

Powerware series

10-30 kVA

Eaton 9355 UPS

Scalable. Compact. Flexible.



EATON
Powering Business Worldwide

Agility, scalability and space efficiency – with greater standard runtime

The Eaton® 9355 is a mid-size, three-phase uninterruptible power system (UPS) that delivers superior power protection for the ever-expanding loads in today's space-constrained data centers.

The double-conversion topology of the 9355 means that it protects IT infrastructure from all of the most common power problems to give data center managers greater peace of mind. The 9355 also offers an industry-leading combination of flexibility, scalability and power density—all in an innovative, high-efficiency package.

 The 9355's sleek, end-of-row tower design is available in 10 kVA and 20 kVA configurations, upgradeable to 15 kVA and 30 kVA, respectively, and offers the smallest footprint of any comparable UPS. Standard internal batteries often eliminate the need for costly and space-consuming external battery cabinets.

 An on-board power distribution module gives data center managers additional flexibility by helping to preserve valuable rack space and making the rack-based environment truly plug and play. This module can be configured for hardwired output or with a variety of output receptacles, reducing site preparation and installation expenses.

 Up to four 9355 UPSs can be paralleled for either redundancy or extra capacity using Eaton's patented Powerware® Hot Sync® paralleling technology. Powerware Hot Sync also enables wireless paralleling in the event of a communications failure, providing the industry's only truly redundant paralleling solution.

The 9355's space-efficient design and outstanding performance and reliability make it perfect for corporate, telecom, healthcare, banking, industrial and retail applications. Combined with Eaton's world-class warranty and service plans, expert technical support, and broad selection of options—and backed by 40 years of R&D excellence—the 9355 is the ideal power protection solution for small data centers.

Product snapshot

Power rating:	10, 15, 20 and 30 kVA at 0.9 power factor (three phase)	Frequency:	50/60 Hz auto-sensing
Form factor:	Small-footprint tower, black	Dimensions:	10 and 15 kVA two-high configuration: 32.2" H x 12" W x 32.5" D
Topology:	Double conversion		10 and 15 kVA three-high configuration: 47.8" H x 12" W x 32.5" D
Battery backup:	Up to 22 minutes typical, extendable up to three hours		20 and 30 kVA: 66" H x 20" W x 34" D
Input voltage:	208V/120V or 220V/127V		
Output voltage:	208V/120V or 220V/127V		
	480V: 120V/208V or 600V: 120/208 with input isolation transformer (at 60 Hz only)		

9355

Features and benefits

- Compact tower form factor offers up to 75 percent smaller footprint and 13 percent more power capacity than comparable UPSs for industry-leading power density
- All-in-one design with internal batteries and integrated power distribution module with maintenance bypass switch delivers a complete power protection solution in one box for simplified installation
- Double-conversion topology provides complete power protection, isolating valuable IT equipment from all nine of the most common power problems
- High 0.9 output power factor for more real power in less space
- Internal batteries on all standard configurations support up to 350 percent more runtime than comparable UPSs
- Scalable 10 kVA and 20 kVA configurations can be upgraded to provide 50 percent more power without additional hardware
- On-board, plug-and-play power distribution module allows for hardwired output or 15 different output receptacle options, enhancing flexibility and reducing installation costs
- Patented Powerware Hot Sync paralleling technology enables paralleling of up to four 9355 UPSs for additional capacity or redundancy
- Microprocessor-controlled ABM technology with innovative three-stage charging technique extends the useful life of UPS batteries and optimizes battery recharge time
- Power management software suite includes applications for remote UPS monitoring, management and shutdown to help ensure system and data integrity





10 kVA



15 kVA



20 kVA



30 kVA

Premium power protection

With the 9355 UPS, data center managers can safely eliminate the effects of electrical line disturbances and guard the integrity of their systems and equipment. The 9355 is a true double-conversion, three-phase system that can be used to prevent loss of valuable electronic information and minimize equipment downtime.

- The 9355 continually monitors incoming electrical power and removes the surges, spikes, sags, and other irregularities that are inherent in commercial utility power
- Working with a building's electrical system, the 9355 supplies the clean, consistent power required by sensitive electronic equipment for reliable operation
- During brownouts, blackouts, and other power interruptions, internal batteries provide emergency power to safeguard operation

Self-diagnosis

The 9355 constantly monitors its own operation—such as voltage, temperature and function of internal components—and sends an alarm or takes action if it detects a potential problem.

Self-correction

If it senses a problem, the 9355 instantly transfers the power path to a bypass source with zero interruption in power. When the alarm condition passes, the 9355 automatically reverts from bypass to normal power.

The 9355 UPS features a four-button graphical LCD that provides useful information such as load status, events, measurements and settings.

Advanced battery management

The 9355 UPS offers innovative technologies to maximize the health and service life of its internal and external batteries:

- ABM technology uses a unique three-stage charging technique that significantly extends battery service life and optimizes recharge time when compared to traditional trickle charging
- Temperature-compensated charging monitors battery temperature and adjusts the charge rate accordingly, which properly charges the battery and greatly extends battery life
- An integrated battery management system tests and monitors battery health and remaining lifetime, providing user notification to guide preventive maintenance

Eaton's UPS batteries are field replaceable. One person, working alone, can easily replace a battery without disrupting data center operations or power to protected equipment.

Green power performance

The 9355 delivers a robust combination of low input current distortion and high power factor for maximum efficiency. Operating at greater than 90 percent efficiency across all load ranges, the 9355 helps to reduce utility costs, extend battery runtimes and produce cooler operating conditions.

In addition, Eaton's use of sustainable materials and highly efficient manufacturing technology results in dramatic savings in carbon footprint as compared to competitive UPS products.

Maximum runtime, minimum footprint

The 9355 UPS provides industry-leading power density and a 75 percent footprint reduction versus comparable UPS solutions. All standard 9355 configurations incorporate internal batteries to provide up to 350 percent more runtime and offer 13 percent more capacity at equivalent VA ratings. Extended runtime allows the 9355 to power this extra capacity nearly four times longer without additional hardware, eliminating the need for costly and space-consuming external battery cabinets.

