

Powerware series

10-30 kVA

# Eaton 9355 UPS

Scalable. Compact. Flexible.



*Powering Business Worldwide*

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# 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

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

# The Eaton advantage

## 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*

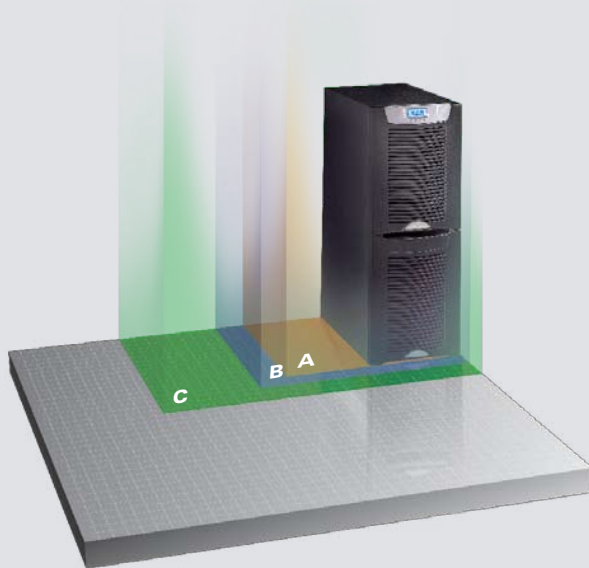
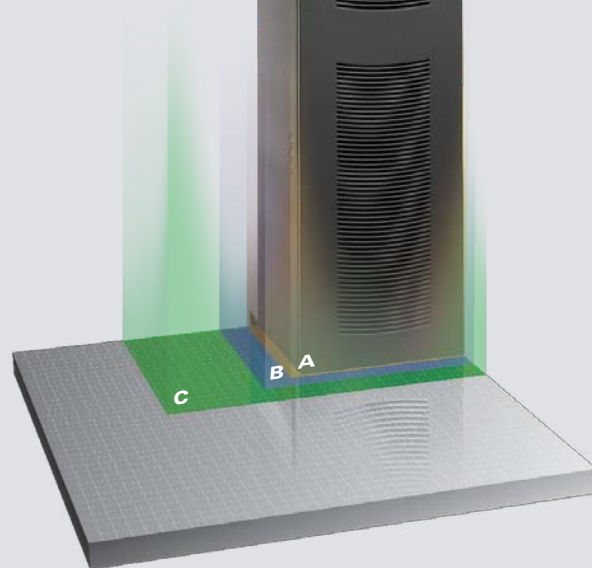


## 10 and 15 kVA Configurations

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  
Configurations20 and 30 kVA  
Configurations

|              | Dimensions<br>(inches) |    |    | Footprint<br>(square<br>inches) | Battery<br>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<br>(inches) |    |    | Footprint<br>(square<br>inches) | Battery<br>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      |

## Power distribution

### 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

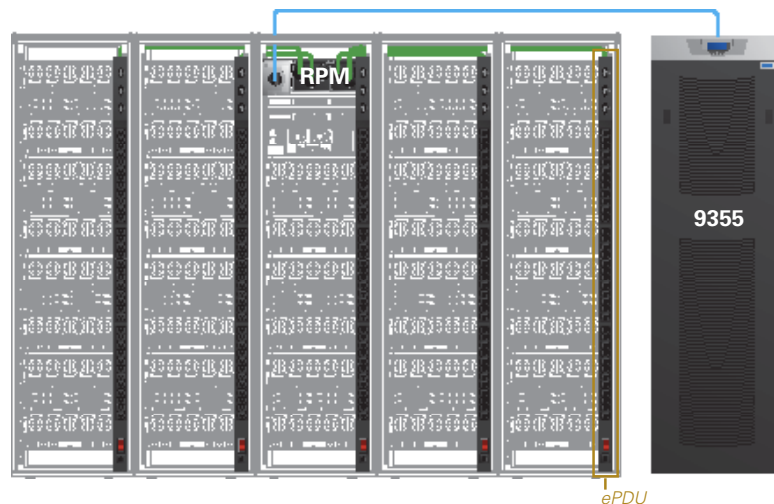
The 9355's on-board power distribution module is compatible with Eaton's optional rack power modules (RPM) and enclosure power distribution units, providing maximum flexibility in distributing power throughout the facility or data center. The RPM and ePDU enable primary power distribution from the 9355 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               | ●                 | ●            | ●            | ●                    | Custom Service Contracts |
| 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



