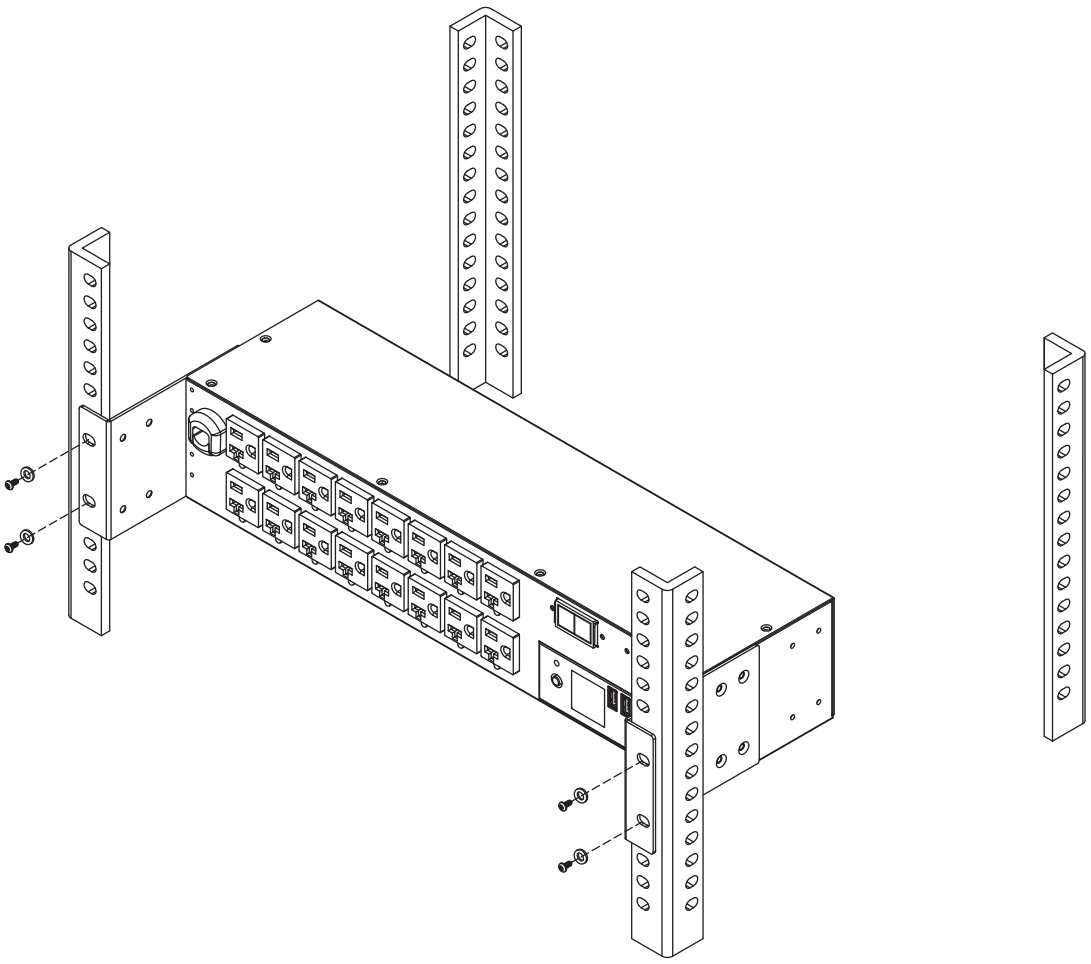
INSTALLATION GUIDE

Horizontal Installation - 2U Models

Step 1. Mounting Bracket Installation
Use the provided Mounting Bracket Screws (8) to attach the Mounting Brackets (2) to the PDU.



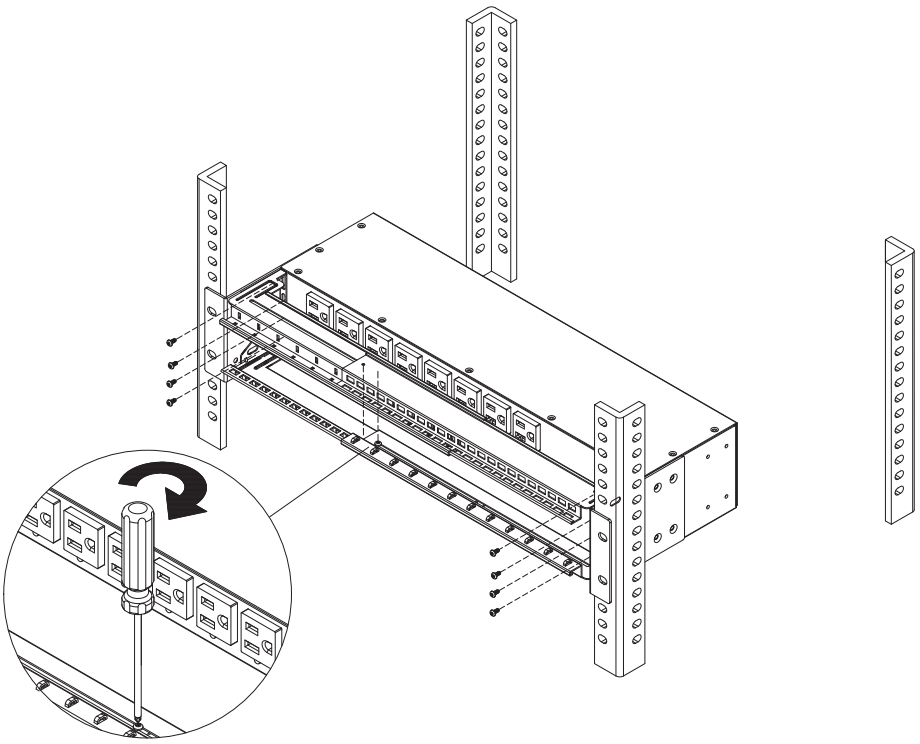
Step 2. PDU Mounting
Use the supplied Washers (4) and Screws (4) to secure the PDU to your existing rack system.
Note: You may also use the screw sets provided by the rack to secure the PDU.