Standard 10 kVA and 20 kVA capacity models can also be upgraded to 15 kVA and 30 kVA, respectively, providing 50 percent more power with no additional hardware and no increase in footprint.

The 9355's small footprint requires only three to six square feet of floor space, enabling easy data center space-planning and preserving valuable raised-floor real estate.

Industry-leading scalability and redundancy

Today's critical applications require redundancy for ultimate reliability—and the 9355 delivers. Eaton's innovative Hot Sync technology and optional maintenance bypass parallel tie cabinet work together with the 9355 to provide an advanced, cost-effective UPS paralleling system.

The patented Hot Sync technology enables system load sharing, allowing any UPS module in the system to serve as a backup for any other module. Hot Sync's wireless paralleling capability also ensures system stability in the event of a communications failure.

Using a wall-mounted maintenance bypass parallel tie cabinet, data center managers can easily parallel up to four 9355 UPSs for either redundancy or capacity. UPSs can be quickly added to the pre-installed parallel tie cabinet and brought online in minutes, and individual UPSs can be isolated and swapped out for maintenance—significantly reducing installation and maintenance expenses.

Most other paralleling systems on the market use a top-down configuration in which the master fails when any subsidiary module fails. With Eaton's unique approach, each UPS is independent, yet synchronized with the others to prevent any single point of failure and help eliminate costly downtime.

Additional paralleling benefits include:

- Scalability, from 10 to 120 kVA using one parallel tie cabinet
- N+3, N+2 or N+1 redundancy, from 10 to 90 kVA in a compact footprint—often in a smaller footprint than a single large UPS
- Redundant battery systems, with each parallel UPS containing its own internal batteries



Up to four 9355 UPSs can be paralleled for capacity or redundancy—often in a smaller footprint than a single large UPS

Parallel tie cabinet



Front



Rear

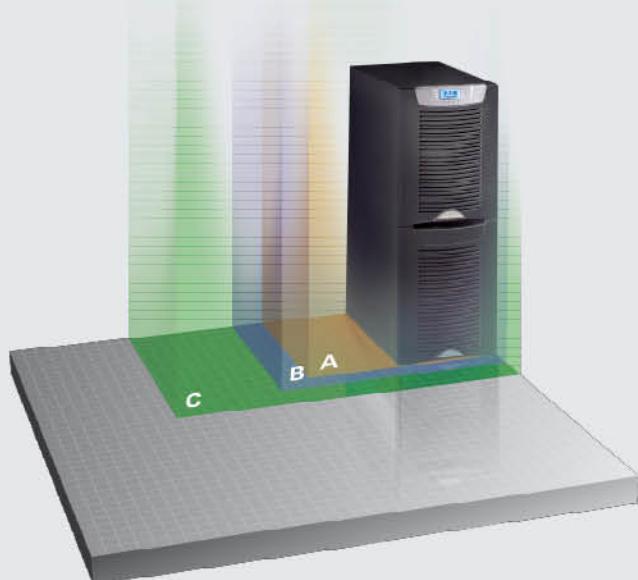
10 and 15 kVA Configurations

At 15 kVA, the 9355 occupies
70% less footprint
than competitor C

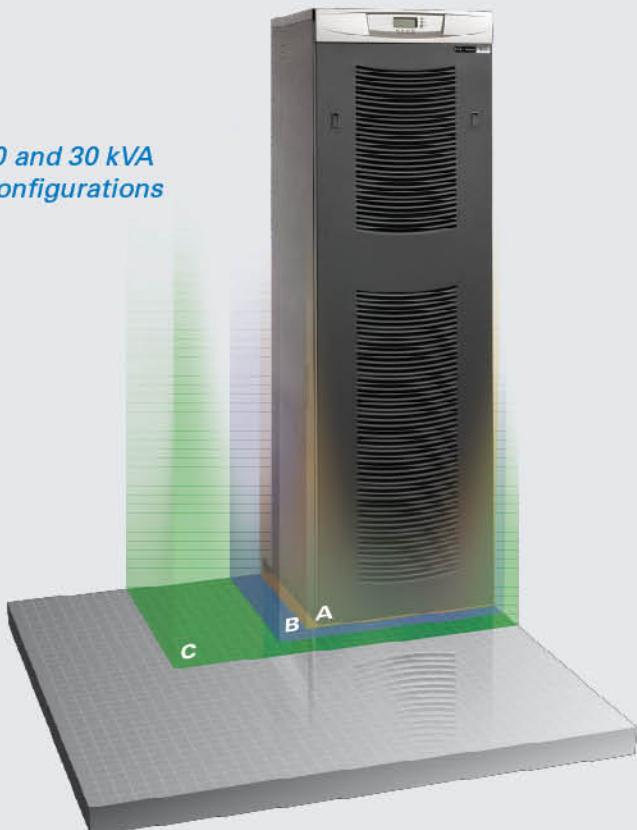
20 and 30 kVA Configurations

At 20 kVA, the 9355 occupies
48% less footprint
and delivers over three times
the battery runtime

10 and 15 kVA
Configurations



20 and 30 kVA
Configurations



	Dimensions (inches)			Footprint (square inches)	Battery Runtime (minutes)	
	W	D	H		10 kVA	15 kVA

9355	12	34	32	408	9	5
Competitor A	21	33	59	693	5	5
Competitor B	24	36	82	864	5	5
Competitor C	33	40	63	1320	5	5

	Dimensions (inches)			Footprint (square inches)	Battery Runtime (minutes)	
	W	D	H		20 kVA	30 kVA

9355	20	34	66	680	18	11
Competitor A	21	33	59	693	5	5
Competitor B	24	36	82	864	5	5
Competitor C	33	40	63	1320	5	5

Flexible, integrated power distribution

An on-board power distribution module (PDM) gives the 9355 the flexibility necessary to adapt to the diverse and continually changing data center environment. This integrated PDM allows data center managers to preserve valuable rack space and reduce heat by feeding nine to 100 kW of rack servers from one 9355 UPS.

