PN5212/PN5320/PN7212/PN7320

Power Over the NET™
Power Distribution Units

ALTUSEN Power Over the NET™ products are Power Distribution Units that offer outlet level control combined with remote access to give IT administrators the ability to power control devices attached to the unit from practically any location via a TCP/IP connection. With support for power status measurement, PDUs enable administrators to monitor the current, voltage and power consumption of their IT equipment, either at the PDU or outlet level, minimizing the power cost of running their equipment; and ensuring high levels of system availability for server rooms of all sizes.

The ALTUSEN PDU is highly suitable for server rooms or data centers with high-density server deployments. It features a space-saving 0U design that allows it to be mounted vertically on the outside of the rack, resulting in a more efficient use of server room space, and the elimination of the usual cable clutter. With NEMA or IEC outlet support and with amperage capacity (20A or 30A for NEMA; 16A or 32A for IEC) , the PDU delivers plenty of power to the rack, which means you can safely connect a larger number of IT devices than you could with ordinary power units.

A measuring feature, coupled with a threshold alarm, keeps you informed of the operating status of all your attached equipment. Warning messages regarding triggered alarms can be sent via an SMTP server or SMS via the unit's Digital Output port. PDUs also provide sensor ports for temperature and humidity monitoring and threshold alarm message notification. IT administrators are able to easily and conveniently monitor and power control connected devices – remotely if necessary – by means of a browser-based UI, thereby minimizing maintenance costs and ensuring 24/7 reliability for their server room operations.

ALTUSEN Power Distribution Units can be daisy-chained to manage even more devices, so your server room management can expand in step with your company's growth. In a daisy-chained installation, administrators can remotely monitor and control the power status of a server that has a dual power supply from a single portal, by connecting its power cords to the outlets of separate level units (so they can receive power from separate sources). For ease of management, when PDUs are deployed in conjunction with other ALTUSEN products*, administrators can access them all from the same user interface.

When a PDU is integrated in a CC (Control Center Over the NET™) management software installation, the power outlet of an IT device can be associated with its KVM port and displayed on the same CC web page. This allows IT administrators to completely control an IT device from a single user interface. In addition, to provide the highest possible system integration, the Intelligent PDU offers an API to support third-party management software.

*KVM Over the NET™

	PN5212		PN5320		PN7212		PN7320	
Amp	20 A	16 A	30 A	32 A	20 A	16 A	30 A	32 A
Inlet	NEMA L5-20P	IEC60309	NEMA L5-30P	IEC 60309	NEMA L5-20P	IEC60309	NEMA L5-30P	IEC60309
Outlet	12		20		12		20	
Rack Space	0U		0U		0U		0U	
LAN Port	V		V		V		V	
Daisy-chain	V		V		V		V	
Switching Capability	Per Outlet		Per Outlet		Per Outlet		Per Outlet	
Metering Capability	PDU Level		PDU Level		Outlet & PDU Level		Outlet & PDU Level	
Thresholds & Alarms	V		V		V		V	
Environment Monitoring					V		V	
Digital Output Port					V		V	
Modem Support					V		V	

⟫ *FEATURES*

Power Distribution
- Maximum Amps/Outlet:
  NEMA 20A / 12 outlets (PN5212/PN7212); 30A/ 20 outlets (PN52320/PN7320)
  IEC 16A / 12 outlets (PN5212/PN7212); 32A/ 20 outlets (PN5320/PN7320)
- Space saving 0U rack mount design
- IEC or NEMA outlet models
- Daisy chain up to 15 additional stations for up to 192 (PN5212 / PN7212) or 320 (PN5320 / PN7320) outlets
- 2 x 7 segment front panel LED shows Station and Outlet ID
- Overcurrent protection and recovery for the PDU
- Remote users can monitor outlet status via web pages on their browsers
- Safe shutdown support
- Separate power for the unit's own power and its power outlets. The user interface is still accessible even when an overload condition trips the devices' circuit breaker

Remote Access
- Remote power control via TCP/IP and a built in 10/100 Ethernet port
- Out of Band operation via modem access*
- Network Interfaces: TCP/IP, PPP, UDP, HTTP, HTTPS, SSL, SMTP, DHCP, ARP, NTP, DNS, Telnet, 10Base-T/100Base-TX, auto sense, Ping
- IPv6 support