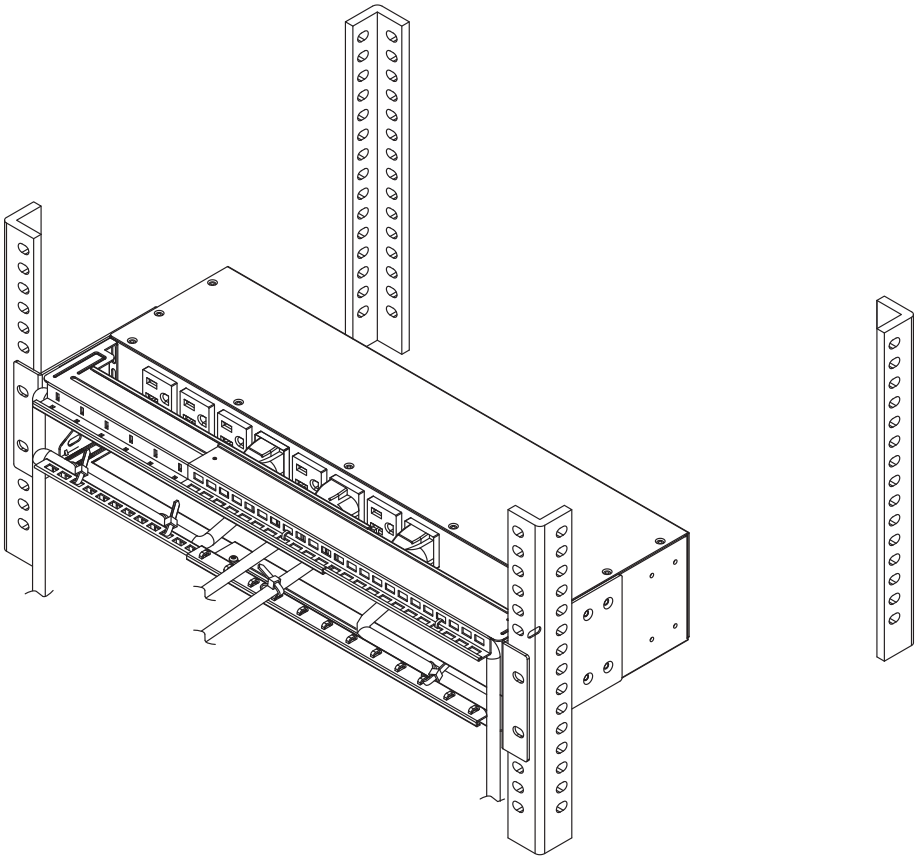
Horizontal Installation - 2U Models

Step 3. Cord Retention Tray Installation (optional)

Adjust the length of the Cord Retention Tray until the screw hole on the tray and PDU are aligned. Attach the Cord Retention Tray to the PDU with the 8 supplied Cord Retention Tray Mounting Screws. Tighten the Cord Retention Tray with the screw on it.



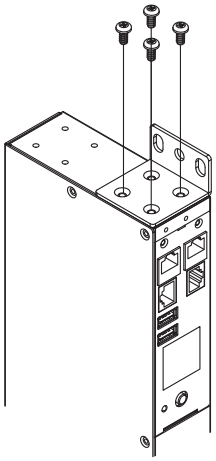
Use the provided Cable Ties to fasten each cord to the Cord Retention Tray.



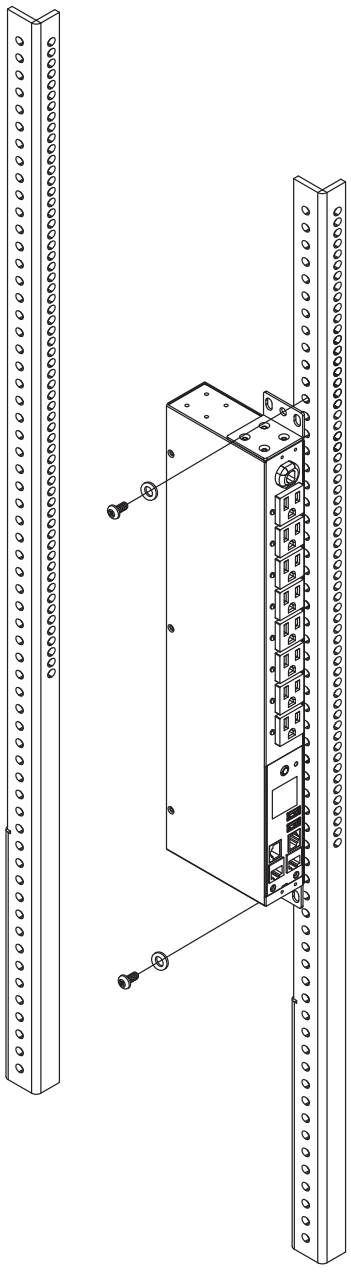
INSTALLATION GUIDE

Vertical Installation - 1U Models

Step 1. Mounting Bracket Installation
Use the provided Mounting Bracket Screws (8) to attach the SHORT Mounting Brackets (2) to the PDU.



Step 2. PDU Mounting
Use the supplied Washers (2) and Screws (2) to secure the PDU to your existing rack system.
Note: You may also use the screw sets provided by the rack to secure the PDU.

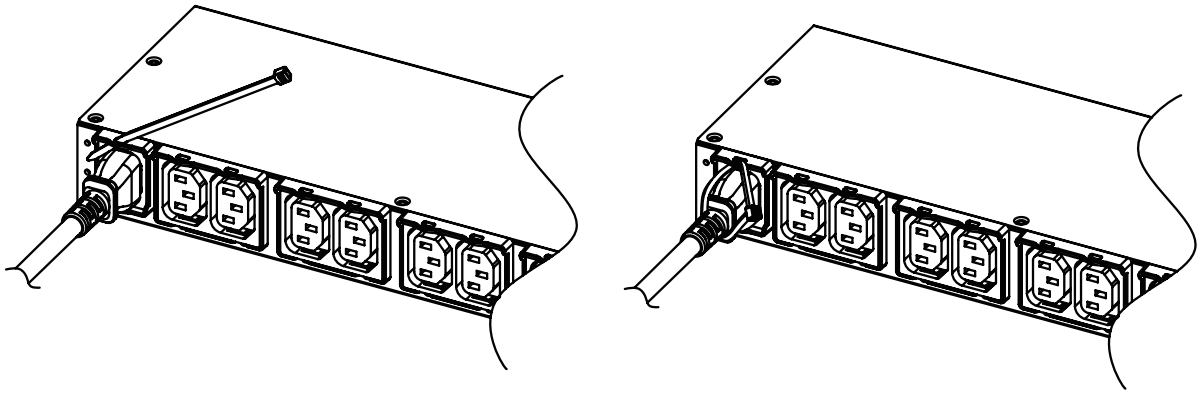


INSTALLATION GUIDE

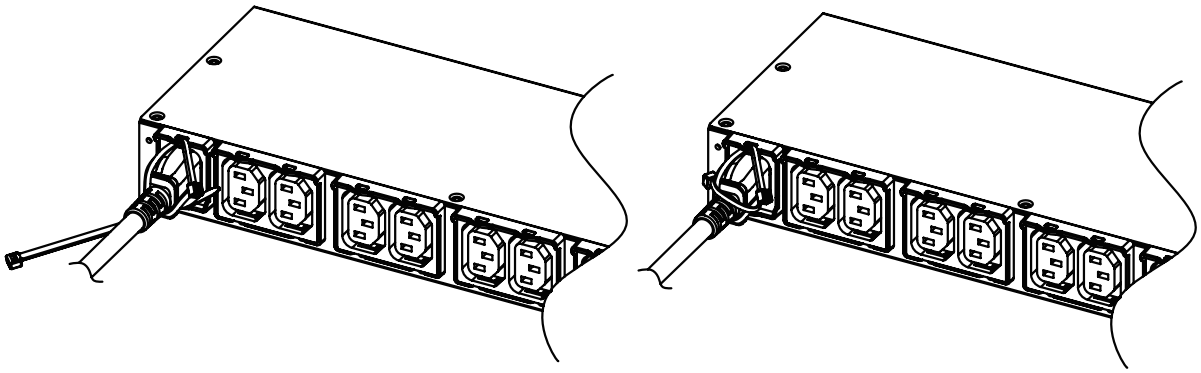
Locking Power Cord - For IEC Type PDU

Input Power Cord

Step 1. Align and insert the Cable Tie from the upper side of the Fixed Stand and fasten it as shown below.

