Class A EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES-003

This Class A Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe A respecte toutes les exigences du Reglement sur le matériel brouilleur du Canada.

Requesting a Declaration of Conformity

Units that are labeled with a CE mark comply with the following harmonized standards and EU directives:

- Harmonized Standards: IEC 61000-3-12

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

Eaton Power Quality Oy
Koskelontie 13
FIN-02920 Espoo
Finland
Phone: +358-9-452 661
Fax: +358-9-452 665 68
Special Symbols
The following are examples of symbols used on the product to alert you to important information:

**RISK OF ELECTRIC SHOCK** - Indicates that a risk of electric shock is present and the associated warning should be observed.

**CAUTION: REFER TO OPERATOR’S MANUAL** - Refer to your operator’s manual for additional information, such as important operating and maintenance instructions.

This symbol indicates that you should not discard the product in the trash. This product must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.

This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.
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Chapter 1  Introduction

The Eaton® Powerware® Remote Power Panel (RPP) Generation 1 is designed to provide increased distribution capacity in a small, compact cabinet without the need for costly electrical rework. Providing outstanding performance and reliability, the RPP’s unique benefits include the following:

- 208V, 60 Hz power distribution unit, delivering up to 168 branch breakers in a compact footprint
- Standard top and bottom cable entry in a free-standing structure
- Easy installation and servicing with front access, spacious wireways, removable side panels, and hinged interior barriers and exterior doors
- Displays located on the exterior doors for ease of use
- Standard locking door latches with included key
- Backed by worldwide agency approvals

The following options for the RPP are available:

- Two or four Cutler-Hammer® 42-pole, three-phase panelboards (two front, two rear). Each panelboard is protected by a 225A or 400A three-pole main breaker.
- Standard or high Amps Interrupting Capacity (KAIC) input breakers:
  - Standard KAIC (65 kA at 208 Vac)
  - High KAIC (100 kA at 280 Vac)
- Input connection options:
  - Direct connection to each 225A or 400A panelboard main breaker (front and rear)
  - Connection into a main lug (up to 800A)
  - Connection into a main lug (400A), for front only
- Single-feed or dual-feed voltage sources (400A, 800A)
- Front and rear barrier plate for isolating dual source inputs
- Basic current and voltage monitoring on front and/or rear with the IQ 110 or IQ 230 meter
- Surge protection with Transient Voltage Surge Suppression (TVSS)
Figure 1 shows an RPP.

Figure 1. Powerware RPP Generation 1
Chapter 2

Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the Remote Power Panel (RPP). Please read all instructions before operating the equipment and save this manual for future reference.

The RPP is designed for industrial or computer room applications, and contains safety shields (interior barriers) behind the doors. However, the RPP system is a sophisticated power system and should be handled with appropriate care.

DANGER
The RPP contains LETHAL VOLTAGES. All repairs and service should be performed by AUTHORIZED SERVICE PERSONNEL ONLY. There are NO USER SERVICEABLE PARTS inside the RPP with the exception of adding and wiring branch circuit breakers.

WARNING
- To reduce the risk of fire or electric shock, install this RPP in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% maximum). The system is not intended for outdoor use.
- Ensure all power is disconnected before performing installation or service.

CAUTION
- Keep the RPP doors closed to ensure proper cooling airflow and to protect personnel from dangerous voltages inside the unit.
- Do not operate the RPP close to gas or electric heat sources.
- Locate the RPP on concrete or other non-combustible surface only.
- The operating environment should be maintained within the parameters stated in this manual.
- Keep surroundings uncluttered, clean, and free from excess moisture.
- Use leveling feet only for distributing the weight of the cabinet equally. Using the leveling feet to raise the cabinet may result in serious injury to personnel or damage to the cabinet.
- Observe all DANGER, CAUTION, and WARNING notices affixed to the inside and outside of the equipment.
Chapter 3 Installation

This section explains:

- Equipment inspection
- Unpacking the cabinet
- Checking the accessory kit
- Locating the cabinet
- Installation and wiring
- Initial startup
- Completing the installation checklist

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.
Unpacking the Cabinet

**CAUTION**

- Only qualified personnel should be permitted to perform any work associated with this equipment.
- Unpacking the cabinet in a low-temperature environment may cause condensation to occur in and on the cabinet. Do not install the cabinet until the inside and outside of the cabinet are absolutely dry (hazard of electric shock).
- The cabinet is heavy (see page 21). If unpacking instructions are not closely followed, the cabinet may tip and cause serious injury.
- Do not install a damaged cabinet. Report any damage to the carrier and contact your service representative immediately.

