Eaton 9140 UPS

Superior de-centralized power protection for medium- and high-density rack environments

Features

- Protects mission-critical rackmount applications from downtime, data loss/corruption, and process interruption by providing continuous, clean power with double conversion topology
- Conserves valuable rack space with up to 10 kVA of power in only 6U of height, including batteries
- Pre-installed rackmount hardware significantly reduces installation time
- Modular, lightweight design facilitates installation and improves service time
- Upgradable from 7.5 kVA to 10 kVA, to accommodate system growth
- Blade-server compatible with standard IEC receptacles
- ABM® technology significantly increases battery life, resulting in more uptime and fewer battery replacements
- Backed by a two-year limited warranty and $250,000 load protection guarantee

Product snapshot

Power rating:	10 kVA/8 kW and 7.5 kVA/6 kW Single-phase in/single-phase out Three-phase in/single-phase out (manually selectable in HW version)
Nominal input voltage:	1/1: 230 Vac (200–240 Vac) 3/1: 400/230 Vac
Nominal output voltage:	208 or 230 Vac auto-sensing (200–240 Vac)
Frequency:	50/60 Hz (auto-sensing)
Configuration:	Double conversion 6U rackmount, including batteries
Dimensions:	10.5" H (6U) x 17" W x 31.1" D 263 mm x 430 mm x 790 mm

Today's racks of IT equipment are requiring even greater power, from computer rooms and wiring closets to commercial data centers. Whether you manage the IT needs of a small-to-medium business or an entire commercial facility, you know it is a challenge to provide in-rack power protection for expanding loads in shrinking spaces.

Fortunately, technology advancements have also raised the power density of power protection systems. The Eaton® 9140 UPS from our Powerware® series delivers efficient, reliable power protection in only 6U of rack space, including batteries.

This double conversion UPS resolves all nine common utility power problems and supplies clean, continuous power to all connected equipment. If utility power goes out altogether, there is no delay transferring to backup power, either to UPS batteries or an auxiliary generator.

E·T·N

Powering Business Worldwide

Introducing the 9140

The 9140 and one EBM occupy only 9U of rack space.

Easily install and service your UPS

With the 9140, Eaton introduces a new standard in system availability. The key is an internal automatic bypass feature that allows the 9140 to continuously provide power to critical equipment while the system is serviced—even when the electronics are removed. A manual bypass switch in the chassis eliminates transfer time and allows for module repair and replacement without shutting down the load. And, with Eaton's comprehensive range of monitoring, remote diagnostic and field technician dispatch services, we can help expedite mean time to repair (MTTR) should the need arise.

You want to install and service your UPS quickly and efficiently. That's why the 9140 comes with pre-installed rackmount hardware, and features modules that are user-replaceable. One person, working alone, can replace a battery module without disrupting data center operations or power to protected equipment. Or, should you need to replace your power module, that too can be removed by a single person. The UPS will automatically transfer to and from bypass when a module is removed and installed to provide uninterrupted power to the load.

In today's dynamic IT environment, data room footprints change quickly. If you find yourself frequently moving racks and other IT equipment, perhaps a 9140 corded UPS is for you. This version of our UPS is equipped with a standard IEC 309-60A cord with plug as input, which means you don't need an electrician to install your UPS with each move—offering you greater flexibility.

Optimize battery performance

Standard internal batteries provide ride-through power until auxiliary power takes over or systems are gracefully shut down. At 10 kVA, you can extend runtime up to 45 minutes at full load with extended battery modules (EBMs). Lower loads will see even greater run-times. These 3U rackmount units use the same battery modules as those found inside the UPS, minimizing inventory requirements.

ABM technology significantly extends battery service life while optimizing the battery recharge time with a unique three-stage charging technique. The UPS automatically tests battery health and provides advance notification when preventive maintenance is needed.

Streamline operations with complete rackmount solutions from Eaton

All 9140 models and corresponding EBMs come with pre-installed rackmount hardware for easy installation in standard equipment racks. Also, all 9140 UPSs and EBMs come with seismic-mounting kits. Should your application specify Zone 4 seismic requirements, all hardware is included with the UPS and EBM.

For ease of operation and lowest total cost of ownership, you can count on Eaton for all your rackmount power protection and distribution needs, in addition to UPSs and optional EBMs.