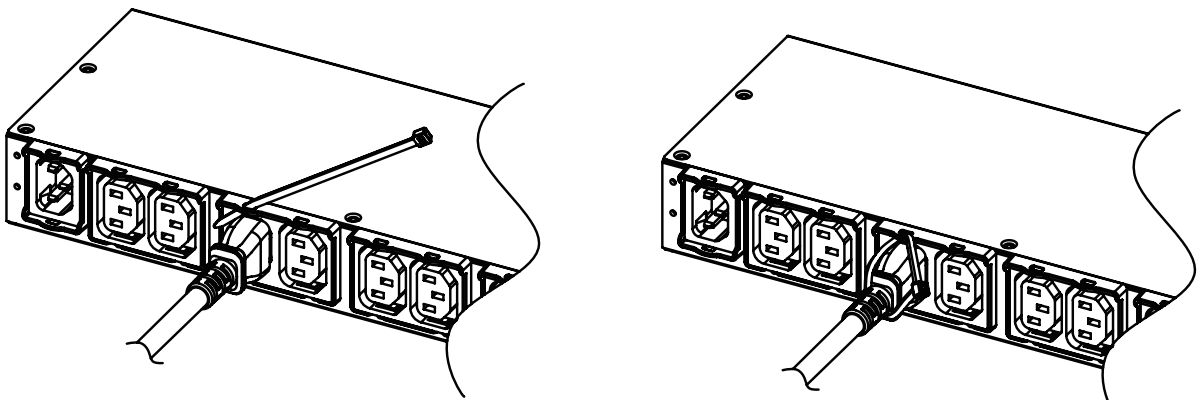


Step 2. Align and insert the Cable Tie from the bottom side of the Fixed Stand and fasten it as shown below.



Output Power Cord

Step 1. Align and insert the Cable Tie from the upper side of the Fixed Stand and fasten it as shown below.



INSTALLATION GUIDE

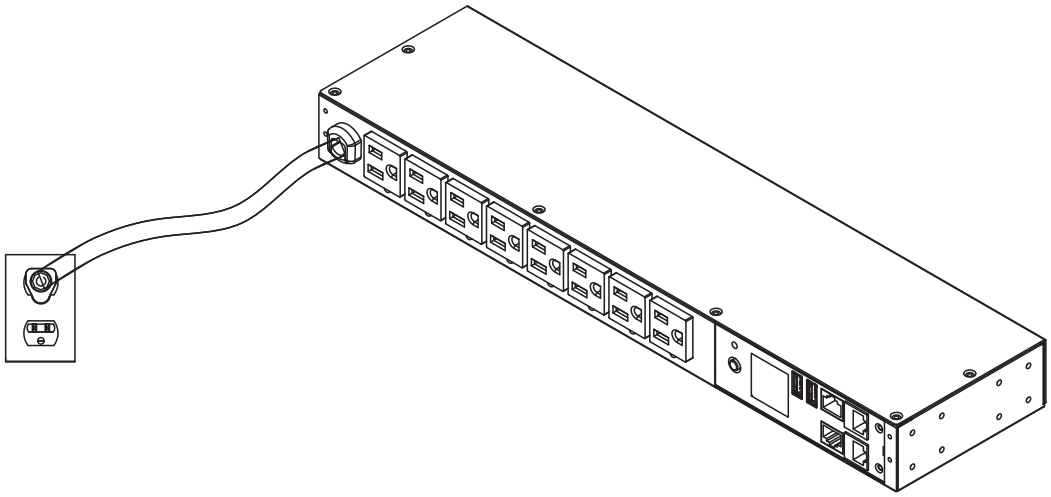
Electrical Installation

CAUTION!	**CAUTION! The PDU must be plugged into a three-wire, grounded wall receptacle only. The wall receptacle must also be connected to an appropriate branch circuit/main with fuse or circuit breaker protection. Connection to any other type of wall receptacle may result in a shock hazard.**

Step 1. Receptacle evaluation

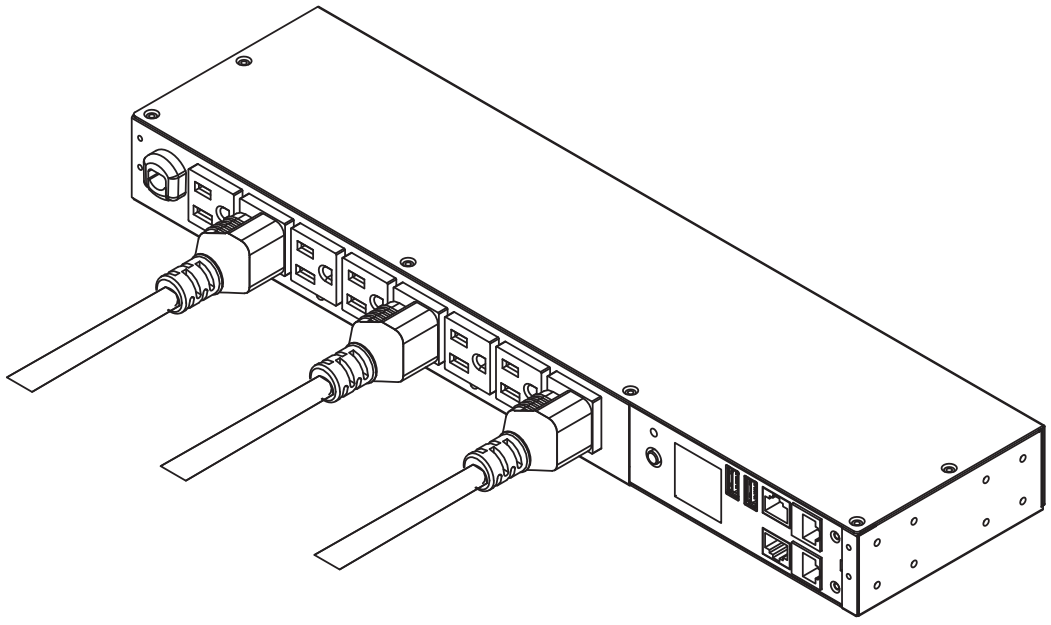
Ensure that the plug type of your PDU unit matches the wall receptacle type that you are using.