The PDM can be configured to feature a user-selectable mix of NEMA and IEC output receptacles, helping to reduce site preparation and installation costs. These high-density, high-amperage receptacles support blade servers, network switches and other power-hungry IT equipment.

The PDM's circuits are clearly labeled to simplify load balancing while branch circuit breakers provide branch circuit protection and on/off operation for groups of receptacles. Other features include a maintenance bypass switch that allows the data center manager to service the 9355 without shutting down the connected loads to increase availability, reduce mean time to repair and maintenance costs, and lower total cost of ownership.

Simplified rack-based power distribution options

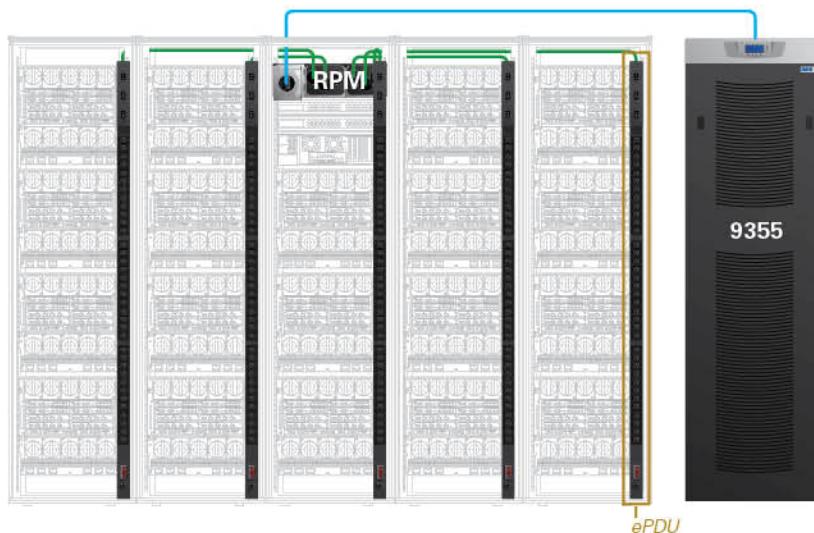
The 9355's on-board power distribution module is compatible with Eaton's optional rack power modules (RPM) and enclosure power distribution units, providing maximum flexibility in distributing power throughout the facility or data center. The RPM and ePDU enable primary power distribution from the 9355 to secondary power distribution devices or directly to IT equipment, for organized power distribution with fewer cables to manage and fewer distribution points to monitor.

Both solutions deliver power to loads of various voltages and can be configured to include user-selectable combinations of NEMA, IEC and hardwired inputs, and NEMA and IEC output receptacles.

ePDUs are available in space-saving 0U-vertical and 1U-horizontal configurations making the ePDU ideal for high-density rack environments.

ePDUs allow users to meter, monitor, switch, sequence and manage branches or individual outlets.

Eaton RPMs and ePDUs simplify power distribution by reducing the number of cables to manage and distribution points to monitor



ePDUs



Rack power module
(front and rear view)



Integrated power distribution module

Options & service

Additional 9355 options

Options cabinets

For maximum flexibility, Eaton offers four options cabinet models for the following applications:

- Options cabinet with a maintenance bypass switch (MBS) that provides wrap-around bypass for UPS maintenance or service without shutting down the load
- Options cabinet with both MBS and input isolation transformer that allows operation from a 208V, 480V, or 600V 60-Hz source (input transformer in single-feed systems or bypass transformer in dual-feed systems)
- Options cabinet for dual-feed systems that provides a second input from a 208V, 480V, or 600V 60-Hz source
- Options cabinet with an output isolation transformer for 480V loads

Wall-mount maintenance bypass panels

Eaton offers a comprehensive line of optional wall-mounted maintenance bypass panels compatible with the 9355 UPS. The wall-mounted bypass panel is used to bypass the UPS during maintenance or servicing, providing wrap-around bypass for UPS service without shutting down the load. And for more flexible power distribution, these maintenance bypass panels can be equipped with surge protection and provisions for 36 poles of distribution utilizing Eaton's Cutler-Hammer® breakers.

Proven warranty and support services

Customers consistently rank Eaton services number one in quality. Eaton's comprehensive, world-class service solutions are designed to improve costs, uptime, reliability, power quality and safety. And with 240 customer service engineers in North America and 1,200 international authorized service providers, Eaton has more service personnel than any other UPS manufacturer.

The standard factory warranty covers:

- System warranty: One year parts / 90 days labor
- Battery warranty: Two years parts / 90 days labor

Extensive service options for enhanced reliability

For support beyond the warranty period, Eaton offers enhanced service options including onsite startup, corrective and preventive maintenance, battery solutions, training, remote monitoring and factory spare parts and upgrades. Customizable three-phase UPS services packages allow customers to select the plan that provides the right combination of system uptime, convenience and value.

Service Plans

Eaton 9355 UPS Service Plans	PowerTrust™ Value	ProActive	PowerTrust	PowerTrust Preferred	Flex Contracts
Parts and Labor for Electronics	●	●	●	●	
Parts and Labor for Batteries	○	○	○	○	
5x8 On-Site Corrective Maintenance	●				
7x24 On-Site Corrective Maintenance		●	●	●	
Next Business Day Response	●				
Eight-Hour Response		●	●	●	
Four-Hour Response		○	○	○	
Two-Hour Response		○	○	○	
5x8 UPS Preventive Maintenance Visit	One per year	○	One per year		
7x24 UPS Preventive Maintenance Visit	○	One per year	○	Two per year	
Battery Preventive Maintenance Visit	○	○	One per year	Two per year	
eNotify Remote Monitoring Service	●	●	●	●	
Discounted Spare Parts Kit, T&M, and Upgrades		30%	30%	30%	

● Included feature

○ Optional

Enhanced communication capabilities

The 9355 UPS is equipped with a variety of standard communications features for network connectivity and remote management applications, including:

- RS-232 serial port
- Two X-Slot® communication bays
- Relay output contacts
- Two programmable signal inputs
- Remote emergency power-off (REPO)

Easy network connectivity and monitoring

ConnectUPS-X card

The ConnectUPS-X Web/SNMP X-Slot card connects the 9355 directly to an Ethernet network and the Internet and enables graceful shutdown of multiple computers over the network. The ConnectUPS-X Web/SNMP also features a three-port switching hub.