Our line of rackmount Eaton power distribution units (PDUs) distributes conditioned UPS power throughout one or more racks—simply, elegantly and inexpensively. The basic PDUs offer standard input and output power connections. Eaton boasts multiple PDU models that can be connected to the output of the 9140, and distribute 200–240V power throughout your rack.

Additionally, small step-down transformer options deliver 120V output to power communications, monitoring and other peripheral equipment. Three of our 3 kVA model options occupy only 2U of rack space; a 250 VA model offers space-saving 1U and 0U mounting options. Both models connect to UPS receptacles and have standard NEMA outputs.

Stay continually informed of UPS status

For local monitoring, UPSs in this class offer only status indicators. The 9140 features both LEDs and an intuitive, multilingual LCD on the front of the unit. The LCD relays more in-depth operational information, communicates specific alarms and predictive service needs, and can be used to program certain features.

The 9140 constantly monitors its own operation and sends alarms or takes action if it detects a potential problem. If it senses an issue—planned or unplanned—the UPS instantly transfers to battery or bypass source, and back to normal when the alarm condition passes, with no interruption in power.

9140 runtimes (in minutes)

VA	Watts	UPS Internal Batteries	+1 EBM	+2 EBMs	+3 EBMs	+4 EBMs
1250	1000	80	137	189	275	365
2500	2000	31	61	99	138	181
3750	3000	18	38	68	92	121
5000	4000	12	27	52	69	90
6250	5000	9	21	42	55	72
7500	6000	7	17	35	46	60
8750	7000	6	14	31	40	51
10,000	8000	5	12	27	35	45

Modular, lightweight design allows for easy installation and service.

Unify and centralize UPS management

Every 9140 comes with LanSafe® power management software that enables you to remotely monitor UPS and battery performance, establish prioritized shutdown of devices and applications, test all networked UPSs, analyze trends and network conditions, and stay informed with a pager and e-mail.

Connectivity is easy. The standard unit 9140 comes with a USB port, a serial port, and an X-Slot® bay for additional communication options. With X-Slot interface cards, the UPS can communicate in a variety of networking environments, including the Web, as well as building management systems, environmental monitors, relay contact devices, multiple servers and other UPSs.

Gain a new level of confidence

Backed by a comprehensive warranty program, the 9140 delivers reliable, efficient and full-featured protection available for your organization's critical electronics.

Eaton is a global leader in power quality and management solutions and was named by Frost & Sullivan as "Power Quality Company of the Year" in 2004, 2005 and 2007 (September 2008). We have a long heritage of double conversion UPSs with an install base of the 9140 represents more than 40 years of expertise in power quality solutions.

Rackmount UPSs from Eaton deliver confidence—confidence that your rack environments are served by complete power conditioning and battery backup, and confidence that Eaton will be with you for the long term with premium warranty coverage and expert technical support.

To find out more about how the 9140 can protect your medium- and high-density rack applications, visit our Web site, www.powerware.com, or contact us at 1-800-356-5794.

Connectivity options offer maximum flexibility

The standard unit is equipped with USB and RS-232 serial ports to communicate with power management software. You can customize your UPS by adding an interface card for other applications:

ConnectUPS Web/SNMP Card

Monitor the UPS from anywhere. Connect the UPS to the Ethernet network and Internet for secure monitoring and management using a standard Web browser or SNMP.
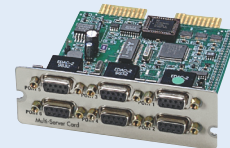

Modbus Card

Interwork with your existing Building Management System. A Modbus® Card enables real-time monitoring of UPS systems through a building management system or industrial automation system.

Relay Interface Card

Gather information from relay contact devices. Provides a dry-contact interface between the UPS and any relay-connected device, including the IBM® eServer® iSeries and a variety of industrial applications.

Multi-server Card

Independently manage diverse servers. A Multi-server Card enables up to six serially connected devices of mixed operating systems to be independently managed and controlled by a single UPS.

Environmental Monitoring Probe

Monitor environmental conditions. An optional Environmental Monitoring Probe remotely monitors temperature, humidity and two user-supplied contacts/sensors, such as smoke and intrusion detection.