Step 2. Plug the PDU into a CyberPower UPS system (recommended) or the wall receptacle.



Step 3. Attach equipment

It is extremely important not to exceed the PDUs maximum current load (as outlined in the Specifications section).
In order to determine your total load, use the LCD screen on the front of the PDU to monitor the load being attached.



Network Installation

Step 1 – Network Connection

Using an Ethernet cable, attach one end to the Ethernet port on the front of the PDU, and the other end to a network port.

Step 2 – Establish the PDU IP address

Assigning an IP address to the CyberPower PDU requires the user to have an available IP address that is valid on the respective network. If an available IP address is unknown, contact the network administrator to obtain one.

DHCP is enabled by factory default. If the PDU does not receive an IP address from the network's DHCP server, it will default to 192.168.20.177.

There are multiple methods for setting up the IP address on the PDU. Please follow the instructions below for the method that is appropriate for your application. Please make sure the PDU is powered on during this process.

Option 1: Power Device Network Utility (recommended)

1. Download and install the Power Device Network Utility 2 software from www.cyberpower.com.
2. Run the Power Device Network Utility 2 and select the PDU device from the equipment list. Click "Connection" on the top tools list to start configuring the IP address.
3. Enter the user name and password of the PDU device at the Authentication menu.
4. Configure the IP Address, Subnet Mask, and Gateway Address to match your network settings.

Note: The default username is "**cyber**" and the default password is "**cyber**".

Option 2: DHCP Server

1. Ask your administrator if there is DHCP server on the LAN.
2. Make sure the DHCP is Enabled.
3. Make sure the network connection is ready and power on the PDU.
4. The PDU will obtain an IP address from the DHCP server automatically.

Option 3: Address Resolution Protocol (ARP) Command

1. Obtain the MAC address from the sticker on the PDU.
2. Open a command prompt as an administrator and type the following:

   "arp -s [available IP address] [MAC address of PDU]".

   Example: IP Address: arp-s 192.168.20.240
   MAC Address: 00-0c-15-80-00-01
3. Use the Ping command to assign a size of 123 bytes to the IP.

   Type in "ping 192.168.20.240 -l 123" then press **Enter**.

   If the replies are received, your computer can communicate with the IP address

Option 4: Hyper Terminal or Terminal Emulator

1. Use the included RJ45/DB9 serial port connection cable, attach one end to the serial port on the front of the PDU, and the other end to the PC/ server.
2. Open the Hyper Terminal software on your PC and select a name and icon for the connection.
3. Setup the COM port settings using the values indicated in Appendix A.
4. Press **Enter** to enter the Authentication menu.
5. Enter the user name and password of the PDU device at the Authentication menu.
6. Press **2** and **Enter** to access Network Settings to view the IP address.

Note: The default username is "**cyber**" and the default password is "**cyber**". For further information and configuration via Hyper Terminal, see Appendix A- Hyper Terminal.

OPERATION

Remote Management

The remote management function provides monitoring of the PDU operational information, controlling outlets and utilizing SNMP functionality.

Web

Remote management can be performed via web interface. To access the web interface, please follow the instructions below:

1. Enter the IP address of the PDU into a web browser.
2. Enter the user name and password of the PDU device at the authentication screen.

Note: The default username is "**cyber**" and the default password is "**cyber**".

For additional information about the features and functionality of CyberPower Management Console, please refer to the Intelligent PDU Web Interface User's Manual available for download from www.cyberpower.com.

Telnet and SSH

The CyberPower PDU provides Telnet and Secure Shell (SSH) as Remote Management methods. Telnet uses user name and password as basic security while SSH has a higher security level with encryption of the transmitted packets including user name, password, and data. Configure the Setting of Telnet and SSH on the Web Interface. The default user name and password is **cyber**; **cyber**.

SNMP

The CyberPower PDU supports SNMPv1 and SNMPv3 protocols. Download the CyberPower MIB file from www.cyberpower.com and add it to an SNMP-supported management software. Default read/write community is **public/private** for SNMPv1. SNMPv3 provides a higher security level than SNMPv1 by encrypting the transmitted packet. Configure the settings of the SNMPv1/SNMPv3 on Web Interface.

Local Management

LCD Operation

The LCD screen provides instant information, such as voltage, current and power, for the PDU. In addition, users can use the interface to configure each PDU parameters and control each outlet on the Switched PDU. The LCD detects the installation orientation of the PDU (horizontally or vertically), therefore automatically rotates the screen to best fit the reading direction.

A. Scroll Mode:

The PDU information will display in following order automatically when **Scroll Mode On** is configured.

Device Information
Bank 1 Information (2U Series)
Bank 2 Information (2U Series)
Alert

B. Main Menu Map

Meter	Device	
	Bank	
	Outlet	
Control	All	Immediate On
		Delay On
	Bank 1/2	Immediate Off
		Delay Off
	Outlet 1-N	Reboot
		Delay Reboot
Setting	LCD	Color
		Brightness
		Direction
		Screen Off
	Reboot/Reset	Reboot
		Except TCP
		To Default
About	Model Name	
	Serial Number	
	Network	
	Hardware Version	
	Firmware Version	
Alert	Current	
	Log	

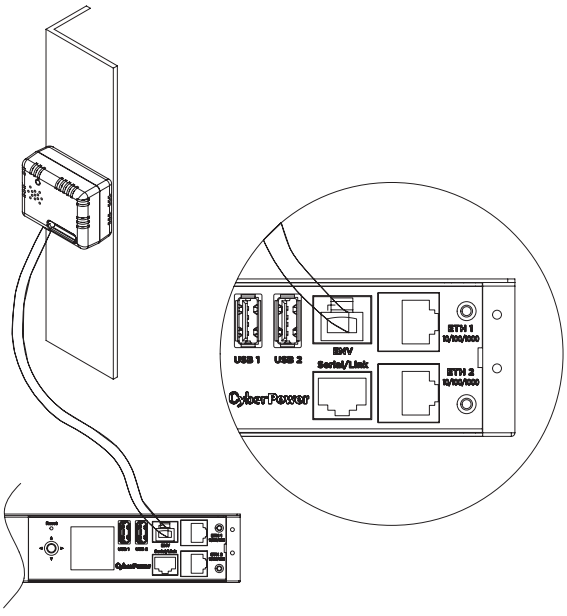
OPERATION

LED Indicators

Indicator	Status	Description
Tx/Rx	Off	The PDU power is off.
	On (Green)	The PDU power is on.
	Flashing	Receiving/transmitting data packet
		Reset Finished
LINK	On	Indicates the PDU is connected to the LAN
	Off	Indicates the PDU is not connected to the LAN
Outlet * for metered by outlet series only	On (Green)	The outlet is on and status is ok.
	Off	The outlet is off.
	Yellow *	Low load
	Orange *	Near overload
	Red *	Overload

Environmental Monitoring (optional)

CyberPower PDUs along with the environmental sensor provide temperature and humidity monitoring in a server closet and/or datacenter remotely. To connect the PDU with environmental sensor, use the RJ45 Ethernet Cable included with the environmental sensor. Plug one end into ENV port on the PDU and the other end into the RJ45 port on the environmental sensor (as shown in figure below). When the PDU correctly connects to the environmental sensor, users can see the temperature and humidity data via the Web Interface. For further information regarding environmental sensor configuration, please refer to the Intelligent PDU Web Interface User's Manual.