## Connectivity & manageability

### 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.

#### 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



ConnectUPS-X Web/  
SNMP X-Slot card



Power Xpert Gateway  
Card 2000



Modbus card



Relay Interface cards



Environmental  
Monitoring Probe



LanSafe®



Foreseer



PowerVision

## Model selection guide (10 and 15 kVA)

| Power Rating<br>(kVA/kW) <sup>1</sup> | Description  | Input/Output<br>Voltage | Part Number <sup>2</sup> | Base<br>Runtime | Dimensions<br>(HxWxD, in.) | Weight<br>(lb.) <sup>3</sup> |
|---------------------------------------|--|-------------------------|--------------------------|-----------------|----------------------------|------------------------------|
| 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 <sup>4</sup>    | KA1011200000010          | 8               | 32.2x12.0x33.5             | 373.0                        |
| 10 / 9                                | 3-high w/64 battery                                    | 220/220 <sup>4</sup>    | KA1012200000010          | 22              | 47.8x12.0x33.5             | 609.0                        |
| 10 / 9                                | 3-high w/32 battery and<br>input isolation transformer | 480/208                 | KA1013400000010          | 8               | 47.8x12.0x33.5             | 577.0                        |
| 10 / 9                                | 3-high w/32 battery and<br>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 <sup>4</sup>    | KA1511200000010          | 4               | 32.2x12.0x33.5             | 373.0                        |
| 15 / 13.5                             | 3-high w/64 battery                                    | 220/220 <sup>4</sup>    | KA1512200000010          | 13              | 47.8x12.0x33.5             | 609.0                        |
| 15 / 13.5                             | 3-high w/32 battery and<br>input isolation transformer | 480/208                 | KA1513400000010          | 4               | 47.8x12.0x33.5             | 577.0                        |
| 15 / 13.5                             | 3-high w/32 battery and<br>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<br>(kVA/kW) <sup>1</sup> | Input/Output<br>Voltage | Feed                | UPS Part Number <sup>2</sup> | Options Cabinet(s)                              | Base<br>Runtime <sup>3</sup> | Dimensions<br>(HxWxD, in.) | Weight<br>(lb.) <sup>4</sup> |
|---------------------------------------|-------------------------|---------------------|------------------------------|---|------------------------------|----------------------------|------------------------------|
| 20 / 18                               | 208/208                 | Single              | KB2013100000010              | None  | 18                           | 66.0 x 20.0 x 34.1         | 1160.0                       |
| 20 / 18                               | 208/208                 | Single <sup>6</sup> | KB2013100000010              | KBT001100000010 <sup>5</sup>                    | 18                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 20 / 18                               | 208/208                 | Dual <sup>6</sup>   | KB2013100000010              | KBT001100000010<br>KBT002100000010 <sup>5</sup> | 18                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 20 / 18                               | 220/220 <sup>7</sup>    | Single              | KB2013200000010              | None  | 18                           | 66.0 x 20.0 x 34.1         | 1160.0                       |
| 20 / 18                               | 480/208                 | Single              | KB2013100000010              | KBT001200000010 <sup>5</sup>                    | 18                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 20 / 18                               | 480/208                 | Dual                | KB2013100000010              | KBT002200000010<br>KBT001200000010 <sup>5</sup> | 18                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 20 / 18                               | 600/208                 | Single              | KB2013100000010              | KBT001300000010                                 | 18                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 20 / 18                               | 600/208                 | Dual                | KB2013100000010              | KBT001300000010 <sup>5</sup><br>KBT002300000010 | 18                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 20 / 18                               | 480/480                 | Single              | KB2013100000010              | KBT001200000010 <sup>5</sup><br>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 <sup>6</sup> | KB3013100000010              | KBT001100000010 <sup>5</sup>                    | 11                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 30 / 27                               | 208/208                 | Dual <sup>6</sup>   | KB3013100000010              | KBT001100000010 <sup>5</sup><br>KBT002100000010 | 11                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 30 / 27                               | 220/220 <sup>7</sup>    | Single              | KB3013200000010              | None  | 11                           | 66.0 x 20.0 x 34.1         | 1160.0                       |
| 30 / 27                               | 480/208                 | Single              | KB3013100000010              | KBT001200000010 <sup>5</sup>                    | 11                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 30 / 27                               | 480/208                 | Dual                | KB3013100000010              | KBT001200000010 <sup>5</sup><br>KBT002200000010 | 11                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 30 / 27                               | 600/208                 | Single              | KB3013100000010              | KBT001300000010                                 | 11                           | 66.0 x 40.0 x 34.1         | 1695.0                       |
| 30 / 27                               | 600/208                 | Dual                | KB3013100000010              | KBT001300000010 <sup>5</sup><br>KBT002300000010 | 11                           | 66.0 x 60.0 x 34.1         | 2230.0                       |
| 30 / 27                               | 480/480                 | Dual                | KB3013100000010              | KBT001200000010 <sup>5</sup><br>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.