The cabinet is shipped bolted to a wooden pallet and protected with outer protective packing material. Do not remove protective packaging until the equipment is ready for installation. Do not loosen the cabinet from the pallet until all forklift handling is complete.

To unpack the cabinet:

1. Carefully inspect the outer packaging for evidence of damage during transit.
2. Use a forklift or pallet jack to move the packaged cabinet to the installation site, or as close as possible, before unpacking. Insert the forklift or pallet jack’s forks between the pallet supports on the bottom of the unit.

**NOTE** Verify that the forklift or pallet jack is rated to handle the weight of the cabinet (see page 21 for cabinet weight).

3. Set the pallet on a firm, level surface, allowing a minimum clearance of 3m (10 ft) on each side for removing the cabinet from the pallet.
4. Remove the protective outer packaging from the cabinet.
5. Discard or recycle the packaging in a responsible manner, or store it for future use.
6. Using a wrench, remove the two metal angle brackets at the base of the cabinet.
7. Using a wrench, remove both front and back kick plates.
8. Use the forklift or pallet jack to carefully lift the cabinet off the pallet and place it on the floor so that it is resting on its casters.

**CAUTION**

- The cabinet may roll when resting on its casters. Take proper care to secure the cabinet and ensure the safety of personnel.
- When the leveling feet are up and the cabinet is supported by casters only, do not stand on or in the cabinet. The cabinet may tip, which may result in serious injury. Do not work on or in the cabinet until the leveling feet are in place.
Checking the Accessory Kit

Verify that the following items are included inside the Remote Power Panel (RPP) cabinet:

- Key to the lockable doors.
  (Optional) After the RPP is installed, lock the cabinet to prevent unauthorized entry.
- This user’s guide.

Locating the Cabinet

Follow these guidelines when locating the cabinet after unpacking:

- Place the cabinet on a concrete or other non-combustible surface in a protected area that has adequate airflow, access to a 120V service outlet, and is free of humidity, flammable gas, and corrosion.
- Avoid placing the cabinet on its side.

To locate the cabinet:

1. Verify that the final location for the cabinet has the following clearances. Check your local codes and regulations for other recommended clearances.

<table>
<thead>
<tr>
<th>Cabinet Area</th>
<th>Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>A minimum of 460 mm (18”) for the exit of cables and conduit and for ventilation</td>
</tr>
<tr>
<td>Below</td>
<td>A minimum of 150 mm (6”) for the exit of cables and conduit and for ventilation</td>
</tr>
<tr>
<td></td>
<td>This clearance can be provided by a raised floor.</td>
</tr>
<tr>
<td>Front</td>
<td>910 mm (36”) for access</td>
</tr>
<tr>
<td>Back</td>
<td>One door: none required</td>
</tr>
<tr>
<td></td>
<td>Two doors: 910 mm (36”) for access</td>
</tr>
<tr>
<td>Sides</td>
<td>None required; 38 mm (1.5”) allows the doors to open past 90 degrees for easier access to breakers</td>
</tr>
</tbody>
</table>

2. Verify that the cabinet does not exceed your floor loading capacity. See Table 6 on page 21 for cabinet weight and dimensions.

3. Verify that the location meets the environmental requirements listed in Table 10 on page 22.
4. Plan the cable and conduit access to the cabinet:

Both the top and bottom of the cabinet have entry plates for cable connection. The entry plates are interchangeable and held in place with .25-20 screws. Some plates are blank; some have knockouts.

To avoid congestion and allow for future load increases, use the knockouts toward the back of the cabinet first.

Do not run power cables in the vicinity of any control wiring. Leave a minimum of 25.4 mm (1”) clearance between the power cable and control wires.