Device Reset

- To locally reset all the settings to default, use Reset function in the LCD screen.
- To remotely reset all the settings to default, log in to the Web interface, enter the Reset page and apply the function.

Unattended/Automatic Shutdown

PowerPanel® Business Remote software automatically initiates a graceful shutdown on the connected computer's operating system. PowerPanel must be installed on every computer or server for which the shutdown is to take place. The computer will receive a message from the PDU, and will perform the shutdown according to the instructions provided, including shut downs at exact times and dates.

Step 1. Computer Configuration

1. Install PowerPanel® Business Remote on every computer or server that will be part of the shutdown process (Follow the instructions in the PowerPanel® Business User Manual).
2. Configure the settings in PowerPanel® Business Remote. See the PowerPanel® Business User Manual for detailed instructions.

Step 2. PDU Configuration

Verify that the IP address of all computers that will be part of the shutdown process, are included in the Remote List on the web interface.

Step 3. Notification

Notifying the computers of potential outlet shutdown can be accomplished using the following functions:

- Outlets Control Menu: Performing the task of turning off or rebooting outlets.
- Scheduling Menu: Setting the PDU to perform the task of turning off or rebooting outlets. The notification will occur prior to the scheduled date/time.
- Outlet Overload: In the event of PDU overload, notification will be sent prior to the PDU shutting down.

OPERATION

Firmware Upgrade

By upgrading the Firmware, you can obtain new features and updates/improvements to existing functionality. To ensure the firmware is kept up to date, please regularly visit our website to see if there is any updated firmware version available. There are three methods for upgrading the PDU firmware. Please follow the instructions below for the method that is appropriate for your application. There is one file to update in order to upgrade the firmware version:

* cpsgpdumafw_xxx_x_xx

Note that the XXX is not part of the file name but is where the version number in the filename is given.

Prior to performing a firmware update, please:

- Download the latest firmware from www.cyberpower.com.
- Extract the downloaded firmware file to your local "C:\" drive.

Note:

1. The FTP service needs to be enabled before attempting to execute a firmware upgrade.
2. Please do not turn the PDU off when performing the firmware upgrade. PDU outlets will remain powered on while the firmware update takes place. Only the PDU LCD screen will reboot.
3. The PDU LCD screen will reboot during the firmware update process. This DOES NOT cause the PDU outlets to reboot.

Option 1: Single Device Upgrade

Use the following steps to upgrade the firmware.

1. Open a command prompt window and navigate to "C:\".
2. Login to the PDU with FTP command, type
   - C:\>ftp
   - ftp> open 192.168.22.126 21
   (for example: 192.168.22.126 is the current IP of the PDU and 21 is the default ftp port for the PDU)
   - Connected to 192.168.22.126.
   - 220 CyberPower FTP Server Ready.
   - User (192.168.22.126:(none)):cyber
   - 331 User name okay, need password.
   - Password:
   - 230 User logged in, proceed.
   - ftp>
3. Upload cpsgpdumafw_xxx_x_xx, type
   - ftp > bin
   - ftp > put cpsgpdumafw_xxx_x_xx
4. Upgrade complete, type
   - ftp > quit
5. The system will reboot after you type "quit".

Option 2: Single or Multiple Device Upgrade (recommended)

Use the following steps to upgrade the firmware.

1. Install the CyberPower Power Device Network Utility 2 available for download at www.CyberPower.com.
2. After installation completes, run the **Power Device Network Utility 2**.
3. The main window of the Power Device Network Utility 2 program is shown in Figure 1. The configuration tool will display all CyberPower Remote Management devices present on the local network subnet. The **Scan** button is used to search the local network subnet again.

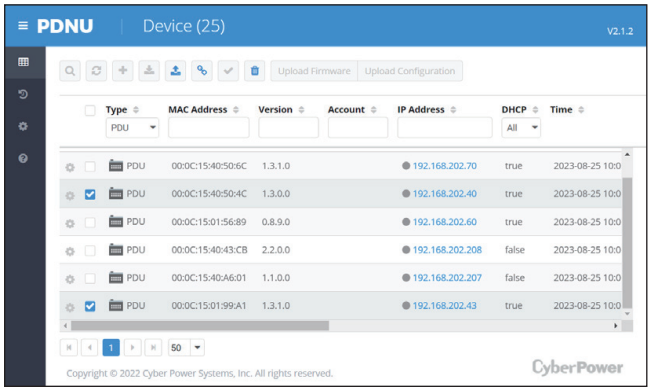


Figure 1

4. Check the boxes to select the devices you wish to upgrade, and click **Connection** on the top tools list to enter the device user account and password (shown in Figure 2). Once the connection is confirmed, the status icon next to the IP Address will change from grey to green.

NOTE: You must connect to the device by entering your user account and password credentials before the firmware upgrade.

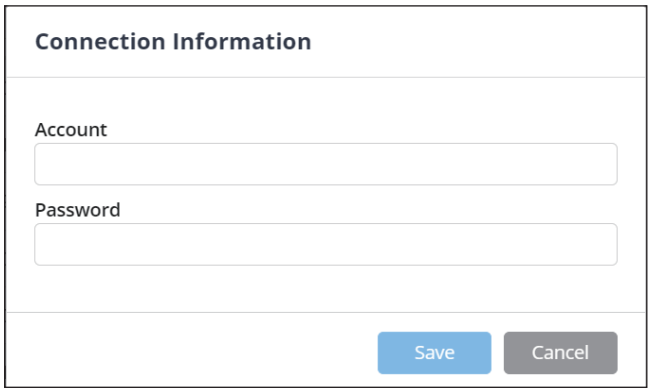


Figure 2

Firmware Upgrade

5. Select the devices you wish to upgrade by checking their respective checkbox and select **Upload Firmware**. **NOTE:** You can upload the firmware of multiple devices that use the same firmware files.

