50 kW (480V/208V) IAC-D
50 kW (208V/208V) IAC-D
100 kW (480V/208V) IAC-D
100 kW (208V/208V) IAC-D
150 kW (480V/208V) IAC-D
200 kW (480V/208V) IAC-D
Installation and Operation Manual
IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the UPS system and batteries. Read all instructions before operating the equipment and save this manual for future reference.

CONSIGNES DE SÉCURITÉ IMPORTANTES — CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d’installation et de maintenance des batteries et de l’onduleur. Veuillez consulter entièrement ces instructions avant de faire fonctionner l’équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

IMPORTANT

To ensure you have the most up-to-date content and information for this product, please review the latest manual revision on our website, www.eaton.com/93PM.
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Chapter 1 Introduction

The Eaton® 93PM Integrated Accessory Cabinet-Distribution (IAC-D) is designed for use with the Eaton 93PM Series Uninterruptible Power Supplies (UPSs). The IAC-D provides power distribution options for servers, racks, and other equipment via distribution panelboards, or distributes power to larger loads via distribution subfeed circuit breakers. The distribution options are custom configurable, enabling adaptation and expansion without costly electrical rework. Four 480V/208V models are available, the 93PM 50 kW IAC-D, the 93PM 100 kW IAC-D, 93PM 150 kW IAC-D, and the 93PM 200 kW IAC-D. Two 208V/208V models are available, the 93PM 50 kW IAC-D and the 93PM 100 kW IAC-D.

The IAC-D is housed in a single free-standing cabinet with safety shields behind the front door for hazardous voltage protection. The cabinets match the UPS cabinet in style and color.

Figure 1 shows the Eaton 93PM IAC-D.

NOTE Startup and operational checks must be performed by an authorized Eaton Customer Service Engineer, or the warranty terms specified on the product’s resources page become void. See Chapter 9 Warranty for details. This service is offered as part of the sales contract for the UPS. Contact an Eaton service representative in advance (a minimum two-week notice is required) to reserve a preferred startup date.

Figure 1. Eaton 93PM IAC-D
1.1 Features

- **50 kW features:**
  - 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
  - Up to two optional output distribution panels distributes the output power from the UPS to the load. The distribution panels are behind the door on the front of the IAC-D. Each 225A distribution panel with a 225A main breaker can hold up to the equivalent of 42 single-pole branch circuit breakers (Cutler-Hammer® bolt-on type BAB or QBHW) that can be configured to meet facility needs.
  - Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
  - A no distribution option provides a single 175A output breaker.
  - Neutral Current Monitoring available at the UPS display.
  - Optional factory pre-wiring to allow subfeed breakers to be field installed.

- **50 kW (208V/208V) features:**
  - Optional 208/480 Vac input transformer provides conversion from 208 Vac facility power to feed the 93PM UPS 480 Vac input.
  - 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
  - Can be used with a three-breaker Sidecar Integrated Accessory Cabinet-Bypass (SIAC-B) or wall mount maintenance bypass.
  - One optional output distribution panel distributes the output power from the UPS to the load. The distribution panel is behind the door on the front of the IAC-D. The 225A distribution panel with a 225A main breaker can hold up to the equivalent of 42 single-pole branch circuit breakers (Cutler-Hammer bolt-on type BAB or QBHW) that can be configured to meet facility needs.
  - Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
  - A no distribution option provides a single 175A output breaker.
  - Neutral Current Monitoring available at the UPS display.
  - Optional factory pre-wiring to allow subfeed breakers to be field installed.

- **100 kW features:**
  - 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
  - Up to two optional output distribution panels distributes the output power from the UPS to the load. The distribution panels are behind the door on the front of the IAC-D. Each 225A distribution panel with a 225A main breaker can hold up to the equivalent of 42 single-pole branch circuit breakers (Cutler-Hammer bolt-on type BAB or QBHW) that can be configured to meet facility needs.
  - Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
- A no distribution option provides a single 350A output breaker.
- Neutral Current Monitoring available at the UPS display.
- Optional factory pre-wiring to allow subfeed breakers to be field installed.