Operation
- Local and Remote power outlet control (On, Off, Power Cycle) by individual outlets and outlet groups
- Outlet group support at the PDU and Daisy-chain levels – the same action can be performed on a specified group of outlets at the same time
- Supports redundant power management via daisy chaining and outlet groups
- On/Off scheduling for individual outlets and outlet groups. Power management tasks can be scheduled on a daily, weekly, monthly, or user-specified times basis
- Supports multiple power control methods – Wake on LAN, System After AC Back, Kill the Power
- Power-on sequencing - users can set the power on sequence and delay time for each outlet to allow equipment to be turned on in the proper order
- Easy setup and operation via a browser-based user interface
- Multibrowser support (IE, Mozilla, Firefox, Safari, Opera, Netscape)
- Telnet and SSH access for text menu configuration and outlet level switching / monitoring
- Local console access support
- Java GUI AP program provided for non-browser connectivity
- RTC support to keep the timer running during times of no power.
- Up to 64 user accounts - up to 32 concurrent logins

Management
- Power status measurement at PDU and outlet* levels
- LED indicators for current; voltage; power dissipation; temperature; and humidity at the PDU and outlet* levels
- Current; voltage; power dissipation; and energy consumption displayed in a browsed-based UI for monitoring at the outlet*, group, PDU, and daisy-chain levels
- Environment monitoring* – supports external temperature/temperature & humidity sensors for rack temperature and humidity monitoring
- Current, voltage, power dissipation, energy consumption, temperature, and humidity threshold level setting
- Alert threshold notification for selected events (On, Off, Recycle, Failure, etc.), via audio alarm and blinking LEDs (locally), SMTP, SNMP trap notification, and digital output*
- Naming support for outlets and outlet groups
- User outlet access assignment on an outlet-by-outlet basis.
- Windows-based Log Server; event logging, and syslog support
- Integration with ALTUSEN CC2000 Management software and KVM devices
- API for 3rd party software centralized control integration
- Upgradeable firmware – daisy chained stations receive the upgrade via the daisy chain bus
- Multi-language support: English, German, Traditional Chinese, Smplified Chinese, Japanese, Korean, Russian

Security
- Three-level password security
- IP/MAC filtering
- Secure 128-bit SSL encryption
- Remote authentication support: RADIUS, TACACS+, LDAP, LDAPS and Active Directory

*Feature supported by PN7212/PN7320 only

≫ Benefits

Remote Monitoring	With PDU/Outlet level metering, IT administrators can easily monitor the current, voltage, and power consumption status of all connected IT equipment via a browser-based UI. With the addition of temperature and humidity sensors, even the status of the rack environment can be monitored from just about anywhere in the world.
Outlet Switching	By simply clicking a button on the browser-based UI, administrators can power control the connected devices with ease. There is no longer any need to move around the server room turning equipment on and off. Outlet level remote switching ensures that the server room operates smoothly.

Early Warning Notification

The PDU permits server room administrators to set custom thresholds for current, voltage, power consumption, humidity, and temperature. When levels exceed the user defined thresholds, designated recipients can receive alarm notifications via SMTP email, SNMP traps, or SMS sender (connected to the Digital Output port). An audio alarm can also sound and lights with blink at the local site. Necessary steps can be taken to avoid equipment damage due to such things as circuit overload – reducing mean time to recovery and minimizing loss.

Environment Monitoring

The PDU supports external, environment sensors that allow administrators to monitor temperature and humidity remotely. IT administrators can set environment thresholds to identify critical value and take preventive actions before a system failure occurs – thereby helping to obtain the highest degree of availability for all mission-critical equipment.

Centralized Management

Combining with ALTUSEN's CC (Control Center Over the NET™) management software gives IT administrators the advantages of centralized control over the entire Power Over the NET™ installation, as well as all other Over the NET™ products from a single user interface. By associating the KVM port, serial port and power outlet of an IT device, all the ports can be presented on the same web page for convenient access and management. In addition, a free API is included with the PDU that provides the ability to integrate the unit into your existing IT applications and tools.