5. Install a cutout in the floor as needed, using the template shown in Figure 2.

![Figure 2. RPP Bottom View (Cabinet with Two Doors Shown)](image)

6. Roll the cabinet to its final position, carefully positioning the cabinet over the cutout in the floor.

7. Lower each leveling foot until it makes firm contact with the floor. The cabinet is now stable and in place.

8. Rearrange or remove the entry plates at the top or bottom of the cabinet as needed.
Installing the RPP

This section explains wiring installation for the RPP.

Removing the Doors, Side Panels, and Interior Barriers

The RPP has lockable exterior doors, side panels, and interior barriers that protect the panelboards, main breakers, and subfeed breakers. The doors, panels, and barriers can be removed for ease of installation and maintenance.

NOTE The number of doors and barriers varies depending on the RPP configuration.

To remove the exterior doors, side panels, and interior barriers before wiring:

1. Open the exterior doors.
   - To open a door, pull out the bottom portion of the handle and turn in either direction.

2. Remove the exterior doors.
   - To remove a door, remove its hinge pin and retain. Lift the door off the hinge.
   - Place the doors in a safe area away from the cabinet to prevent injury or damage to the RPP or personnel. Store the hinge pins in a safe location for later use.

3. Remove the side panels.
   - To remove a panel, loosen the eight bolts along the sides of the panel.
   - Place the side panels in a safe area away from the cabinet to prevent injury or damage to the RPP or personnel.

4. Disconnect the ground strap from each interior barrier.
5. Remove the interior barriers.

To remove a barrier, push and turn each of the two 1/4-turn fasteners so that the arrow on its head points up. Swing the barrier open. Squeeze the upper and lower levers on each hinge together (see Figure 3), turn the levers inward, release and lock them in place. Pull the barrier toward you.

Place the barriers in a safe area away from the cabinet to prevent injury or damage to the RPP or personnel.

Figure 3. Unfastening an Interior Barrier
Wiring Input and Output Power

**WARNING**

Only qualified service personnel (such as a licensed electrician) shall perform the electrical installation. Risk of electrical shock.

**NOTE** Installation of the RPP must comply with the requirements of ANSI/NFPA 75 and NEC Article 645 when installed within a computer room.

**NOTE** All wiring must conform to national and local codes. Provide sufficient room for routing all power cables. Route all signal cables separately from power cables.

To wire input and output power to the RPP:

1. Turn off utility power at the distribution point where the RPP will be connected. Be absolutely sure there is no power.
2. Verify that all circuit breakers are in the OFF (O) position. For layout, see Figure 4.
3. Connect a dedicated feeder to provide the three-phase input power to the RPP according to Table 1 and Table 2.

Neutral wiring is located behind the breakers. For ease of installation, wire the Neutral first.

### Table 1. Main Input Feed Conductor Coding

<table>
<thead>
<tr>
<th>Conductor</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase A</td>
<td>A</td>
</tr>
<tr>
<td>Phase B</td>
<td>B</td>
</tr>
<tr>
<td>Phase C</td>
<td>C</td>
</tr>
<tr>
<td>Ground (4W+G)</td>
<td>Green (or Ground Symbol)</td>
</tr>
<tr>
<td>Neutral</td>
<td>White (or N)</td>
</tr>
</tbody>
</table>

### Table 2. Conductor Sizing

<table>
<thead>
<tr>
<th>Input Volts</th>
<th>Input Current</th>
<th>Main Breaker</th>
<th>Wire Rating*</th>
</tr>
</thead>
<tbody>
<tr>
<td>208V</td>
<td>180A</td>
<td>225A</td>
<td>107 mm² (4/0 AWG)</td>
</tr>
<tr>
<td>208V</td>
<td>320A</td>
<td>400A</td>
<td>2 × 80 mm² (2 × 3/0 AWG)</td>
</tr>
</tbody>
</table>

* Wire sizes based on NEC 1996 Table 310-16 using 75°C copper conductors.
Figure 4. RPP Layout (Meter and Dual Source Options Shown)
4. Connect the output power to the 42-pole circuit breaker panelboards according to the branch circuit breaker manufacturer’s ratings and instructions, Figure 5, and Table 3. For each pole, install the customer-supplied branch circuit breaker and wire the breaker, ground, and neutral wires. Balance the loads.

Compatible branch circuit breakers are 1-pole 10A–60A, 2-pole 10A–60A, and 3-pole 15A–60A. Breakers on the left are odd numbers; breakers on the right are even numbers.