**100 kW (208V/208V) features:**
- Optional 208/480 Vac input transformer provides conversion from 208 Vac facility power to feed the 93PM UPS 480 Vac input.
- 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
- Can be used with a three-breaker Sidecar Integrated Accessory Cabinet-Bypass (SIAC-B) or wall mount maintenance bypass.
- One optional output distribution panel distributes the output power from the UPS to the load. The distribution panel is behind the door on the front of the IAC-D. The 225A distribution panel with a 225A main breaker can hold up to the equivalent of 42 single-pole branch circuit breakers (Cutler-Hammer bolt-on type BAB or QBHW) that can be configured to meet facility needs.
- Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
- A no distribution option provides a single 350A output breaker.
- Neutral Current Monitoring available at the UPS display.
- Optional factory pre-wiring to allow subfeed breakers to be field installed.

**150 kW features:**
- 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
- Up to two optional output distribution panels distributes the output power from the UPS to the load. The distribution panels are behind the door on the front of the IAC-D. Each 225A or 400A distribution panel can hold up to 42 single-pole branch circuit breakers (either Cutler-Hammer bolt-on type BAB or QBHW) that can be configured to meet facility needs.
- An optional single 225A distribution breaker for use with two panel board configurations.
- Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
- A no distribution option provides a single 600A output breaker.
- Optional Neutral Current Monitoring available at the UPS display.
- Optional factory pre-wiring to allow subfeed breakers to be field installed.

**200 kW features:**
- 480/208 Vac output transformer provides 208 Vac output from the 480 Vac UPS output for applications that require 208 Vac, and for use with the distribution panels supplying 208/120 Vac to the critical load.
- Up to two optional output distribution panels distributes the output power from the UPS to the load. The distribution panels are behind the door on the front of the IAC-D. Each 225A or 400A distribution
panel can hold up to 42 single-pole branch circuit breakers (either Cutler-Hammer bolt-on type BAB or QBHW that can be configured to meet facility needs.

- An optional single 225A distribution breaker for use with two panel board configurations.
- Up to five optional 100-250A adjustable output distribution breakers are available to distribute the output power from the UPS to larger critical loads. The breakers have adjustable trip rating and are enclosed behind the hinged doors and trim panels on the front of the IAC-D.
- A no distribution option provides a single 700A output breaker.
- Neutral Current Monitoring available at the UPS display.
- Optional factory pre-wiring to allow subfeed breakers to be field installed.

1.2 Installation Features

- The IAC-D is designed to be installed in line-up-and-match or standalone configurations:
  - In line-up-and-match configurations input power wiring is routed through the side panels between the UPS and the IAC-D.
  - In standalone configurations input power wiring is routed using external conduit through top or bottom entry conduit plates.
  - Output wiring is routed using external conduit through top or bottom entry conduit plates.
- To reduce installation time, connections to the input, distribution panel, and output breakers are made to easily accessible mechanical lug terminals on the breakers located at the front of the cabinet. Subfeed breaker output connections are made to mechanical lug terminal blocks also located at the front of the cabinet.
- Top exhaust or rear ventilation is available
- The cabinet can be leveled and secured in place using leveling feet

A line-up-and-match IAC-D is installed adjacent to the UPS or other accessory cabinet. The recommended installation location is on the left side of the UPS cabinet as viewed from the front of the cabinets. However, the IAC-D may be installed on the right side of the UPS cabinet. See Figure 2 through Figure 5 for line-up-and-match configuration views.

1.3 Model Configurations

The following 93PM IAC-D model configurations are available for use with the 93PM UPS Series:

- 50 kW IAC-D with 480/208 Vac output transformer and:
  - Up to two PRL1A 225A 42-pole distribution panels.
  - One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  - Up to five JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  - One K-Frame 3-pole 175A output breaker.
- 50 kW IAC-D with 208/480 input transformer, 480/208 Vac output transformer and:
  - One PRL1A 225A 42-pole distribution panel.
  - One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  - Up to five JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  - One LG-Frame 3-pole 175A output breaker.
• 100 kW IAC-D with 480/208 Vac output transformer and:
  – Up to two PRL1A 225A 42-pole distribution panels.
  – One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – Up to five JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – One LG-Frame 3-pole 350A output breaker.
• 100 kW IAC-D with 208/480 input transformer, 480/208 Vac output transformer and:
  – One PRL1A 225A 42-pole distribution panel.
  – One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – Up to five JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – One LG-Frame 3-pole 350A output breaker.
• 150 kW IAC-D with 480/208 Vac output transformer and:
  – Up to two PRL1A 225A 42-pole distribution panels.
  – Up to two PRL1A 225A 42-pole distribution panels and one FD-Frame 3-pole 225A subfeed distribution breaker.
  – One PRL1A 225A 42-pole distribution panel and one PRL1A 400A 42-pole branch distribution panel.
  – One PRL1A 225A 42-pole distribution panel, one PRL1A 400A 42-pole branch distribution panel, and one FD-Frame 3-pole 225A subfeed distribution breaker.
  – One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – One LG-Frame 3-pole 350A output breaker.
• 200 kW IAC-D with 480/208 Vac output transformer and:
  – Up to two PRL1A 225A 42-pole distribution panels.
  – Up to two PRL1A 225A 42-pole distribution panels and one FD-Frame 3-pole 225A subfeed distribution breaker.
  – One PRL1A 225A 42-pole distribution panel and one PRL1A 400A 42-pole branch distribution panel.
  – One PRL1A 225A 42-pole distribution panel, one PRL1A 400A 42-pole branch distribution panel, and one FD-Frame 3-pole 225A subfeed distribution breaker.
  – One PRL1A 225A 42-pole distribution panel and up to three JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – Up to five JG-Frame 3-pole 100-250A adjustable subfeed distribution breakers.
  – One MD-Frame 3-pole 700A output breaker.
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Figure 2. Eaton 93PM 50 kW, 100 kW, and 150 kW UPS with Left-Mounted Eaton 93PM IAC-D