9140 products and services

Model	Part number	Input connection	Output connections	Dimensions (H x W x D, inches)	Weight (lb)
200–240 Vac in (single-phase)/200–240 Vac out					
User selectable 380–415 Vac in (three-phase)/220–240 Vac out (single-phase) for hardwire models					
PW9140 7500 HW	103005093-6591	Hardwired	Hardwired (3) C19 & (2) C13	10.5 (6U) x 17.2 x 31.1	254
PW9140 10000 HW	103004728-6591	Hardwired	Hardwired (3) C19 & (2) C13	10.5 (6U) x 17.2 x 31.1	254
PW9140 7500	103005094-6591	IEC 309-60A cord	IEC 309-60A cord, (4) C19	10.5 (6U) x 17.2 x 31.1	265
PW9140 10000	103004727-6591	IEC 309-60A cord	IEC 309-60A cord, (4) C19	10.5 (6U) x 17.2 x 31.1	265

9140 options

Extended Battery Modules

PW9140 3U EBM[1]	103004729-6591			5.25 (3U) x 17.2 x 26.0	175

1. Up to four EBMs can be connected to a single 9140

PowerPass® Distribution Modules (PPDM)

3000 VA 208–240 Vac in – 120 Vac out

PDM1-HV-US-P1	103002742-6501	IEC 320-C20	(1) L14-30R & (6) 5-20R	3.5 (2U) x 17.0 x 23.9	50
PDM1-HV-US-P2	103002730-6501	IEC 320-C20	(1) L5-30R & (6) 5-20R	3.5 (2U) x 17.0 x 23.9	50
PDM1-HV-US-P3	103002731-6501	IEC 320-C20	(6) 5-20R	3.5 (2U) x 17.0 x 23.9	50

250 VA 208–240 Vac In – 120 Vac out

250 VA PPDM	05146401-6501	IEC 320-C13	(2) 5-15R	0U form factor, side cabinet mount	19

Power distribution units (PDUs)

PDU1212C	103004548-6501	IEC 320-C14	(12) C13	1.75 x 17.5 x 4.0	5.3
PDU1610C	103004550-6501	IEC 320-C20	(2) C19, (8) C13	1.75 x 17.5 x 4.0	5.8
PDU3208C	103004552-6501	Hardwired	(1) C19, (3) C13, (1) C19, (3) C13	1.75 x 17.5 x 4.0	4.3
PDU1210N (for use with PPDM)	103004538-6501	5-15P	(10) 5-15R	1.75 x 17.5 x 4.0	4.8
PDU2408N (for use with PPDM)	103004546-6501	L5-30P	(4) 5-20R, (4) 5-20R	1.75 x 17.5 x 4.0	6.8
PDU2408N3 (for use with PPDM)	103004551-6501	L14-30P	(2) L6-30R, (2) L5-20R, (4) 5-20R	3.5 x 17.5 x 4.0	9.8
Cord retention bracket	103004542-6501				

Enclosures

Part number	Description	Product dimensions (H x W x D, inches)	Shipping dimensions (H x W x D, inches)	Weight (lb)
9970936	42U Enclosure split rear & sides	80 x 24 x 42	83 x 32 x 48	295
9970935	42U Extension split rear no sides	80 x 24 x 42	83 x 32 x 48	257
9970940	42U Enclosure split rear & sides & casters	80 x 24 x 42	85 x 32 x 48	305
9970939	42U Extension split rear & casters no sides	80 x 24 x 42	85 x 32 x 48	267

9140 connectivity options

Part number	Description
103002974-5501	ConnectUPS-X Web/SNMP card
1019017	Modem card
103002510-5501	Modbus card
05146508-5501	USB card
01546447-5501	Multi-server card
1018460	Relay card (AS/400 compatible)
103003055	Industrial relay card
103003637-5501	Environmental Monitoring Probe (EMP) (requires ConnectUPS Web/SNMP X-Slot card)

9140 technical specifications

Power

Ratings	10 kVA/8 kW for 208–240V nominal voltage 9 kVA/7.2 kW for 200V 7.5 kVA/6 kW
Topology	True double conversion UPS

Electrical input

Nominal input voltage

Single-phase	200–208V (for 200–208V nominal output); 220–240V
Three-phase	380/220V, 400/230V, 415/240V