Figure 5. Wiring the Output Connections
NOTE All connections must comply with NEC and other applicable codes.

Table 3. Torque Specifications

<table>
<thead>
<tr>
<th>Number of Wires</th>
<th>Wire Size</th>
<th>Branch Breakers</th>
<th>Main and Subfeed Breakers</th>
<th>Slotted Head Screw Slot Length</th>
<th>Socket Head Screw Socket Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 1/4&quot;</td>
<td>1/4&quot; and Less</td>
</tr>
<tr>
<td>1</td>
<td>2.1–5.3 mm² (14–10 AWG)</td>
<td>2.3 Nm (20 lb in)</td>
<td>4.0 Nm (35 lb in)</td>
<td>2.3 Nm (20 lb in)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>8.4 mm² (8 AWG)</td>
<td>2.8 Nm (25 lb in)</td>
<td>4.5 Nm (40 lb in)</td>
<td>2.8 Nm (25 lb in)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>13.3–18.0 mm² (6–4 AWG)</td>
<td>3.1 Nm (27 lb in)</td>
<td>5.1 Nm (45 lb in)</td>
<td>4.0 Nm (35 lb in)</td>
<td>13.6 Nm (120 lb in)</td>
</tr>
<tr>
<td></td>
<td>26.7 mm² (3 AWG)</td>
<td>5.1 Nm (45 lb in)</td>
<td>5.6 Nm (50 lb in)</td>
<td>4.0 Nm (35 lb in)</td>
<td>13.6 Nm (120 lb in)</td>
</tr>
<tr>
<td></td>
<td>33.6 mm² (2 AWG)</td>
<td>5.1 Nm (45 lb in)</td>
<td>5.6 Nm (50 lb in)</td>
<td>4.5 Nm (40 lb in)</td>
<td>13.6 Nm (120 lb in)</td>
</tr>
<tr>
<td></td>
<td>42.3–53.4 mm² (1–1/0 AWG)</td>
<td>5.1 Nm (45 lb in)</td>
<td>5.6 Nm (50 lb in)</td>
<td>—</td>
<td>13.6 Nm (120 lb in)</td>
</tr>
<tr>
<td></td>
<td>67.3–107.0 mm² (2/0–4/0 AWG)</td>
<td>—</td>
<td>5.6 Nm (50 lb in)</td>
<td>—</td>
<td>13.6 Nm (120 lb in)</td>
</tr>
</tbody>
</table>

Initial Startup

WARNING

Only qualified service personnel (such as a licensed electrician) shall perform the initial startup. Risk of electrical shock.

To start up the RPP:

1. Turn off utility power at the distribution point where the RPP will be connected. Be absolutely sure there is no power.
2. Verify that all circuit breakers are in the OFF (O) position. For layout, see Figure 4 on page 12.
3. Remove any foreign objects from the interior of the unit.

NOTE Verify that intake and exhaust air screens are clean and free of obstruction.

4. Complete the installation checklist (see page 16).
5. Turn on utility power to the RPP.
6. **Meter option only.** Verify that the display activates after approximately one minute, indicating logic power.
7. Check the phase rotation at the main input breaker(s). Phase rotation should be A, B, C, left to right.

8. Verify and record the input voltages on the main circuit breaker(s) in Table 4.

<table>
<thead>
<tr>
<th>Breaker</th>
<th>Phase Voltages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A-B</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

9. Set the password and any other options desired. See “Initial Configuration” on page 17.

10. Turn the main circuit breaker(s) on.

   If the breaker trips within one minute, contact your service representative for assistance.

   NOTE  The control circuit is energized when the main breaker is tripped or off.

11. Check the phase rotation at the line side of the terminals of the panelboard main breaker(s) and any subfeed circuit breakers.

   The rotation should be A, B, C, top to bottom. Note that the main panelboard and subfeed breakers are rotated 90 degrees counter-clockwise.

12. Turn on the individual panelboard circuit breakers following the startup sequence recommended by the load equipment manufacturer.

Replacing the Interior Barriers, Side Panels, and Doors

   NOTE  The interior barriers must be replaced, the ground straps reconnected, and the side panels and exterior doors replaced prior to placing the RPP in service.

