lenovo FOR THOSE WHO DO.

Switched and Monitored Power Distribution Units

Advanced power distribution for efficient energy management

The Switched and Monitored Power Distribution Units (PDUs) make it quick and simple to deploy, protect and manage your high-availability System x® and BladeCenter® environments. These advanced power distribution solutions offer real-time outlet level remote monitoring and switching for a precise view of power usage to help improve energy efficiencies and to provide the control for lights-out server room or data center management.

Meet your system, power and budget requirements

These space-efficient and power-dense PDUs come in 0U (vertical mount) and 1U (horizontal mount) form factors. The 0U 24 IEC-320-C13 or 12 IEC-320-C13 and 12 IEC-320-C19 receptacle designs mount in the rear channels of 42U and above rack cabinets to conserve valuable U space for IT equipment.

These space-saving offerings also help simplify deployment by providing tool-less rear mounting in 9360, 9361 and 9362 model rack cabinets, which significantly reduces installation time. 0U models have input cable connections, outlets, communication connections, and breakers on one face to improve usability and cable management. The 1U model comes with nine IEC-320-C19 receptacles on the front panel and three IEC-320-C13 receptacles on the rear panel. The 1U model includes hardware to mount in either the EIA space or a side pocket of the rack.

These models are equipped to meet the requirements of your most power-demanding and highest-availability systems with single-phase 30 A and 32 A and three-phase 30 A, 32 A and 50 A solutions available

Improve management and control

The receptacles on these PDUs are switched for additional intelligent power management capabilities. Switched receptacles provide remote on and off functionality to allow for power cycling and to help prevent unintended overloading.

Access, configure and manage units from remote locations to save valuable time through a web browser, NMS, Telnet, SNMP, or HyperTerminal (console). For future product enhancements, easily and quickly upgrade the firmware via the network download.

Easily monitor power consumption

Switched and Monitored PDU offerings provide local and remote monitoring. An easy-to-read graphical liquid crystal display (LCD) on 0U models provides a quick visual indication of each circuit's load, reducing the risk of overloads and tripped breakers. It also displays alarm history, key product information and allows for at the rack PDU management by providing control of the individual receptacles.

Bright LED receptacle indicator lights display outlet status (On/Off) on both the 1U and 0U models to quickly determine outlet availability when adding new loads.

intel inside XEON

Figure 1. 0U Switched and Monitored PDU models have 24 C13 receptacles or 12 C13 and 12 C19 receptacles on one face with the primary input, communication connections and circuit breakers for improved usability and cable management.

Remote monitoring over most common communication interfaces displays circuit- and PDU-level information, warnings and alarms from anywhere, automatically sent to a building management or power management system. On-board power metering at the outlet, phase circuit and PDU level helps prevent overload conditions and optimizes power distribution.

Gain a complete view of energy usage

When installed in a System x or BladeCenter rack cabinet, Switched and Monitored PDU models are designed to collect energy usage information on attached rack-mount products, and report the information to IBM Systems Director Active Energy Manager over an attached customer-provided LAN.

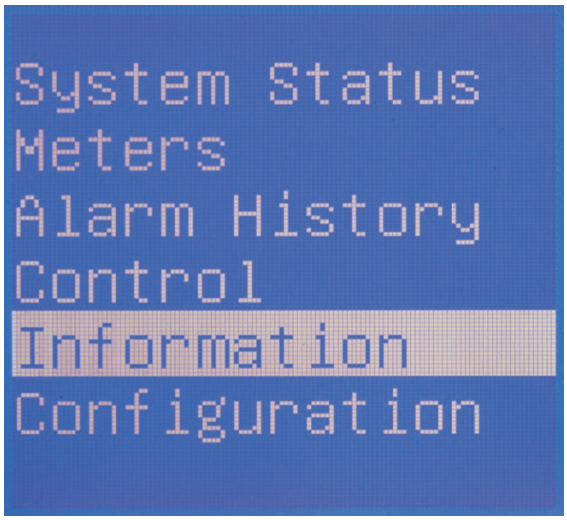

Figure 2. The front panel graphical LCD on 0U models provides information about load status, events, measurements, identification and settings.

Using Switched and Monitored PDU models and IBM Systems Director Active Energy Manager, you can gain a more complete view of energy used within the data center.