Modbus® card

The Modbus card is an X-Slot device that allows continuous, real-time monitoring of the 9355 through a Building Management System (BMS) or industrial automation system.

Relay interface cards

The relay interface card for the X-Slot enables remote UPS shutdown and provides isolated dry contact Form-C relay outputs for utility failure, low battery, UPS alarm/OK, and on bypass.

Environmental Monitoring Probe

The environmental monitoring probe (EMP) works with the 9355 and ConnectUPS-X card to remotely monitor ambient temperature and relative humidity of the remote environment. The EMP can also be configured to provide status of two additional contact devices such as smoke detectors or open-door sensors.



ConnectUPS-X Web/
SNMP X-Slot card



Power Xpert Gateway
Card 2000

Power Xpert® Gateway Series cards

Power Xpert Gateway Series X-Slot cards provide Web-enabled, real-time monitoring of UPSs, PDUs and RPPs through standard onboard Web pages, Power Xpert software or third-party software.

Power Xpert meters

Power Xpert meters combine state-of-the-art technology with next-generation power diagnostics, data trending and performance benchmarking with a twist-and-click LCD display.

Centralized control and visibility

The 9355 UPS is shipped with the Eaton Software Suite CD. The software suite includes the following applications, as well as a user-friendly wizard to guide users through software selection and installation:

- LanSafe® power management software
- PowerVision® UPS performance analysis and monitoring software (30-day trial version)
- NetWatch network monitoring software

eNotify Remote Monitoring

Eaton's eNotify Remote Monitoring Service provides 24x7 real-time monitoring of the 9355 and battery systems and alerts both service technicians and the customer when a problem is detected. Proactive monitoring enables technical experts to respond immediately to more than 40 alarm conditions and, in many cases, resolve issues remotely with minimal or no downtime. Additional eNotify benefits include:

- One-way outbound status and event e-mails for security and reliability
- Fast diagnosis and notification of critical alarms
- Monthly customer reports including power event logs and overall UPS and battery health summaries



Modbus card



Relay Interface cards



Environmental
Monitoring Probe



LanSafe®



Foreseer



PowerVision

Model selection guide (10 and 15 kVA)

Power Rating (kVA/kW) ¹	Description	Input/Output Voltage	Part Number ²	Base Runtime	Dimensions (HxWxD, in.)	Weight (lb.) ³
10 / 9	2-high w/32 battery	208/208	KA1011100000010	8	32.2x12.0x33.5	373.0
10 / 9	3-high w/64 battery	208/208	KA1012100000010	22	47.8x12.0x33.5	609.0
10 / 9	2-high w/32 battery	220/220 ⁴	KA1011200000010	8	32.2x12.0x33.5	373.0
10 / 9	3-high w/64 battery	220/220 ⁴	KA1012200000010	22	47.8x12.0x33.5	609.0
10 / 9	3-high w/32 battery and input isolation transformer	480/208	KA1013400000010	8	47.8x12.0x33.5	577.0
10 / 9	3-high w/32 battery and input isolation transformer	600/208	KA1013600000010	8	47.8x12.0x33.5	577.0
15 / 13.5	2-high w/32 battery	208/208	KA1511100000010	4	32.2x12.0x33.5	373.0
15 / 13.5	3-high w/64 battery	208/208	KA1512100000010	13	47.8x12.0x33.5	609.0
15 / 13.5	2-high w/32 battery	220/220 ⁴	KA1511200000010	4	32.2x12.0x33.5	373.0
15 / 13.5	3-high w/64 battery	220/220 ⁴	KA1512200000010	13	47.8x12.0x33.5	609.0
15 / 13.5	3-high w/32 battery and input isolation transformer	480/208	KA1513400000010	4	47.8x12.0x33.5	577.0
15 / 13.5	3-high w/32 battery and input isolation transformer	600/208	KA1513600000010	4	47.8x12.0x33.5	577.0

1. 50/60 Hz auto-sensing.
 2. An input neutral is required for all configurations unless the input isolation transformer is used. For parallel systems, change the fifth configure-to-order (CTO) digit to a 2 and include parallel tie cabinet.
 3. Add 47 lb. for two-high configurations or 50 lb. for three-high configurations to determine shipping weight.
 4. 220V units are wye connected 220/127V input and 220/127V output, three-phase, four-wire plus ground.

Model selection guide (20 and 30 kVA)