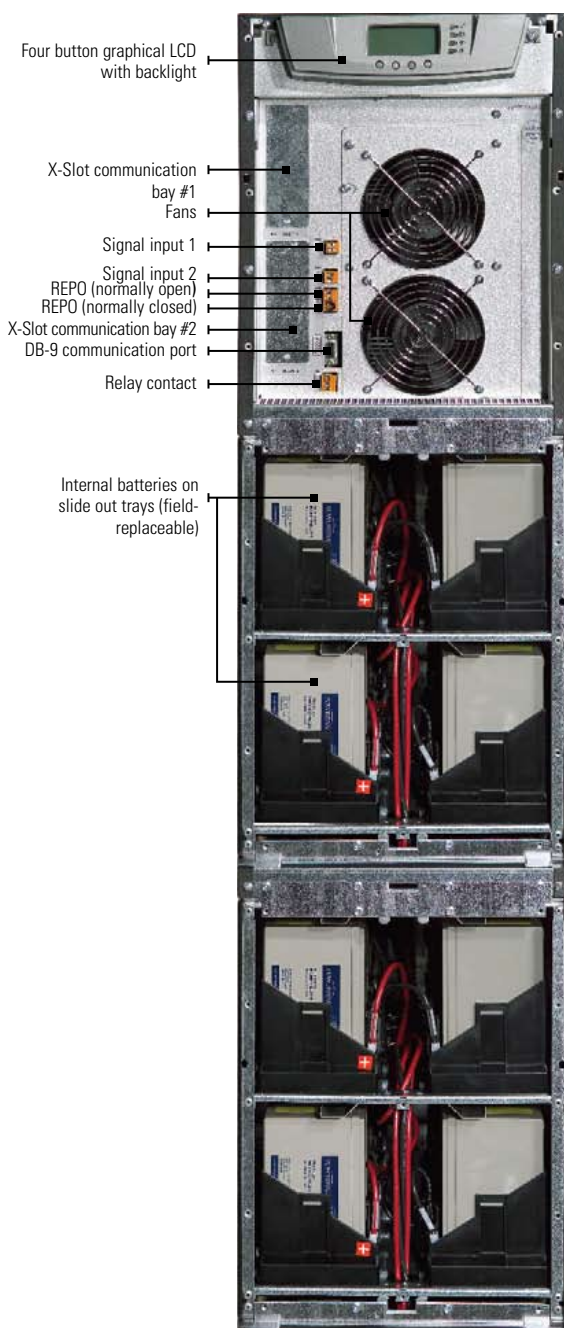
7. 220V units are wye connected 220/127V input and 220/127V output, three-phase, four-wire plus ground.