To replace the interior barriers, side panels, and exterior doors:

1. Replace each interior barrier removed:

   Place the barrier’s movable hinge into the stationary hinge on the cabinet and squeeze the upper and lower levers together (see Figure 3 on page 10). Turn the levers outward, then release the levers. The hinge pins should spring into position, locking the barrier to the cabinet.

2. Reconnect the ground strap to each interior barrier.

3. Replace the side panels.

   Tighten the eight bolts along the sides of the panel.
4. Replace the exterior doors.
   Place each door on its hinge. Replace each door’s hinge pin.

5. Close the doors.

6. (Optional) Lock the doors using the supplied key.

Completing the Installation Checklist
This checklist ensures that you have completely installed all hardware, cables, and other equipment. Completing all items listed on the checklist will help ensure a smooth installation. Make a copy of the installation checklist before filling it out, and retain the original.

NOTE The installation checklist MUST be completed prior to starting the RPP for the first time.

Installation Checklist

- All packing materials and restraints have been removed.
- The RPP is placed in its installed location and all doors, side panels, and interior barriers are installed and secure.
- All conduits and cables are properly routed to the RPP.
- All power cables are properly sized and terminated.
- Branch circuit breakers are installed and wired to load.
- Input power connections are properly installed, including ground conductors.
- Neutral conductors are installed or bonded to ground.
- No foreign objects are inside the cabinet.
- Air conditioning equipment is installed and operating correctly.
- The area around the installed RPP is clean and dust-free. (The RPP must be installed on a level floor suitable for computer or electronic equipment.)
- Adequate workspace exists around the RPP.
- Adequate lighting is provided around the RPP.
- A 120V service outlet is located within 7.5m (25 ft) of the RPP.
Chapter 4  

Operation

This chapter contains information on how to use the Remote Power Panel (RPP), including front panel operation, initial configuration, and startup and shutdown.

Control Panel Functions

NOTE For products with an IQ 230 meter installed, refer to the Eaton Cutler-Hammer IQ 200 Series Instruction Leaflet (Instructions for Installation, Operation and Maintenance of the Cutler-Hammer IQ 200 Series of Electrical Distribution System Meters) for detailed instructions.

The IQ 110 meter provides the following basic monitoring for the RPP in a high-visibility, three-line, four-digit LED display (see Figure 6):

- System and line (line-to-line and line-to-neutral) voltages
- System and phase currents

![Figure 6. IQ 110 Meter Display](image)

At system startup, the meter warms up for one minute. See Table 9 on page 22 for meter specifications.

In addition to viewing the monitored values, you can program the meter to set a password and values for nominal Full Scale Current and Potential Transformer.

Refer to the Eaton Cutler-Hammer IQ 100 Series Meter Instruction Leaflet (Installation and Operation Manual for the Cutler-Hammer IQ 100 and IQ 115) for detailed instructions.

Initial Configuration

It is recommended to set the password. Refer to the Eaton Cutler-Hammer Instruction Leaflet for detailed instructions on setting the password and other options.
Startup and Shutdown

**Startup**

To start the RPP:

1. Open the exterior doors.
   
   To open a door, pull out the bottom portion of the handle and turn in either direction.

2. Verify that all circuit breakers are in the OFF (O) position.

3. Turn on utility power to the RPP.

4. **Meter option only.** Verify that the display activates after approximately one minute.

5. Turn on the panelboard main circuit breakers.

6. Turn on the individual panelboard circuit breakers following the startup sequence recommended by the load equipment manufacturer.

7. Close the exterior doors.

**Shutdown**

To shut down the RPP:

1. Shut down the load equipment according to the manufacturer’s recommended shutdown sequence.
   
   Load equipment may be turned off at the equipment or at the circuit breakers on the RPP.

2. Turn off all the panelboard main circuit breakers.

3. To remove power from the RPP completely, turn off utility power to the RPP.

**Transient Voltage Surge Suppression Option**

The optional Transient Voltage Surge Suppression (TVSS) has four indicators (see Figure 7). See Figure 4 on page 12 for the location of the TVSS.