Power Rating (kVA/kW) ¹	Input/Output Voltage	Feed	UPS Part Number ²	Options Cabinet(s)	Base Runtime ³	Dimensions (HxWxD, in.)	Weight (lb.) ⁴
20 / 18	208/208	Single	KB2013100000010	None	18	66.0 x 20.0 x 34.1	1160.0
20 / 18	208/208	Single ⁶	KB2013100000010	KBT001100000010 ⁵ KBT001100000010	18	66.0 x 40.0 x 34.1	1695.0
20 / 18	208/208	Dual ⁶	KB2013100000010	KBT002100000010 ⁵	18	66.0 x 60.0 x 34.1	2230.0
20 / 18	220/220 ⁷	Single	KB2013200000010	None	18	66.0 x 20.0 x 34.1	1160.0
20 / 18	480/208	Single	KB2013100000010	KBT001200000010 ⁵ KBT002200000010	18	66.0 x 40.0 x 34.1	1695.0
20 / 18	480/208	Dual	KB2013100000010	KBT001200000010 ⁵	18	66.0 x 60.0 x 34.1	2230.0
20 / 18	600/208	Single	KB2013100000010	KBT001300000010 KBT001300000010 ⁵	18	66.0 x 40.0 x 34.1	1695.0
20 / 18	600/208	Dual	KB2013100000010	KBT002300000010 KBT001200000010 ⁵	18	66.0 x 60.0 x 34.1	2230.0
20 / 18	480/480	Single	KB2013100000010	KBT003200000010	18	66.0 x 60.0 x 34.1	2230.0
30 / 27	208/208	Single	KB3013100000010	None	11	66.0 x 20.0 x 34.1	1160.0
30 / 27	208/208	Single ⁶	KB3013100000010	KBT001100000010 ⁵ KBT001100000010 ⁵	11	66.0 x 20.0 x 34.1	1695.0
30 / 27	208/208	Dual ⁶	KB3013100000010	KBT002100000010	11	66.0 x 60.0 x 34.1	2230.0
30 / 27	220/220 ⁷	Single	KB3013200000010	None	11	66.0 x 20.0 x 34.1	1160.0
30 / 27	480/208	Single	KB3013100000010	KBT001200000010 ⁵ KBT001200000010 ⁵	11	66.0 x 40.0 x 34.1	1695.0
30 / 27	480/208	Dual	KB3013100000010	KBT002200000010	11	66.0 x 60.0 x 34.1	2230.0
30 / 27	600/208	Single	KB3013100000010	KBT001300000010 KBT001300000010 ⁵	11	66.0 x 40.0 x 34.1	1695.0
30 / 27	600/208	Dual	KB3013100000010	KBT002300000010 KBT001200000010 ⁵	11	66.0 x 60.0 x 34.1	2230.0
30 / 27	480/480	Dual	KB3013100000010	KBT003200000010	11	66.0 x 60.0 x 34.1	2230.0

1. 50/60 Hz auto-sensing.
 2. An input neutral is required for all configurations unless the input isolation transformer is used. For parallel systems, change the fifth CTO digit to a 2 and include parallel tie cabinet.
 3. All models include internal batteries.
 4. Add 50 lb. to determine shipping weight.
 5. Contains on-board maintenance bypass.
 6. With isolation transformer.
 7. 220V units are wye connected 220/127V input and 220/127V output, three-phase, four-wire plus ground.

Battery backup times (in minutes)

10-15 kVA backup times

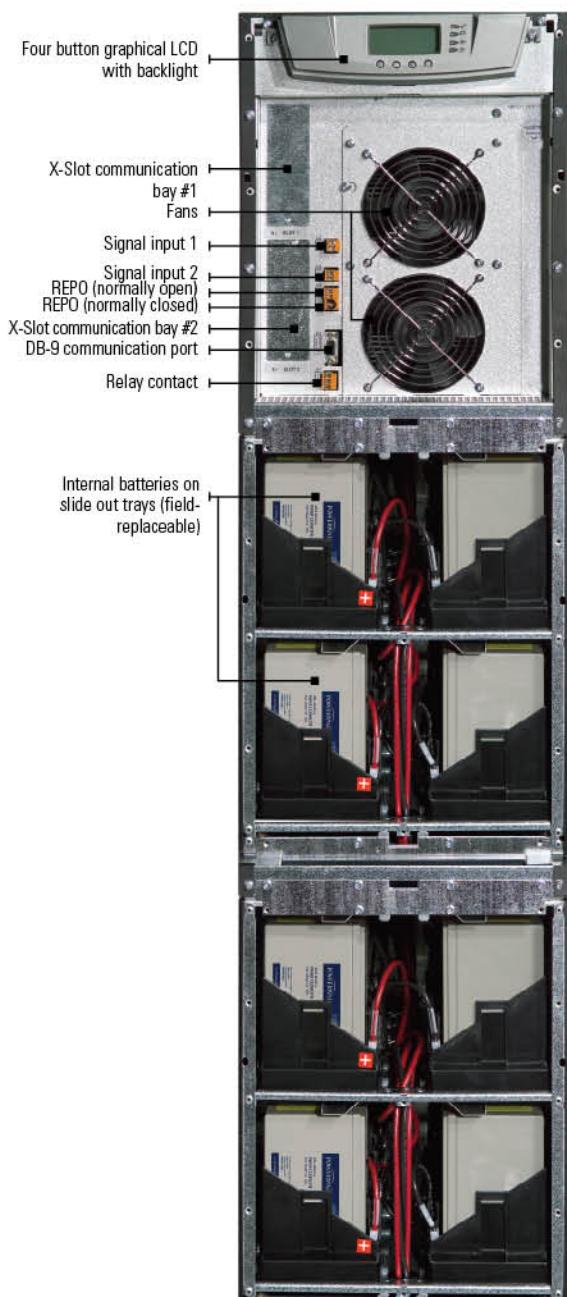
VA	Watt	UPS + Internal 32 Battery	(1) EBM 64	(2) EBM 64	(3) EBM 64	(4) EBM 64	UPS + Internal 64 Battery	(1) EBM 96	(2) EBM 96	(3) EBM 96
			64	64	64	64		96	96	96
15000	13500	5	23	43	65	89	13	43	77	113
14500	13050	5	24	45	68	93	14	45	81	119
14000	12600	5	25	47	72	97	15	47	84	125
13500	12150	6	26	49	75	102	16	49	88	130
13000	11700	6	28	52	78	106	17	52	92	136
12500	11250	6	29	54	82	111	18	54	96	142
12000	10800	7	30	57	86	116	19	57	101	149
11500	10350	7	32	59	90	122	19	59	106	156
11000	9900	7	33	62	94	129	20	62	111	164
10500	9450	8	35	66	100	136	21	66	117	174
10000	9000	8	37	70	106	144	23	70	124	184
9500	8550	9	40	74	112	153	24	74	132	196
9000	8100	10	42	79	120	163	26	79	141	209
8500	7650	11	46	85	129	175	28	85	152	225
8000	7200	12	49	92	139	189	30	92	164	242
7500	6750	13	53	100	151	205	32	100	178	263
7000	6300	15	58	109	164	224	35	109	194	286
6500	5850	16	64	119	180	245	39	119	212	314
6000	5400	18	70	131	198	270	43	131	234	346
5500	4950	20	78	145	220	300	47	145	259	383
5000	4500	22	87	162	245	334	53	162	289	428
4500	4050	25	97	182	276	376	59	182	325	-
4000	3600	29	110	207	313	426	67	207	369	-
3500	3150	33	127	238	359	-	77	238	423	-
3000	2700	38	148	277	418	-	90	277	-	-
2500	2250	46	176	329	-	-	107	329	-	-