6. Select the Firmware file and click **OK** to implement firmware upgrade, as shown in Figure 3.

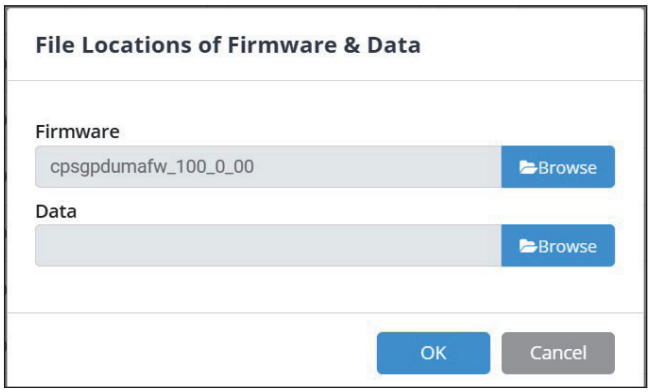


Figure 3

7. Once the firmware upgrade is implemented, you will see the Result in the main window, as shown in Figure 4.

   Note: If you don't want to wait for the firmware upgrade, you can stop action by choosing **Abort** in the **Action** menu. However, this is not recommended because the Abort action may cause the device to malfunction.

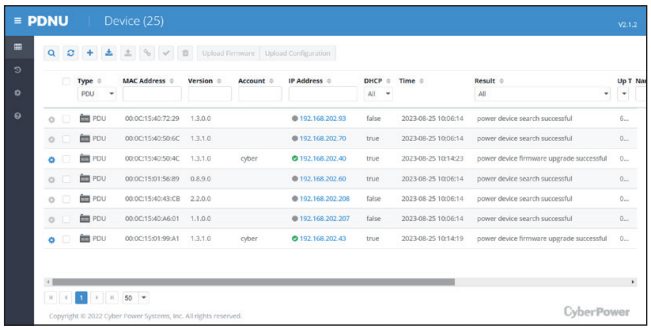


Figure 4

Option 3: Use a USB Flash Drive

Use the following steps to upgrade the firmware.

1. Download the latest firmware from www.cyberpower.com.
2. Extract the file to the root directory of a USB flash drive with **FAT32** format. Please note that the file below should be available in order to complete the firmware upgrade process:

   * cpsgpdumafw_xxx_x_xx
3. Plug the USB drive into the PDU USB 1 port and use multifunction button to choose USB Storage in the main menu.
4. Select **USB** and press **Enter** button to enter **Firmware Upgrade** menu.
5. Select **Main** and **Yes** to start the upgrade process.
6. The PDU will reboot after the process is completed.

   Note: You can check to see if the firmware upgrade is successful by checking the "Firmware version" on the [System->About] screen via web UI. You can also check Firmware Version on LCD screen. Use multi-function button to enter main menu and select **About** to see PDU information.

Option 4: Use Secure Copy (SCP) command

Use the following steps to update the firmware via SCP.

For Windows Users:

1. Download any PuTTY Secure Copy client (PSCP) utility.
2. Save the firmware files and the PSCP Utility in the same folder.
3. Open the Command Line Interface and change the path to where the firmware files and the PSCP Utility are saved.
4. Enter the following command to perform the firmware update:

   pscp –scp <filename> <user>@<IP address of PDU>:

   Note:

   a. The SSH setting on the PDU must be Enabled.

   b. <filename> is the filename of the firmware file. There is one firmware file to upload: cpsgpdumafw_xxx_x_xx.

   c. <user> is the username of the SSH account on the PDU.

   d. Ensure to add ":" after the IP address.
5. After executing the command, a message may appear asking if you trust the host. To continue type "y" for yes within 10 seconds.
6. On the next screen enter the PDU password. Please wait until the progress indicator displays 100%. The system will automatically log out and reboot after the transfer is complete.
7. If the firmware file transfer is unsuccessful you will see an error message. Attempt to retype the command and execute it again.

OPERATION

Firmware Upgrade

For Linux, MacOS and Unix Users:

1. Install the related distribution of an SSH or SCP client, for example: Openssh client.
2. Open the Terminal and change the path to where the firmware files are saved.
3. Enter the following command to perform the firmware update:
   - pscp –scp <filename> <user>@<IP address of PDU>:

   Note:
   a. The SSH setting on the PDU must be Enabled.
   b. <filename> is the filename of the firmware file. There is one firmware file to upload: cpsgpdumafw_xxx_x_xx.
   c. <user> is the username of the SSH account on the PDU.
   d. Ensure to add ":" after the IP address. For example: scp cpsgpdumafw_xxx_x_xx cyber@192.168.1.100:

   Note: cpsgpdumafw_xxx_x_xx is the firmware file of the version being updated.
4. After executing the command, a message may appear asking if you trust the host. To continue type "y" for yes within 10 seconds.
5. On the next screen enter the PDU password. Please wait until the progress indicator displays 100%. The system will automatically log out and reboot after the transfer is complete.
6. If the firmware file transfer is unsuccessful you will see an error message. Attempt to retype the command and execute it again.

TROUBLESHOOTING

Problem	Possible Cause	Solution
PDU outlets do not provide power to connected equipment	1. Breaker tripped 2. Power cord is not properly plugged in	Reset Breaker, check the plug to insure its connected correctly. If the problem remains, contact technical support.
Amperage displayed on LCD screen exceeds the units capability	Overload	The load indicator shows red when overload. Reduce the load on the PDU until the overload is gone. If the problem remains, contact technical support.
Circuit breakers have tripped	1. Sustained overload 2. Excessive ambient or internal temperatures 3. Faulty breaker	Reset Breaker. If the problem remains, contact technical support.

CONFORMANCE APPROVALS

FCC Warning

WARNING!! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WARNING!! This equipment has been tested and found to comply with the limits for a Class A Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice: (1) An unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord by used. (2) Use only shielded cables to connect I/O devices to this equipment.

Note: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

The Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

Cet appareil numerique de la class A respecte toutes les exigencies du Reglement sur le materiel brouilleur du Canada.

European Union

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CAUTION! This product can expose you to chemicals including Styrene, which is known to the State of California to cause cancer, and Bisphenol-A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

CUSTOMER SERVICE & WARRANTY

Product Registration

Thank you for purchasing a CyberPower product. Prompt product registration entitles coverage under the Limited Warranty and also allows the opportunity to be notified of product enhancements, upgrades, and other announcements.

Registration is quick and easy at www.cyberpowersystems.com/registration (for USA and Canada) or www.cyberpower.com/registration (for all other regions).

Cyber Power International

Feel free to contact our Tech Support department with installation, troubleshooting, or general product questions.

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All Other Regions

Please visit our website for local contact information.

APPENDIX A - HYPER TERMINAL

Hyper Terminal software can be used for basic PDU configuration. In order for Hyper Terminal to interact with the PDU, the PC/server must be connected directly to the PDU via the serial port with the included RJ45/DB9 serial port connection cable. It utilizes a text-based interface and menu system. Navigation through the interface is done by typing the number of the menu option and pressing the Enter key. Setup the COM port settings using the following values.