**Battery backup times (in minutes)**

| 10-15 kVA backup times |       |                                 |                  |                  |                  |                  |                                 |                  |                  |                  |
|------------------------|-------|---------------------------------|------------------|------------------|------------------|------------------|---------------------------------|------------------|------------------|------------------|
| VA                     | Watt  | UPS<br>+ Internal<br>32 Battery | (1)<br>EBM<br>64 | (2)<br>EBM<br>64 | (3)<br>EBM<br>64 | (4)<br>EBM<br>64 | UPS<br>+ Internal<br>64 Battery | (1)<br>EBM<br>96 | (2)<br>EBM<br>96 | (3)<br>EBM<br>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<br>+ Internal<br>1 Battery | Internal<br>Battery +<br>EBC - 36 | Internal<br>Battery<br>+ (1) EBC - 72 | Internal<br>Battery<br>+ (2) EBC-72 |
| 30000                  | 27000 | 11                             | 31                                | 56                                    | 89                                  |
| 29000                  | 26100 | 11                             | 33                                | 58                                    | 90                                  |
| 28000                  | 25200 | 12                             | 35                                | 60                                    | 93                                  |
| 27000                  | 24300 | 12                             | 38                                | 62                                    | 95                                  |
| 26000                  | 23400 | 13                             | 40                                | 65                                    | 98                                  |
| 25000                  | 22500 | 14                             | 43                                | 68                                    | 101                                 |
| 24000                  | 21600 | 14                             | 46                                | 71                                    | 103                                 |
| 23000                  | 20700 | 15                             | 48                                | 74                                    | 106                                 |
| 22000                  | 19800 | 16                             | 51                                | 76                                    | 109                                 |
| 21000                  | 18900 | 17                             | 53                                | 79                                    | 111                                 |
| 20000                  | 18000 | 18                             | 56                                | 82                                    | 114                                 |
| 19000                  | 17100 | 19                             | 58                                | 85                                    | 117                                 |
| 18000                  | 16200 | 20                             | 62                                | 88                                    | 120                                 |
| 17000                  | 15300 | 22                             | 66                                | 92                                    | 130                                 |
| 16000                  | 14400 | 24                             | 71                                | 96                                    | 142                                 |
| 15000                  | 13500 | 26                             | 75                                | 101                                   | 154                                 |
| 14000                  | 12600 | 28                             | 79                                | 105                                   | 166                                 |
| 13000                  | 11700 | 31                             | 84                                | 110                                   | 178                                 |
| 12000                  | 10800 | 35                             | 88                                | 114                                   | 201                                 |
| 11000                  | 9900  | 38                             | 94                                | 119                                   | 256                                 |
| 10000                  | 9000  | 42                             | 101                               | 134                                   | 251                                 |
| 7500                   | 6750  | 58                             | 117                               | 188                                   | 347                                 |
| 5000                   | 4500  | 90                             | 188                               | 294                                   | 543                                 |

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

Technical Specifications for 10 and 15 kVA<sup>1</sup>

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<br>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) | 10 kVA models:<br>3,798 @ 208V and 220V input<br>6,294 @ 480V and 600V (with input isolation transformer)<br>15 kVA models:<br>5,122 @ 208V and 220V input<br>8,134 @ 480V and 600V (with input isolation transformer) |

## 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 kVA<sup>1</sup>

### Power

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

### Electrical input

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

### Electrical output

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

### 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),<br>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,<br>(2) environmental input |
| Communication slot        | (2) X-Slot communication bays                                       |
| Power management software | Bundled Software Suite CD   |