ALTUSEN Product Integration*

The ALTUSEN PDU can be integrated with multiple ALTUSEN devices to provide a single interface point – the switch's interface – allowing IT administrators to control servers or serial devices at the same time as they control their power management. For KVM switches that support the Power Association function, a KVM port can be associated with a power outlet. If the connected server has a dual power supply the KVM port can be associated with two outlet ports and the operation of both power supplies can be synchronized.
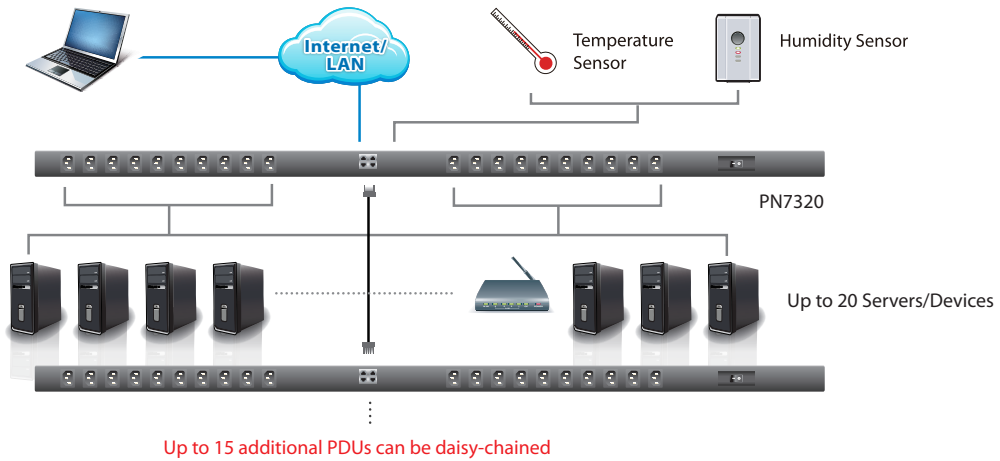
Redundant Power Management

The ALTUSEN PDU supports daisy-chaining and outlet groups to provide redundant power management. Equipment with dual power supplies can be assigned to outlet groups for convenient control. Since up to 15 additional units can be daisy chained from the master unit, IT administrators can connect a server's power cords to different units - each of which is connected to a separate power source - for failsafe operation. Management efficiency is also increased, since the power status of both outlets can be monitored and controlled from the same portal.