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Note: The session will timeout and logout after 3 minutes of inactivity. Menu options are shown below:

[Main Menu]

1. Outlet Manager (Switched PDU Series Only)
2. Network Settings
3. System Configuration
4. Account Settings
5. Configure System to Default
6. Logout

[Outlet Manager]

1. Outlet Control
2. Outlet Configuration

[Network Setting]

Physical MAC Address: 00-0C-15-40-08-A9

1. System IP: 192.168.24.20
2. Subnet Mask: 255.255.255.0
3. Default Gateway: 192.168.24.254
4. DHCP: Enabled
5. Http Port: 80
6. Http Access: Enabled

[System Configuration]

1. Date (mm/dd/yyyy) : 11/11/2011
2. Time (hh:mm:ss): 17:17:25
3. Name:PDU41002G
4. Contact: Administrator
5. Location: Server Room

[Account Setting]

1. Administrator
2. Viewer (Web Only)

[Configure System to Default]

Sure to Configure System to Default

1. Yes
2. No

APPENDIX B - POWER DEVICE NETWORK UTILITY 2

Overview

The CyberPower Power Device Network Utility 2 is an easy-to-use interface which is used for establishing IP addresses on CyberPower PDU devices.

Installation

Step 1. Download the Power Device Network Utility 2 software from www.cyberpower.com.

Step 2. Select **Next** in the software wizard (Figure 1).

Figure 1

Step 3. Choose an installation directory. Select **Next** (Figure 2).

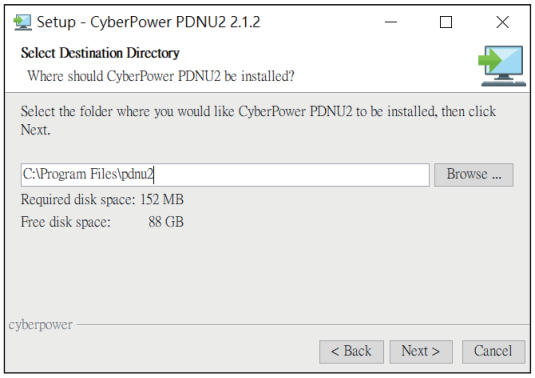


Figure 2

Step 4. Select **Next** to confirm the settings and install (Figure 3).

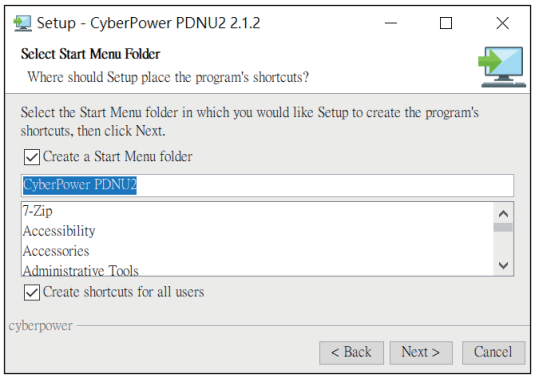


Figure 3

Step 5. Select **Finish** to finalize the installation (Figure 4).

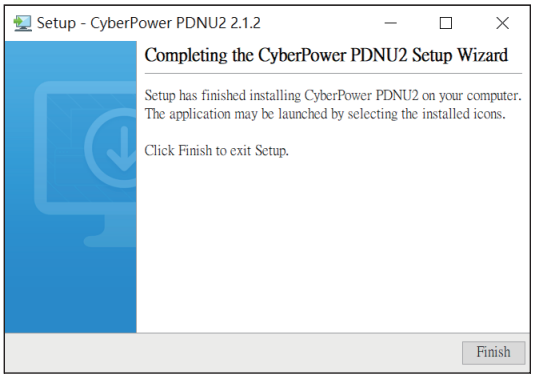


Figure 4

APPENDIX B - POWER DEVICE NETWORK UTILITY 2

Launch Program

To launch the Power Device Network Utility 2 and get started, select Programs from the Start menu in Windows and locate the new folder and icons for Power Device Network Utility 2. Select Power Device Network Utility 2 from the program folder.

Getting Started

The Power Device Network Utility 2 scans the network for devices with MAC addresses that match CyberPower network hardware. Once found, the device(s) can then be figured with a specific IP address, subnet mask, and gateway address. This allows the device(s) to function properly on the network and interface with CyberPower Management Console.

Step 1. Select the appropriate PDU device from the Equipment List and then click **Connection** button on the top tools list to set up.(Shown in Figure 5).

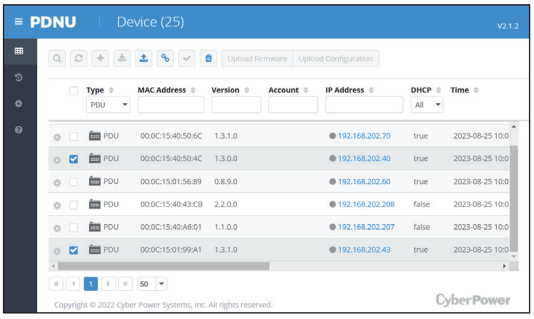


Figure 5. Equipment List

Note: If the PDU does not appear on the list, click the Refresh button to rescan the network. If it still does not appear, ensure that the PDU is turned on and was installed correctly.

Pressing **Stop** will cancel the scan/refresh process.

Step 2. Authentication

Enter the user name and password of the PDU device at the Authentication menu (Shown in Figure 6).

Note: The default username is "**cyber**" and the default password is "**cyber**".

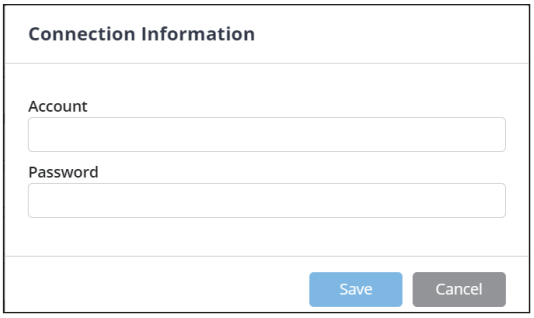


Figure 6. Authentication Menu

Step 3. Assign a valid IP Address to the PDU

With the appropriate device selected from the Equipment List, open the Device Network Settings menu by clicking on the tool button. In the Device Network Setting Menu, enter a valid IP address, subnet mask, and gateway address to setup the PDU device. (Shown in Figure 7)

Note: The DHCP option is not available for all power devices.