Figure 3. Eaton 93PM 50 kW, 100 kW, and 150 kW UPS with Right-Mounted Eaton 93PM IAC-D
Introduction

Figure 4. Eaton 93PM 200 kW UPS with Left-Mounted Eaton 93PM IAC-D

Figure 5. Eaton 93PM 200 kW UPS with Right-Mounted Eaton 93PM IAC-D
1.4 Using This Manual

This manual describes how to install the IAC-D. Read and understand the procedures described to ensure trouble-free installation and operation.

Read through each procedure before beginning the procedure. Perform only those procedures that apply to the UPS system being installed or operated.

1.5 Conventions Used in This Manual

This manual uses these type conventions:

- **Bold type** highlights important concepts in discussions, key terms in procedures, and menu options, or represents a command or option that you type or enter at a prompt.

- **Italic type** highlights new terms where they are defined.

- **Screen type** represents information that appears on the screen or LCD.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NOTE</strong></td>
<td>Information notes provide pertinent information about important features or instructions.</td>
</tr>
<tr>
<td><code>[Keys]</code></td>
<td>Brackets are used when referring to a specific key, such as [Enter] or [Ctrl].</td>
</tr>
</tbody>
</table>

In this manual, the term **UPS** refers only to the UPS cabinet and its internal elements. The term **UPS system** refers to the entire power protection system – the UPS cabinet, an external battery system, and options or accessories installed.

The term **line-up-and-match** refers to accessory cabinets that are physically located adjacent to the UPS. The term **standalone** refers to accessory cabinets that are located separate from the UPS.

1.6 Symbols, Controls, and Indicators

The following are examples of symbols used on the UPS or accessories to alert you to important information:

**RISK OF ELECTRIC SHOCK** - Observe the warning associated with the risk of electric shock symbol.

**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 UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and 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.
1.7 For More Information

Refer to the Eaton 93PM UPS (20–50 kW, 480V–50 kW Frame) Installation and Operation Manual, the Eaton 93PM UPS (20-100 kW, 480V–100 kW Frame) Installation and Operation Manual, the Eaton 93PM UPS (20–150 kW, 480V–150 kW Capacity Frame) Installation and Operation Manual, or the Eaton 93PM UPS (20–200 kW, 480V–200 kW Frame) Installation and Operation Manual for the following additional information:

- UPS, optional components, and accessory installation instructions, including site preparation, planning for installation, wiring and safety information, and detailed illustrations of cabinets and optional accessories with dimensional and connection point drawings
- UPS operation, including UPS controls, functions of the UPS, standard features and optional accessories, procedures for starting and stopping the UPS, and information about maintenance and responding to system events
- Communication capabilities of the UPS system

Refer to the Eaton 93PM Sidecar Integrated Accessory Cabinet-Bypass (100 kW SIAC-B) Installation and Operation Manual for the following additional information:

- Installation instructions, including site preparation, planning for installation, wiring and safety information, and detailed illustrations of cabinets with dimensional and connection point drawings
- Operation, including breakers, standard features and optional accessories, procedures for using the bypass functions, and information about maintenance

Visit www.eaton.com/powerquality or contact an Eaton service representative for information on how to obtain copies of these manuals.