![TVSS Indicators](image-url)
Chapter 5 Maintenance

This section explains how to

• Perform preventive maintenance for the Remote Power Panel (RPP)
• Store the RPP
• Recycle the RPP

Important Safety Instructions

The RPP interior is unsafe until AC source power is removed.

WARNING

• Servicing and maintenance should be performed by qualified service personnel only.
• LETHAL VOLTAGE PRESENT. This unit should not be operated with the cabinet doors open or safety panels removed. Do not make any assumptions about the electrical state of the RPP.

Preventive Maintenance

The RPP requires very little preventive maintenance. However, the system should be inspected periodically to verify that the unit is operating normally.

DAILY Maintenance

Perform the following steps daily:

1. Keep the area around the RPP clean and dust-free. If the atmosphere is very dusty, clean the outside of the system with a vacuum cleaner.

2. Verify that none of the ventilation accesses are blocked.

3. Verify that the operating environment is within the parameters specified in Table 10 on page 22.

4. Record the check results and any corrective actions in a suitable log.

PERIODIC Maintenance

Inspect the RPP periodically to determine if components, wiring, and connections exhibit evidence of overheating or other damage. Give particular attention to bolted connections. Retorque the bolted connections as needed to their appropriate values.

Refer to the distribution panel manufacturer’s circuit breaker application and maintenance literature for recommended maintenance practices and procedures.

ANNUAL Maintenance

Annual preventive maintenance, if required, should be performed only by authorized service personnel familiar with maintenance and servicing of the RPP. Contact your service representative for more information about service offerings.
Short Circuits

Short circuits are not considered normal phenomena in RPP system applications. Tripping of protective devices due to low impedance short circuits should be thoroughly investigated for damage to conductors, insulation, and the protective devices in accordance with the manufacturer’s recommendations.

Storage

If you store the RPP for any period, store it with its protective packaging material in place. Protect the stored equipment at all times from excessive moisture, dirt, corrosive conditions, and other contaminants. See Table 10 on page 22 for environmental specifications.

Do not store the RPP outdoors or stack other equipment on top of the RPP, whether packaged or not.

Recycling the Used RPP

Contact your local recycling or hazardous waste center for information on proper disposal of the used RPP.

**CAUTION**

Do not discard the RPP in the trash. This product must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.

**CAUTION**

Do not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.
Chapter 6 Specifications

This section provides the following specifications for the Remote Power Panel (RPP):

- Model number
- Weights and dimensions
- Electrical input and output
- Meter
- Environmental and safety
- Transient Voltage Surge Suppression (TVSS)

Table 5. Model Number

<table>
<thead>
<tr>
<th>Model</th>
<th>Feeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powerware RPP Generation 1</td>
<td>Up to four separate incoming feeds (400A, 800A)</td>
</tr>
</tbody>
</table>

Table 6. Weights and Dimensions

<table>
<thead>
<tr>
<th>Dimensions (WxDxH)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint Only: 610 x 610 x 2004 mm (24” x 24” x 78.9”)</td>
<td></td>
</tr>
<tr>
<td>Including One Door: 610 x 654 x 2004 mm (24” x 24.75” x 78.9”)</td>
<td></td>
</tr>
<tr>
<td>Including Two Doors: 610 x 699 x 2004 mm (24” x 27.5” x 78.9”)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>One Side: 237 kg (524 lb)</td>
<td></td>
</tr>
<tr>
<td>Two Sides: 304 kg (673 lb)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE  Weights are approximate. Weight varies depending on installed options.

Table 7. Electrical Input

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>208/120 Vac three-phase, 4 wire + G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage Range</td>
<td>+10/−15%</td>
</tr>
<tr>
<td>Nominal Input Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Input Frequency Range</td>
<td>45–65 Hz</td>
</tr>
<tr>
<td>Input Ratings</td>
<td>100A, 225A, 400A, 800A</td>
</tr>
<tr>
<td>Connections</td>
<td>Direct connection to panelboard main circuit breakers</td>
</tr>
<tr>
<td></td>
<td>Main incoming lugs</td>
</tr>
<tr>
<td></td>
<td>Power terminals provide connection of a 173% rated neutral and a parity-sized insulated ground</td>
</tr>
</tbody>
</table>