20-30 kVA backup times

VA	Watt	UPS + Internal 1 Battery	Internal Battery + EBC - 36		Internal Battery + (1) EBC - 72	Internal Battery + (2) EBC-72
			11	31		
30000	27000	11	31	56	89	89
29000	26100	11	33	58	90	90
28000	25200	12	35	60	93	93
27000	24300	12	38	62	95	95
26000	23400	13	40	65	98	98
25000	22500	14	43	68	101	101
24000	21600	14	46	71	103	103
23000	20700	15	48	74	106	106
22000	19800	16	51	76	109	109
21000	18900	17	53	79	111	111
20000	18000	18	56	82	114	114
19000	17100	19	58	85	117	117
18000	16200	20	62	88	120	120
17000	15300	22	66	92	130	130
16000	14400	24	71	96	142	142
15000	13500	26	75	101	154	154
14000	12600	28	79	105	166	166
13000	11700	31	84	110	178	178
12000	10800	35	88	114	201	201
11000	9900	38	94	119	256	256
10000	9000	42	101	134	251	251
7500	6750	58	117	188	347	347
5000	4500	90	188	294	543	543

Note: Backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc.

Technical Specifications for 10 and 15 kVA¹



Front view of three-high module with cover off

Power

Ratings (kVA/Watts)	10 kVA/9 kW and 15 kVA/13.5 kW at 0.9 power factor
Topology	Double conversion
Electrical input	
Nominal input voltage	208V/120V or 220V/127V three-phase 400V models also available
Input voltage range	-15%, +10% from nominal at 100% load without depleting battery
Operating frequency	50/60 Hz (45 to 65 Hz)
Input power factor	>0.99 typical, >0.96 frequency converter
Input current distortion	5% THD
Electrical output	
Nominal output voltage	208/120, 220/127 Vac
Output voltage regulation	±1% static; ±5% dynamic at 100% resistive load change, <1 ms response time
Efficiency	91%, typical
Heat dissipation (BTU/hr)	<p>10 kVA models: 3,798 @ 208V and 220V input 6,294 @ 480V and 600V (with input isolation transformer)</p> <p>15 kVA models: 5,122 @ 208V and 220V input 8,134 @ 480V and 600V (with input isolation transformer)</p>
Battery	
Battery type	9 Ah, sealed, lead-acid, maintenance-free
Battery runtime	See battery backup time chart
Battery replacement	Field-replaceable
Charger	Default is 3.4A per battery string. Charger current is configurable from 0.5A to 25A per string with an overall maximum of 34A (limited by input current)
Start-on-battery	Allows start of UPS without utility input
General	
Diagnostics	Full system self-test at startup
UPS bypass	Automatic on overload or UPS failure
Parallel for redundancy	Yes, using Powerware Hot Sync technology and capacity
Dimensions and weights	See model selection table
Overload (normal operation)	150% for 5 sec / 125% for 1 min (online), 110% for 10 min
Communications	
LCD display	Graphical LCD with blue backlight
LEDs	(4) LEDs for notice and alarm
Audible alarms	Yes
Communication ports	(1) RS-232, (1) relay contact, (1) REPO, (2) environmental input
Communication slots	(2) X-Slot communication bays
Power management software	Bundled Software Suite CD
Environmental	
Operating temperature	50–104°F (10–40°C), 45°C with 7.5% derating; Optimal battery performance: 77°F (25°C)
Storage temperature	32–77°F (0–25°C); Recommended battery storage: 59–77°F (15–25°C)
Relative humidity	0–95%, non-condensing
Audible noise	< 56 dBA at 1 meter (noiseless room) typical
Altitude	9,843 ft. (3000m) without derating
Certifications	
Safety certifications	IEC 62040-1-1, IEC 60950, EN 62040-1-1, UL 1778
EMC compliance	EN 50091-2 Class A
Quality	ISO 9001: 2000 and ISO 14001:1996
Markings	UL, cUL

1. Due to continuous product improvements, program specifications are subject to change without notice.

Technical Specifications for 20 and 30 kVA¹

Power

Ratings	20 kVA/18 kW and 30 kVA/27 kW at 0.9 power factor
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Topology	Double conversion
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Electrical input

Nominal input voltage	208V/120V, 220V/127V +10, -15% 480V/277V, 600V (480+600 with transformer) 400V models also available
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Operating frequency	50/60 Hz (45 to 65 Hz)
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Input power factor	0.99 typical
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Input current distortion	<5% THD
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Electrical output

Nominal output voltage	208/120, 220/120 Vac 480/227 with output transformer
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Output voltage regulation	±1% static; ±4% dynamic with 100% step load recovery within 1 ms response time
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Efficiency	91%, typical
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Heat dissipation (BTU/hr)	20 kVA models: 6,762 @ 208V and 220V input 10,450 @ 480V and 600V (with input isolation transformer) 30 kVA models: 9,220 @ 208V and 220V input 13,831 @ 480V and 600V (with input isolation transformer)
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Battery

Battery type	9 Ah, sealed, lead-acid, maintenance-free
Battery runtime	See battery backup time chart
Battery replacement	Field-replaceable
Charger	Default is 8A
Parallel for redundancy	Yes, using Powerware Hot Sync technology and capacity