*KVM Over the NET™

Specification

Function			PN5212	PN5320	PN7212	PN7320
Power Outlets	Direct		12	20	12	20
	Max		192 (via Daisy Chain)	320 (via Daisy Chain)	192 (via Daisy Chain)	320 (via Daisy Chain)
Connectors	Power Inlets	NEMA	1 x NEMA L5-20P	1 x NEMA L5-30P	1 x NEMA L5-20P	1 x NEMA L5-30P
		IEC	1 x IEC 60309	1 x IEC 60309	1 x IEC 60309	1 x IEC 60309
	Power Outlets	NEMA	12 x NEMA 5-15R	3 x NEMA 5-20R 17 x NEMA 5-15R	12 x NEMA 5-15R	3 x NEMA 5-20R 17 x NEMA 5-15R
		IEC	12 x IEC320 C13	3 x IEC320 C19 17 x IEC320 C13	12 x IEC320 C13	3 x IEC320 C19 17 x IEC320 C13
	PON In / Console		1 x RJ-45 (F)			
	PON Out		1 x RJ-45 (F)			
	Modem		N/A		1 x RJ-45 (F)	
	LAN		1 x RJ-45 (F)			
	Environment Sensor		N/A		2 x RJ-11 (F)	
	Digital Output		N/A		1 x Terminal Block	
LEDs	ID		1 x 2-digit 7-segment			
	Station		1 x Green			
	Outlet		N/A		1 x Green	
	Readout		1 x 3-digit 7-segment			
	Current		1 x Green			
	Voltage		1 x Green			
	Power		1 x Green			
	Sensor 1		N/A		1 x Green	
	Sensor 2		N/A		1 x Green	
I/P Rating (Total Input)	NEMA		100-120V; 50/60Hz; 16A	100-120V; 50/60Hz; 24A	100-120V; 50/60Hz; 16A	100-120V; 50/60Hz; 24A
	IEC		200-240V; 50/60Hz; 16A	200-240V; 50/60Hz; 32A	200-240V; 50/60Hz; 16A	200-240V; 50/60Hz; 32A
Load Capacity	NEMA		120V; 50/60Hz; 1920W	120V; 50/60Hz; 2880W	120V; 50/60Hz; 1920W	120V; 50/60Hz; 2880W
	IEC		230V; 50/60Hz; 3680W	230V; 50/60Hz; 7360W	230V; 50/60Hz; 3680W	230V; 50/60Hz; 7360W
O/P Rating	Per Port	NEMA	100-120V; 50/60Hz; 12A	100-120V; 50/60Hz; 16A (x3) / 12A (x17)	100-120V; 50/60Hz; 12A	100-120V; 50/60Hz; 16A (x3) / 12A (x17)
		IEC	200-240V; 50/60Hz; 10A	200-240V; 50/60Hz; 16A (x3) / 10A (x17)	200-240V; 50/60Hz; 10A	200-240V; 50/60Hz; 16A (x3) / 10A (x17)
	Total	NEMA	100-120V; 50/60Hz; 15A	100-120V; 50/60Hz; 23A	100-120V; 50/60Hz; 15A	100-120V; 50/60Hz; 23A
		IEC	200-240V; 50/60Hz; 15A	200-240V; 50/60Hz; 31A	200-240V; 50/60Hz; 15A	200-240V; 50/60Hz; 31A
Power Consumption	NEMA		120V; 50/60Hz; 16W	120V; 50/60Hz; 22W	120V; 50/60Hz; 16W	120V; 50/60Hz; 22W
	IEC		230V; 50/60Hz; 18W	230V; 50/60Hz; 26W	230V; 50/60Hz; 18W	230V; 50/60Hz; 26W
Environment	Operating Temp.		0-50℃			
	Storage Temp.		-20 - 60℃			
	Humidity		0-80% RH Non-condensing			
Physical Properties	Housing		Metal			
	Weight		4.49 kg	5.68 kg	4.49 kg	5.68 kg
	Dimensions (L x W x H)		6.42 x 5.46 x 134 cm	6.42 x 5.46 x 167.64 cm	6.42 x 5.46 x 134 cm	6.42 x 5.46 x 167.64 cm

Temperature Sensor • Humidity Sensor • Internet/LAN • PN7320 • Up to 20 Servers/Devices

Up to 15 additional PDUs can be daisy-chained

Inlet/Outlet Chart

Model No.	Inlet	Inlet Type	Inlet Current	Outlet	Outlet Type	Outlet Current
PN5212	1	NEMA L5-20P (120V)	20A	12	NEMA 5-15R	12A
	1	IEC 60309 (230V)	16A	12	IEC320 C13	10A
PN5320	1	NEMA L5-30P (120V)	30A	17	NEMA 5-15R	12A
				3	NEMA 5-20R	16A
	1	IEC 60309 (230V)	32A	17	IEC320 C13	10A
				3	IEC320 C19	16A

Model No.	Inlet	Inlet Type	Inlet Current	Outlet	Outlet Type	Outlet Current
PN7212	1	NEMA L5-20P (120V)	20A	12	NEMA 5-15R	12A
	1	IEC 60309 (230V)	16A	12	IEC320 C13	10A
PN7320	1	NEMA L5-30P (120V)	30A	17	NEMA 5-15R	12A
				3	NEMA 5-20R	16A
	1	IEC 60309 (230V)	32A	17	IEC320 C13	10A
				3	IEC320 C19	16A

Optional Equipment

EA1140
• Temperature Sensor
EA1240
• Temperature & Humidity Sensor

Function		Temperature Sensor (EA1140)	Temperature & Humidity Sensor (EA1240)	
Connectors		RJ-11		
Measurement Range	Range	0 ~ 60 °C	0 ~ 60 °C	15 ~ 95 % RH
	Accuracy	+/- 1°C	+/- 1°C	+/- 5% RH
Power Consumption		12V, 60mW		
Storage Temperature		-20 - 60°C		
Housing		Plastic		
Weight		0.07 kg		
Cable Length		3 meter		

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