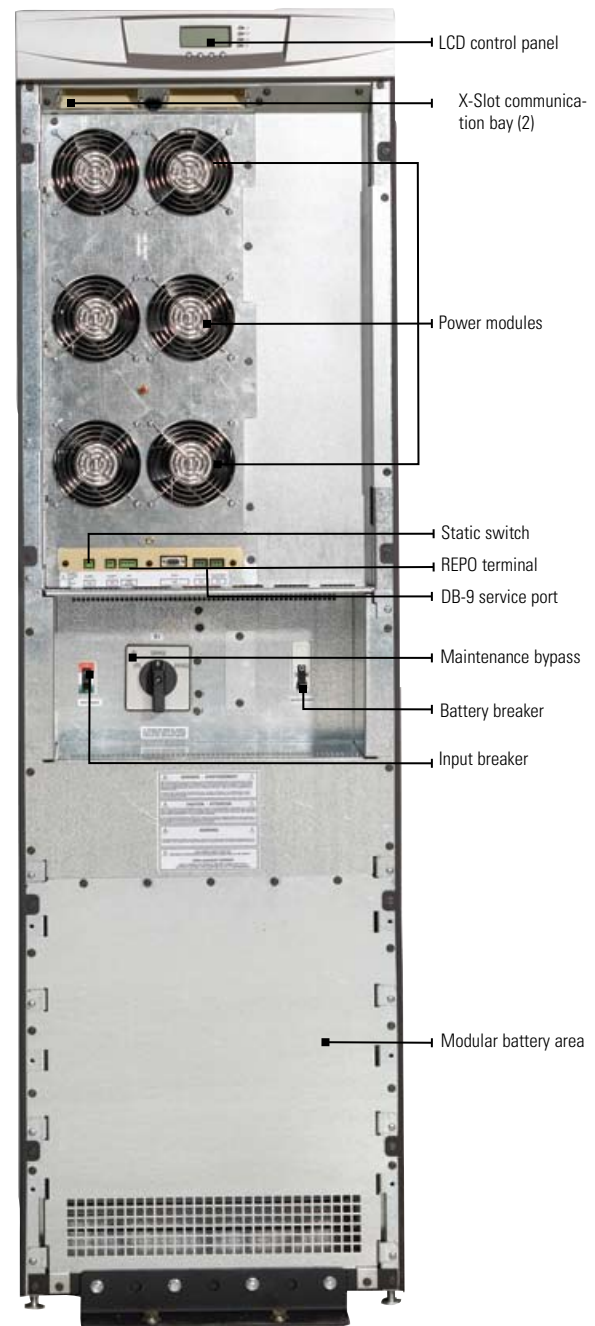
### Environmental

|                       |  |
|-----------------------|--|
| Operating temperature | 50–104°F (10–40°C), 45°C with 7.5% derating;<br>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) <sup>1</sup><br>Quantity | Breaker | Voltage (V) | Receptacle<br>Code <sup>2</sup> | Phase(s) | Enter "Receptacle Code"<br>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<br>Voltage (V) | Dimensions<br>(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) <sup>1, 3</sup>                        | 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 <sup>2</sup>  | 103002687-001  | N/A                         | 4.9 x 5.9 x 1.6                   | 3           |
| Spare parts kit  | 106711169      | N/A                         | N/A                               | N/A         |
| 10 to 15 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 <sup>3</sup>                               | 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) <sup>3</sup> | 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) <sup>3</sup>         | 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) <sup>3</sup>            | 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) <sup>1, 3</sup>     | 124100026-001   | 208/208                  | 48.0 x 20.0 x 5.8              | 150         |
| Remote monitor display panel <sup>2</sup>                             | 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         |
| <b>Three-breaker maintenance bypass panels</b>                        |                 |                          |                                |             |
| 225A Bus, 200A Neutral and 125A MBP, 110A MIB, 110A MIS) <sup>3</sup> | 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) <sup>3</sup>           | 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) <sup>3</sup>       | 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) <sup>3</sup>   | 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 <sup>1</sup>            | 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 Card2  | 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

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