Input voltage range

Single-phase	160–253V (for 200–208V nominal output); 174–288V (for 220–240V nominal output)
Three-phase	301–499V/174–288V
Operating frequency	45–55 Hz range for 50 Hz nominal; 55–65 Hz range for 60 Hz nominal
Input power factor	>0.99
Input current distortion	<5% THD

Electrical output

Single-phase	200V/208V/220V/230V/240V user-selectable
Output voltage regulation	±2% static, ±10% dynamic
Efficiency	>90%
Output frequency	Automatic selection of 50 Hz nominal (±3.5 Hz) and 60 Hz nominal (±3.5 Hz)
Battery type	12V, 5 Ah, sealed, lead-acid, maintenance-free
Battery runtime	See battery runtime chart
Battery replacement	Modular, hot-swappable, user-replaceable
Charger	2.5A charger to support up to four additional EBMs
Start-on-battery	Allows startup of UPS without utility input

Communications

LCD	Multilingual graphical LCD with backlight
LEDs	(4) LEDs for notice and alarm
Communication ports	(1) USB, (1) RS-232 serial, (1) REPO
Communication slot	(1) X-Slot communication bay
Power management software	Bundled software suite CD 9140 is HID-compliant

General

Dimensions	H x W x D, in/mm
PW9140 UPS	10.5 (6U) x 17 x 31.1/263 x 430 x 790
PW9140 EBM	5.25 (3U) x 17 x 26/131 x 430 x 660

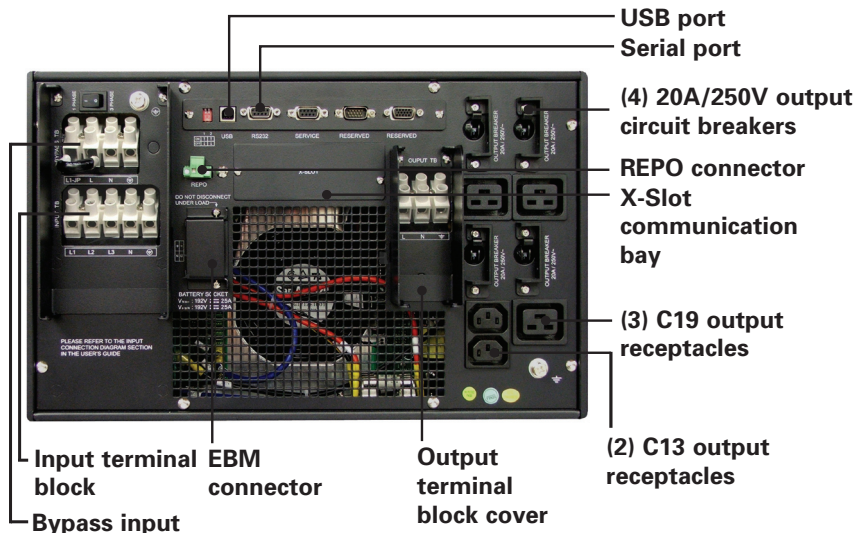| Weight	
PW9140 UPS	254 lb
PW9140 EBM	175 lb
Battery module	37 lb
Power module	40 lb
UPS bypass	Automatic on overload, overtemp, UPS failure or removal of power module
Overload to bypass	±10% of 112 to 130% for 60 seconds, transfer

Environmental

RoHS compliance	EU RoHS/WEEE compliant
Operating temperature	0°C to 40°C (32°F to 104°F)
Transit and storage temperature	-20°C to +50°C (-4°F to 122°F)
Relative humidity	0–95% non-condensing
Audible noise	<55 dBA at 5 feet
Altitude	Operating 3000m, transit 15000m

Certifications

Safety certifications	UL, cULus, NOM, TUV, CE
EMC compliance markings	FCC, CE, VCCI, C-Tick

9140 hardwire

9140 (rear view)

- USB port
- Serial port
- (4) 20A/250V output circuit breakers
- REPO connector
- X-Slot communication bay
- (3) C19 output receptacles
- (2) C13 output receptacles
- Output terminal block cover
- EBM connector
- Input terminal block
- Bypass input

9140 EBM (rear view)

- Circuit breaker
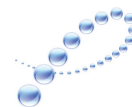- EBM battery connector

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Italy: 39.02.66.04.05.40
Norway: 47.23.03.65.50
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