Table 8. Electrical Output

<table>
<thead>
<tr>
<th>Nominal Output Voltage</th>
<th>208/120 Vac three-phase, 4 wire + G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage Range</td>
<td>+10/−15%</td>
</tr>
<tr>
<td>Nominal Output Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Output Frequency Range</td>
<td>45–65 Hz</td>
</tr>
</tbody>
</table>
### Table 9. IQ 110 Meter

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Measuring Range</td>
<td>70–120% of nominal</td>
</tr>
<tr>
<td>Voltage Measuring Accuracy</td>
<td>±0.1% of range ±0.4% of reading</td>
</tr>
<tr>
<td>Current Measuring Range</td>
<td>5–120% of nominal</td>
</tr>
<tr>
<td>Current Measuring Accuracy</td>
<td>±0.1% of range ±0.4% of reading</td>
</tr>
<tr>
<td>Display Update Time</td>
<td>500 ms</td>
</tr>
</tbody>
</table>

**Note:** For products with an IQ 230 meter installed, refer to the Eaton Cutler-Hammer IQ 200 Series Instruction Leaflet (Instructions for Installation, Operation and Maintenance of the Cutler-Hammer IQ 200 Series of Electrical Distribution System Meters) for detailed specifications.

### Table 10. Environmental and Safety

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>0°C to 40°C (32°F to 104°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to 60°C (-40°F to 140°F)</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>10–95% noncondensing</td>
</tr>
<tr>
<td>Operating Altitude</td>
<td>Up to 2,000 meters (6600 ft) above sea level</td>
</tr>
<tr>
<td>Heat Dissipation</td>
<td>3412 BTU/hr maximum</td>
</tr>
<tr>
<td>Audible Noise</td>
<td>Less than 45 dBA at 1.5m (5 ft)</td>
</tr>
<tr>
<td>Safety Conformance</td>
<td>UL 60950, UL 891, CSA 60950, C22.2 No. 29 and No. 31</td>
</tr>
<tr>
<td>Agency Markings</td>
<td>CE</td>
</tr>
<tr>
<td>EMC (Class A)</td>
<td>FCC Part 15, ICES-003</td>
</tr>
</tbody>
</table>

### Table 11. TVSS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform</td>
<td>Hybrid designed, individually fused, MOV surge suppressor providing equal impedance paths to each matched MOV</td>
</tr>
<tr>
<td>Capacity</td>
<td>100/160/200 kA/phase based on a standard 8 × 20 microsec waveform</td>
</tr>
<tr>
<td>Indicators</td>
<td>Green indicator lights for each phase protected; audible alarm</td>
</tr>
<tr>
<td>Noise Attenuation</td>
<td>40 dB at 100 kHz</td>
</tr>
</tbody>
</table>
Chapter 7

Service and Support

If you have any questions or problems with the RPP, call your Local Distributor or the Help Desk at one of the following telephone numbers and ask for an RPP technical representative.

United States: 1-800-843-9433 or 1-919-870-3028
Canada: 1-800-461-9166 ext 260
All other countries: Call your local service representative

Please have the following information ready when you call for service:

- Model number
- Serial number
- Firmware version number
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) Number. This number must appear on the outside of the package and on the Bill Of Lading (if applicable). Use the original packaging or request packaging from the Help Desk or distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all warrantied units.

**NOTE** For critical applications, immediate replacement may be available. Call the Help Desk for the dealer or distributor nearest you.
Chapter 8  Warranty

Limited Factory Warranty

Three-Phase Powerware® Remote Power Panel (RPP) Products

WARRANTOR: The warrantor for the limited warranties set forth herein is Eaton Electrical Inc., a Delaware Corporation (“Eaton”).

LIMITED WARRANTY: This limited warranty (this “Warranty”) applies only to the original end-user (the “End-User”) of the Powerware Three-Phase RPP Products (the "Product") and cannot be transferred. This Warranty applies even in the event that the Product is initially sold by Eaton for resale to an End-User.

LIMITED WARRANTY PERIOD: The period covered by this Warranty for Product installed and currently located in the fifty (50) United States and the District of Columbia is twelve (12) months from the date of Product startup or eighteen (18) months from the date of Product shipment, whichever occurs first, for parts coverage and 90 days from the date of Product startup for labor coverage. The period covered by this Warranty for Product installed and currently located outside of the fifty (50) United States and the District of Columbia is twelve (12) months from the date of Product startup or eighteen (18) months from the date of Product shipment, whichever occurs first, for parts coverage.