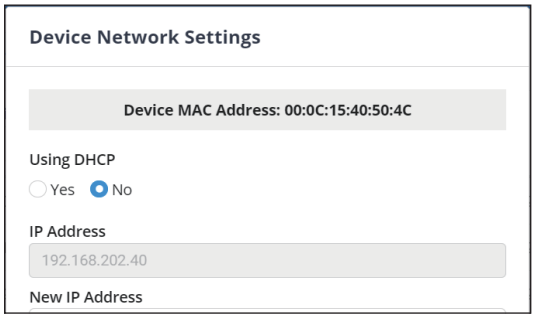
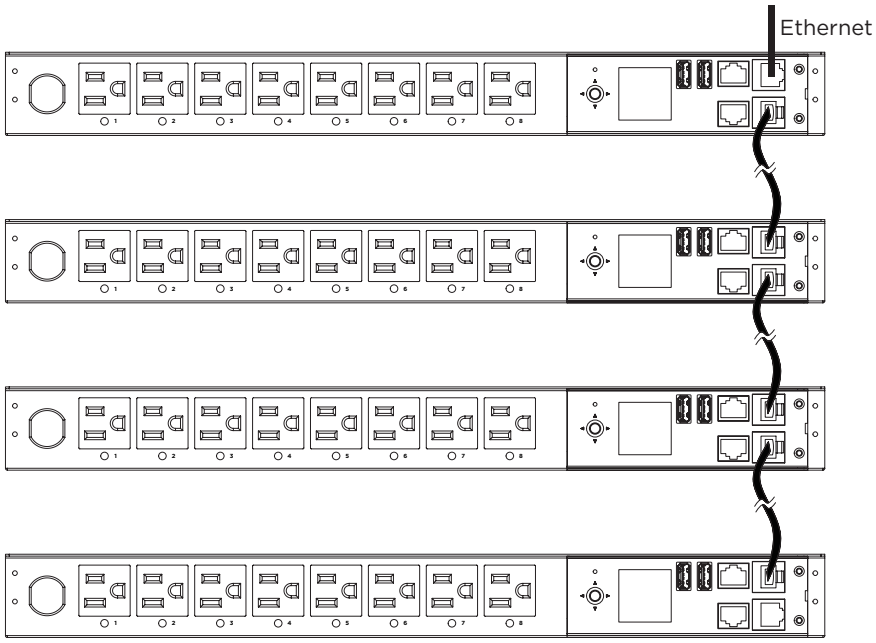


Figure 7. Device Network Settings

APPENDIX C - PDU DAISY-CHAIN FUNCTION

The daisy-chain function allows PDUs to be connected together and each PDU in the daisy chain has its own IP address.



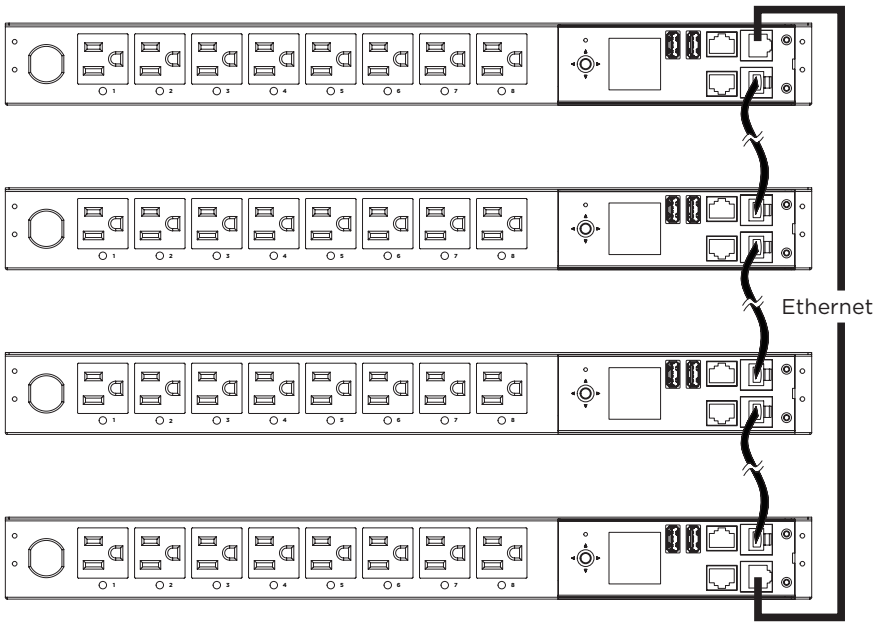
How to connect the PDUs together

Use one Ethernet cable and connect the PDUs via either ETH 1 port or ETH 2 port on the Ethernet module.

Note: Make sure to use straight through cables to perform the daisy-chain function.

Redundant Network Connection

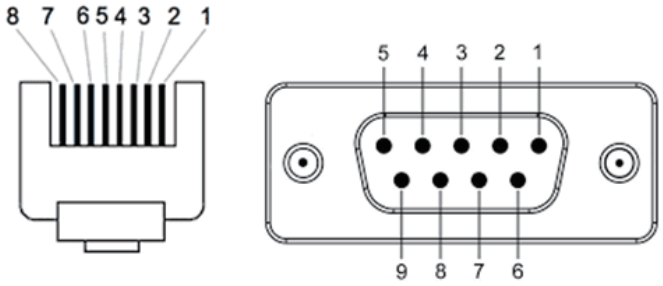
Network redundancy is achieved by simply connecting the last PDU in the chain back to network. By implementing Rapid Spanning Tree Protocol(RSTP), PDUs can be chained in network loops, thus enhancing reliability.



The maximum recommended length of the Ethernet cable to daisy-chain the PDUs is 50 ft (15 m).

APPENDIX D - RJ45 / DB9 SERIAL PORT CONNECTION CABLE PINOUT

Pinout of RJ45 plug and DB9 socket provided in package are shown below.

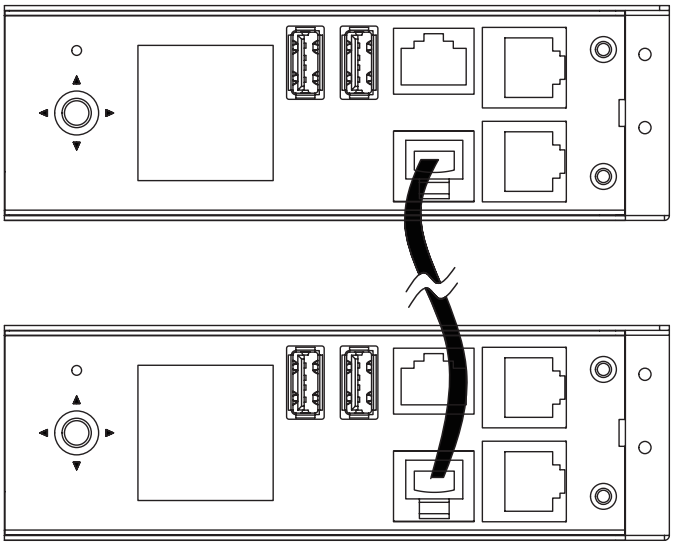


RJ45 Plug
(Male)

DB9 Socket
(Female)

APPENDIX E - POWER SHARING FUNCTION

The Power sharing function is implemented by connecting two PDUs via the Serial/Link Port with one standard ethernet cable. When one PDU loses power or experiences a malfunction that causes an AC/DC failure, the Ethernet module of the other PDU can bring forth a proprietary 24V, allowing the affected module to maintain basic functionality. This enables the PDU to notify users of abnormal events over the Internet.



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