General

Diagnostics	Full system self-test at startup
UPS bypass	Automatic on overload or UPS failure
Parallel for redundancy	Yes, using Powerware Hot Sync technology for redundancy and capacity
Dimensions and weights	See model selection table
Overload	150% for 5 sec / 125% for 1 min (online), 110% for 10 min

Communications

LCD display	Graphical LCD with blue backlight
LEDs	(4) LEDs for notice and alarm
Audible alarms	Yes
Communication ports	(1) RS-232, (1) relay contact, (1) REPO, (2) environmental input
Communication slot	(2) X-Slot communication bays
Power management software	Bundled Software Suite CD

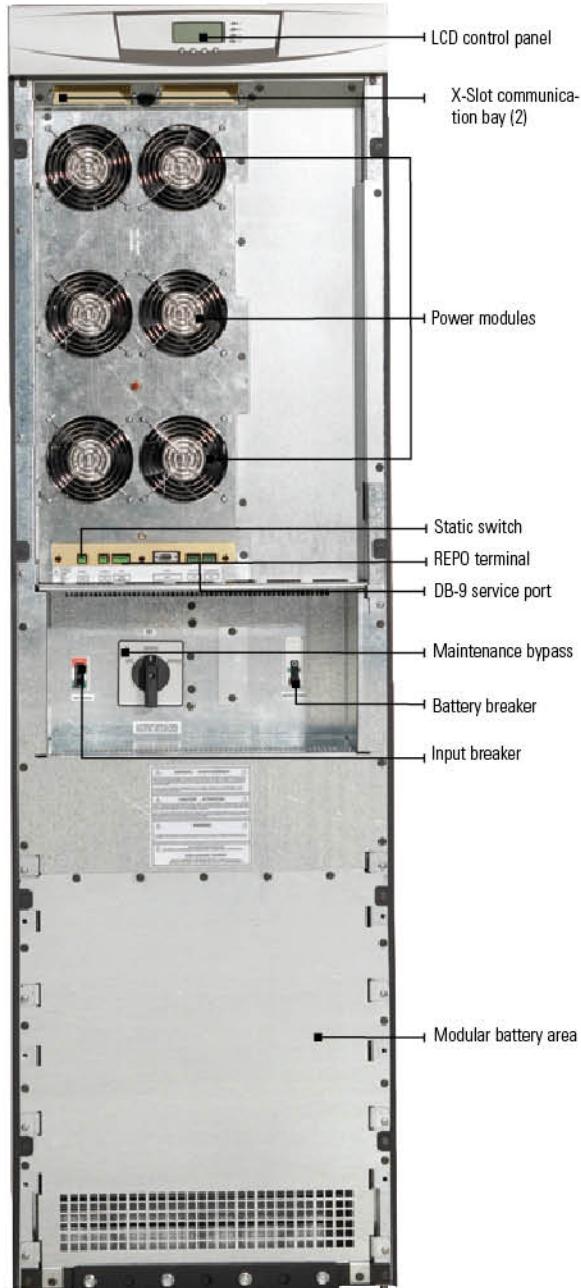
Environmental

Operating temperature	50–104°F (10–40°C), 45°C with 7.5% derating; Optimal battery performance: 77°F (25°C)
Storage temperature	32–77°F (0–25°C); Recommended battery storage: 59–77°F (15–25°C)
Relative humidity	0–95%, non-condensing
Audible noise	< 58 dBA at 1 meter depending on load
Altitude	<3000m

Certifications

Safety certifications	IEC 62040-1-1, IEC 60950, EN 62040-1-1, UL 1778, NOM-0190SCP8-1993
EMC compliance	EN 50091-2 Class A
Quality	ISO 9001: 2000 and ISO 14001:1996
Markings	UL, cUL, NOM-NYCE

1. Due to continuous product improvements, program specifications are subject to change without notice.



20/30 kVA UPS

Power Distribution Module with Mechanical Bypass Switch

(10 and 15 kVA Models)

NEMA Output Receptacle(s) ¹ Quantity	Breaker	Voltage (V)	Receptacle Code ²	Phase(s)	Enter "Receptacle Code" into CTO Digits #
(1) L15-30R	30A	208	2	3	9, 10 or 11 only
(1) L21-20R	20A	208/120	3	3	9, 10 or 11 only
(1) L21-30R	30A	208/120	4	3	9, 10 or 11 only
(2) 5-15R	15A	120	A	1	9,10,11,12
(2) 5-20R UL	20A	120	B	1	9,10,11,12
(2) 6-15R	15A	208	D	2	9,10,11,12
(2) 6-20R	20A	208	E	2	9,10,11,12
(2) L5-15R	15A	120	F	1	9,10,11,12
(1) L5-20R*	20A	120	G	1	9,10,11,12
(1) L5-30R*	30A	120	H	1	9,10,11,12
(2) L6-15R	15A	208	I	2	9,10,11,12
(1) L6-20R*	20A	208	J	2	9,10,11,12
(1) L6-30R*	30A	208	K	2	9,10,11,12
(1) L14-20R*	20A	120/208	L	2	9,10,11,12
(1) L14-30R*	30A	120/208	M	2	9,10,11,12
Blank Panel	N/A	N/A	X	N/A	9,10,11,12
(2) IEC 320 C13 (120V)	20A	120	N	1	9,10,11,12
(2) IEC 320 C19 (120V)	20A	120	P	1	9,10,11,12

1. The combined quantities of LOCKING receptacles (denoted by *) must not exceed four per unit.1. Arrange receptacle codes in numerical-alphabetical order in digits 9 through 12 of the CTO number. Example 1: A PDM with an L21-20, an L14-30, and Qty 2 IEC320-C19 would have digits 9 through 12 of the CTO arranged as "3MPP". Example 2: A PDM with a 5-15R, and an L6-30 and an L14-30 would have digits 9 through 12 of the CTO arranged as "AKMX". Please be sure utilize the 'X' designation for any of the four total slots not populated.