Active Energy Manager is an extension to IBM Director and is designed to provide simplified management of power consumption across multiple systems. A version of Active Energy Manager is available for System x and BladeCenter systems. The Active Energy Manager offering has both no-charge (free) monitoring functions and optional chargeable (fee-based) management functions. Active Energy Manager monitoring functions are available at no charge. Monitoring functions include power trending, thermal trending and intelligent PDU support. Fee-based management functions include power capping and power savings mode.

Switched and Monitored PDUs provide time-stamped activity logging, trending and load profiling. Obtain metering, alarm and statistical info for each circuit and the entire PDU to assess historical power consumption and quality for a phase circuit or PDU, to consider past trends before adding new loads. Gain valuable insight for managing power consumption, diagnosing issues and optimizing utilization of available power at all levels from data archived and profiled across time.

Use the optional Environmental Monitoring Probe (46M4113) to monitor local temperature and humidity values to identify hot spots and make informed decisions on reducing cooling costs and power consumption.

Why System x

System x is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. System x also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

Figure 3. The 1U Switched and Monitored PDU features nine C19 receptacles on the front and three C13 receptacles on the back.

Specifications

Part number	46M4116	46M4119	46M4134	46M4137	46M4167
Description	0U 24 C13 Switched and Monitored 30 A PDU	0U 24 C13 Switched and Monitored 32 A PDU	0U 12 C19/ 12 C13 Switched and Monitored 50 A 3-Phase PDU	0U 12 C19/ 12 C13 Switched and Monitored 32 A 3-Phase PDU	1U 9 C19/ 3 C13 Switched and Monitored 30 A 3-Phase PDU
Power input					
Input power	Single-phase	Single-phase	Three-phase	Three-phase	Three-phase
Input cord connector	NEMA L6-30P	IEC-309 P+N+Gnd	CS8365L	IEC-309 3P+N+Gnd	NEMA L21-30P
Input cord length	Fixed, 3 m (9 ft 10 in.)				
Input voltage	200 - 208 V	220 - 240 V	200 - 208 V	220 - 240 V	200 - 208 V
Input current rating	30 A	32 A	50 A	32 A	30 A
Power output					
Output power	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
Output receptacles (IEC-320)	(24) C13	(24) C13	(12) C13 and (12) C19	(12) C13 and (12) C19	(3) C13 and (9) C19
Circuit breaker	(3) double-pole 20A	(3) double-pole 20A	(6) double-pole 20A	(6) double-pole 20A	(9) double-pole 20A
Output voltage rating	200 - 208 V	220 - 240 V	200 - 208 V	220 - 240 V	200 - 208 V
Output current rating	30 A (North America Regulatory Derated Current 24 A)	32 A	50 A (North America Regulatory Derated Current 40 A)	32 A	30 A (North America Regulatory Derated Current 24 A)
Maximum power rating	6240 VA	7680 VA	31200 VA	22920 VA	18720 VA

Specifications

Environmental and safety					
Operating temperature at 0 - 914 m (0 - 3000 ft)	10° C - 55° C (50° F - 122° F)				
Operating temperature at 914 - 2133 m (3000 - 7000 ft)	10° C - 55° C (50° F - 122° F)				
Mounting option	Tool-less mounting in 9360, 9361 and 9362 racks. Hardware included for rear channel vertical mounting in other 42U cabinets; both installations are approved for preconfigured shipment in select racks				
Operating humidity	5% - 90% (noncondensing)				
Localized air temperature in PDU	55° C (122° F) maximum				
Maximum operating altitude	3048 m (10000 ft)				
Optional Environmental Monitoring Probe (EMP)	46M4113				
Mechanical					
Form factor	0U	0U	0U	0U	1U
Physical dimensions (HxWxD)	1800 × 44 × 85 mm (71 × 1.73 × 3.35 in.)		1840 × 55 × 108 mm (72.4 × 2.16 × 4.25 in.)		43.4 × 447 × 350 mm (1.73 × 17.6 × 13.78 in.)
Additional clearance	25 mm (0.98 in.) for circuit breakers				
Unit weight	6 kg (13 lb)	6 kg (13 lb)	11 kg (24 lb)	9 kg (20 lb)	9 kg (20 lb)
Warranty	3-year limited warranty				

For more information

To learn more about the Switched and Monitored PDUs, visit **ibm.com**/systems/x/hardware/options/ or contact your Lenovo marketing representative or Business Partner.

LYD03109-USEN-00