1.8 Getting Help

If help is needed with any of the following:

- Scheduling initial startup
- Regional locations and telephone numbers
- A question about any of the information in this manual
- A question this manual does not answer

Please call the Customer Reliability Center at:

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

Please use the following e-mail address for manual comments, suggestions, or to report an error in this manual:

E-ESSDocumentation@eaton.com
1.9 Equipment Registration

Please visit www.eaton.com/pq/register to register your new Eaton UPS / Eaton UPS Accessory.

Model Number: ____________________________________________________________

Serial Number: ___________________________________________________________
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 UPS system and batteries. Read all instructions before operating the equipment and save this manual for future reference.

The UPS system is designed for industrial or computer room applications, and contains safety shields behind the door and front panels. However, the UPS system is a sophisticated power system and should be handled with appropriate care.

**DANGER**

This UPS system contains LETHAL VOLTAGES. All repairs and service should be performed by AUTHORIZED SERVICE PERSONNEL ONLY. There are NO USER SERVICEABLE PARTS inside the UPS.

**WARNING**

- The UPS system is powered by its own energy source (batteries). The output terminals may carry live voltage even when the UPS is disconnected from an AC source.
- To reduce the risk of fire or electric shock, install this UPS system 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.
- As a result of the connected loads, high leakage current is possible. Connection to earth ground is required for safety and proper product operation. Do not check UPS system operation by any action that includes removal of the earth (ground) connection with loads attached.
- Ensure all power is disconnected before performing installation or service.
- ELECTRIC ENERGY HAZARD. Do not attempt to alter any UPS system or battery wiring or connectors. Attempting to alter wiring can cause injury.

**CAUTION**

- Installation or servicing should be performed by qualified service personnel knowledgeable of UPS and battery systems, and required precautions. Keep unauthorized personnel away from equipment. Consider all warnings, cautions, and notes before installing or servicing equipment.
- Keep the Accessory cabinet doors closed and front panels installed to ensure proper cooling airflow and to protect personnel from dangerous voltages inside the unit.
- Do not install or operate the UPS system close to gas or electric heat sources.
- The operating environment should be maintained within the parameters stated in this manual.
- Keep surroundings uncluttered, clean, and free from excess moisture.
- Observe all DANGER, WARNING, and CAUTION notices affixed to the inside and outside of the equipment.
Safety Warnings
Chapter 3 Installation Plan and Unpacking

Use the following basic sequence of steps to install the Eaton 93PM Integrated Accessory Cabinet-Distribution (IAC-D):

1. Create an installation plan for the IAC-D.
2. Prepare your site for the IAC-D.
3. Inspect and unpack the IAC-D.
4. Unload and install the IAC-D, and wire the system.
5. Complete the Installation Checklist.
6. Have authorized service personnel perform preliminary operational checks and start up the UPS system.

NOTE Startup and operational checks must be performed by an authorized Eaton Customer Service Engineer, or the warranty terms specified on the product’s resources page become void. See Chapter 9 Warranty for details. This service is offered as part of the sales contract for the UPS. Contact an Eaton service representative in advance (a minimum two-week notice is required) to reserve a preferred startup date.

3.1 Creating an Installation Plan

Before installing the IAC-D, read and understand how this manual applies to the system being installed. Use the procedures and illustrations in this section to create a logical plan for installing the IAC-D. This section contains the following information:

• Physical features and requirements, including dimensions
• Power wiring installation information

3.2 Preparing the Site

For the UPS system to operate at peak efficiency, the installation site should meet the environmental parameters outlined in this manual. The operating environment must meet the weight, clearance, and environmental requirements specified for the applicable accessory cabinet.

3.2.1 Environmental and Installation Considerations

The UPS system installation, including the IAC-D, must meet the following guidelines:

• The system must be installed on a level floor suitable for computer or electronic equipment.
• The system must be operated at an altitude no higher than 1500m (5000 ft) without derating. For additional assistance with high altitude operation, contact an Eaton service representative (see paragraph 1.7 For More Information).
• The system must be installed in a temperature and humidity controlled indoor area free of conductive contaminants.

Failure to follow guidelines may void your warranty.