Options (10 and 15 kVA)

Description	Part Number	Input/Output Voltage (V)	Dimensions (H x W x D, inches)	Weight (lb)
Two-high line and match battery module (64 batteries)	103004192-5501	N/A	32.2 x 12 x 30.2	480
Three-high line and match battery module (96 batteries)	103004193-5501	N/A	47.8 x 12 x 30.2	710
Wall-mount parallel tie cabinet (2-Breaker MBP) ^{1,3}	124100020-001	N/A	36 x 20 x 5.8	68
Wall-mount Remote EPO Switch	103002939	N/A	4.5 x 4.5 x 4.5	3
Zone 4 Seismic Mounting Kit	103004194-5501	N/A	-	-
Remote monitor display panel ²	103002687-001	N/A	4.9 x 5.9 x 1.6	3
Spare parts kit	106711169	N/A	N/A	N/A
10 to15 kVA upgrade	103004657	N/A	N/A	N/A
Upgrade to a parallel UPS module				
three-breaker maintenance bypass panels	UP08N-PAR1	N/A	N/A	N/A
100A Bus, 200A Neutral, & 60A MBP, MIB, MIS ³	124100027-001	208/208	48 x 20 x 5.8	120
With integral 120 KA TVSS (100A Bus, 200A Neutral, and 60A MBP, MIB, MIS) ³	124100027-002	208/208	60 x 20 x 5.8	120
With 36-pole distribution provisions				
(Cutler-Hammer GHB 65 kAIC, or GBHW 22 kAIC and BAB 10 kAIC only) ³	124100027-003	208/208	72 x 20 x 5.8	210
With 36-pole distribution provisions and integrated TVSS				
(Cutler-Hammer GHB 65 kAIC, GBHW 22 kAIC and BAB 10 kAIC only) ³	124100027-004	208/208	90 x 20 x 5.8	225

1. 208V/208V input/output voltage. 225A bus, 200A neutral, (1) 225A MBP and (4) 80A MIS.

2. Requires Industrial Relay and Display Card. See X-Slot Connectivity

3. Add 40 lb. for shipping weight of panels and 50 lb. for panels with panelboard provisions.

Options (20 and 30 kVA)

Description	Part Number	Input/Output Voltage (V)	Dimensions (H x W x D, inches)	Weight (lb)
Two-string line and match battery cabinet (36 batteries)	103005183	N/A	66.0 x 20.0 x 34.1	1105
Four-string line and match battery cabinet (72 batteries)	103004868	N/A	66.0 x 20.0 x 34.1	2060
Option cabinet containing maintenance bypass (no transformer)	KBT000000000010	208/208	67.0 x 20.0 x 34.1	205
Wall-mount parallel tie cabinet (two-breaker MBP) ^{1,3}	124100026-001	208/208	48.0 x 20.0 x 5.8	150
Remote monitor display panel ²	103002687-001	N/A	N/A	N/A
Remote EPO switch (wall mounted)	103002939	N/A	N/A	N/A
Zone 4 seismic kit	103004896	N/A	N/A	N/A
Spare parts kit	106711170	N/A	N/A	N/A
20 to 30 kVA upgrade	103004901	N/A	N/A	N/A
Upgrade to a parallel UPS module	UP08N-PAR	N/A	N/A	N/A
Three-breaker maintenance bypass panels				
225A Bus, 200A Neutral and 125A MBP, 110A MIB, 110A MIS ³	124100028-001	208/208	48.0 x 20.0 x 5.8	120
With integral 120 KA TVSS				
(100A Bus, 200A Neutral and 60A MBP, MIB, MIS) ³	124100028-002	208/208	60.0 x 20.0 x 5.8	120
With 36-pole distribution provisions (Cutler-Hammer GHB 65 kAIC, or GBHW 22 kAIC and BAB 10 kAIC only) ³	124100028-003	208/208	72.0 x 20.0 x 5.8	210
With 36-pole distribution provisions and integrated TVSS (Cutler-Hammer GHB 65 kAIC, GBHW 22 kAIC and BAB 10 kAIC only) ³	124100028-004	208/208	90.0 x 20.0 x 5.8	225

1. 400A Bus, 200A Neutral, (1) 350A MBP and (4) 110A MIS.
2. Requires Industrial Relay and Display Card. See X-Slot Connectivity Options table.
3. Add 40 lb. for shipping weight of panels and 50 lb. for panels with panelboard provisions.

X-Slot Connectivity Options

Description ¹	Value for CTO Digit 8	Part Number (if ordered separately)
None (No Pre-installed X-Slot card)	0	—
ConnectUPS-X Web/SNMP/xHub Card	3	116750221-001
Modem Card	7	05146288-5501
Modbus Card	4	103005425-5591
Relay Card (AS/400 compatible)	5	1018460
Industrial Relay and Display Card ²	6	103003055
CAN Bridge Parallel Card	N/A	103004336

1. The UPS has two X-Slots. One card can be factory installed while the second X-Slot card can be purchased separately.
2. 5A @ 250V. Provides (4) form-C relay contacts for integrating UPS alarms into security and alarm systems. Also provides signal information for the Remote Monitor Display Panel (part number 103002687-001).



Options cabinet

RPM Configurations for 9355

Part Number	Input Cable	Receptacle 1	Receptacle 2	Metering
Y03100011100000	Hardwired Input	L21-20 (2)	L21-20 (2)	Local Power Meter
Y03100022100000	Hardwired Input	L21-30 (2)	L21-30 (2)	Local Power Meter
Y03100055100000	Hardwired Input	L6-30 (3)	L6-30 (3)	Local Power Meter
Y03100047100000	Hardwired Input	L6-20 (3)	5-20 (6)	Local Power Meter
Y03100017100000	Hardwired Input	L21-20 (2)	5-20 (6)	Local Power Meter
Y031000FF100000	Hardwired Input	L15-30 (2)	L15-30 (2)	Local Power Meter
Y301000BB100000	Hardwired Input	IEC320-C19 (6)	IEC320-C19 (6)	Local Power Meter



Wall-mount maintenance bypass panel