WHAT THIS LIMITED WARRANTY COVERS: The warrantor warrants that the Powerware three-phase RPP electronics and Eaton-provided accessories (individually and collectively, the “Warranted Items”) are free from defects in material and workmanship. If, in the opinion of Eaton, a Warranted Item is defective and the defect is within the terms of this Warranty, Eaton’s sole obligation will be to repair or replace such defective item (including by providing service, parts, and labor, as applicable), at the option of Eaton. The Warranted Item will be repaired or replaced onsite at the End-User’s location or such other location as determined by Eaton. Any parts that are replaced may be new or reconditioned. All parts replaced by Eaton shall become the property of Eaton.

WHAT THIS LIMITED WARRANTY DOES NOT COVER: This Warranty does not cover any defects or damages caused by: (a) failure to properly store the Product before installation; (b) shipping and delivery of the Product if shipping is FOB Factory; (c) neglect, accident, fire, flood, lightning, vandalism, acts of God, Customer’s neglect, abuse, misuse, misapplication, incorrect installation; (d) repair or alteration not authorized in writing by Eaton personnel or performed by an authorized Eaton Customer Service Engineer or Agent; or (e) improper testing, operation, maintenance, adjustment, or any modification of any kind not authorized in writing by Eaton personnel or performed by an authorized Eaton Customer Service Engineer or Agent.

This Warranty is not valid: (a) if the Product is moved to a new location by someone other than an authorized Eaton Customer Service Engineer (in the USA) or Agent (outside of the USA); or (b) if the Product’s serial numbers have been removed or are illegible. Any Warranted Items repaired or replaced pursuant to this Warranty will be warranted for the remaining portion of the original Warranty subject to all the terms thereof. Labor warranty is not provided for Product located outside of the fifty (50) United States or the District of Columbia. Any equipment, parts, or materials included in the Product and not manufactured by Eaton are warranted solely by the manufacturer of such equipment, parts, or materials and are not included as part of this Warranty.

THIS WARRANTY IS THE END-USER’S SOLE REMEDY AND IS EXPRESSLY IN LIEU OF, AND THERE ARE NO OTHER EXPRESSED OR IMPLIED WARRANTIES (INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED).

LIMITATION OF LIABILITY: In no event shall Eaton be liable for any indirect, incidental, special, or consequential damages of any kind or type whatsoever, or based on any claim or cause of action, however denominated. Eaton shall not be responsible for failure to provide service or parts due to causes beyond Eaton’s reasonable control. In no case will Eaton’s liability under this Warranty exceed the replacement value of the Warranted Items.

END-USER’S OBLIGATIONS: In order to receive the benefits of this Warranty, the End-User must use the Product in a normal way, follow the Product’s user’s guide, and protect against further damage to the Product if there is a covered defect.

OTHER LIMITATIONS: Eaton’s obligations under this Warranty are expressly conditioned upon receipt by Eaton of all payments due to it (including interest charges, if any). During such time as Eaton has not received payment of any amount due to it for the Product, in accordance with the contract terms under which the Product is sold, Eaton shall have no obligation under this Warranty. Also during such time, the period of this Warranty shall continue to run and the expiration of this Warranty shall not be extended upon payment of any overdue or unpaid amounts.

COSTS NOT RELATED TO WARRANTY: The End-User shall be invoiced for, and shall pay for, all services not expressly provided for by the terms of this Warranty, including without limitation site calls involving an inspection that determines no corrective maintenance is required. Any costs for replacement equipment, installation, materials, freight charges, travel expenses, or labor of Eaton representatives outside the terms of this Warranty will be borne by the End-User.

OBTAINING WARRANTY SERVICE: In the USA, call the Eaton Customer Reliability Center 7x24 at 800-843-9433. Outside of the USA, call your local Eaton sales or service representative, or call the Eaton Customer Reliability Center in the USA at 919-870-3028. For comments or questions about this Limited Factory Warranty, write to the Customer Quality Representative, 3301 Spring Forest Road, Raleigh, North Carolina 27616 USA.