The basic environmental requirements for operation of the IAC-D are:

• Recommended Operating Range: 5–40°C (41–104°F)
• Maximum Relative Humidity: 5–95%, noncondensing

The IAC-D ventilation requirements are shown in Table 1.
### Table 1. Air Conditioning or Ventilation Requirements During Full Load Operation

<table>
<thead>
<tr>
<th>Model</th>
<th>Rating</th>
<th>Input/Output Voltage</th>
<th>Max Heat Dissipation at 100% Load kW [BTU/Hr]</th>
<th>Minimum Required Cooling Air Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 50 kW IAC-D with Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>50 kW</td>
<td>480/208</td>
<td>2.58 [8803]</td>
<td>Natural Convection</td>
</tr>
<tr>
<td>Eaton 93PM 50 kW IAC-D with Input Autotransformer and Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>50 kW</td>
<td>208/480 (input transformer) 480/208 (output transformer)</td>
<td>4.36 [14877]</td>
<td>320 liter/sec (678 cfm)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D with Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>100 kW</td>
<td>480/208</td>
<td>4.18 [14268]</td>
<td>320 liter/sec (678 cfm)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D with Input Autotransformer and Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>100 kW</td>
<td>208/480 (input transformer) 480/208 (output transformer)</td>
<td>5.62 [19176]</td>
<td>320 liter/sec (678 cfm)</td>
</tr>
<tr>
<td>Eaton 93PM 150 kW IAC-D with Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>150 kW</td>
<td>480/208</td>
<td>2.98 [10168]</td>
<td>320 liter/sec (678 cfm)</td>
</tr>
<tr>
<td>Eaton 93PM 200 kW IAC-D with Standard K13 Output Transformer (non-TP1 efficiency)</td>
<td>200 kW</td>
<td>480/208</td>
<td>3.50 [11943]</td>
<td>320 liter/sec (678 cfm)</td>
</tr>
</tbody>
</table>

The IAC-D operating environment must accommodate the weight requirements shown in Table 2 and the size and space requirements shown in Table 3 and Figure 6 through Figure 8.

### Table 2. IAC-D Cabinet Weights

<table>
<thead>
<tr>
<th>Model</th>
<th>Shipping</th>
<th>Weight kg (lb)</th>
<th>Point Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 50 kW IAC-D with output transformer and two panelboards</td>
<td>567 (1251)</td>
<td>521 (1149)</td>
<td>4 at 130 (287)</td>
</tr>
<tr>
<td>Eaton 93PM 50 kW IAC-D with input and output transformer and two panelboards</td>
<td>744 (1641)</td>
<td>698 (1539)</td>
<td>4 at 175 (385)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D with output transformer and two panelsboards</td>
<td>674 (1487)</td>
<td>628 (1385)</td>
<td>4 at 157 (346)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D with input and output transformer and two panelsboards</td>
<td>949 (2093)</td>
<td>903 (1991)</td>
<td>4 at 226 (498)</td>
</tr>
</tbody>
</table>
Table 2. IAC-D Cabinet Weights (Continued)

<table>
<thead>
<tr>
<th>Model</th>
<th>Shipping</th>
<th>Installed</th>
<th>Point Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 150 kW IAC-D with output transformer and two panelboards</td>
<td>955 (2106)</td>
<td>909 (2004)</td>
<td>4 at 227 (501)</td>
</tr>
<tr>
<td>Eaton 93PM 200 kW IAC-D with output transformer and two panelboards</td>
<td>1023 (2256)</td>
<td>977 (2154)</td>
<td>4 at 244 (539)</td>
</tr>
</tbody>
</table>

Air inlets are in the bottom of the cabinet. Outlets are in the back of the cabinet for rear exhaust and in the top of the cabinet for top exhaust.

Rear exhaust (see Figure 9):
- 50 kW: Natural convection air cooling regulates internal component temperature
- 100 kW: Natural convection air cooling regulates internal component temperature
- 100 kW 208/208: Forced air cooling only
- 150 kW: Forced air cooling only
- 200 kW: Forced air cooling only

Top exhaust (see Figure 10 or Figure 11):
- 50 kW: Natural convection air cooling
- 100 kW: Forced air cooling only
- 100 kW 208/208: Forced air cooling only
- 150 kW: Forced air cooling only
- 200 kW: Forced air cooling only

Allow clearance on top or in back of the cabinet depending on type of exhaust for proper air circulation. The clearances required around the IAC-D cabinet are shown in Table 3.
### Table 3. IAC-D Cabinet Clearances

<table>
<thead>
<tr>
<th>Location</th>
<th>Clearances</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Front of Cabinet</td>
<td>914.4 mm (36&quot;) working space</td>
</tr>
<tr>
<td>From Top of Cabinet with Top Exhaust</td>
<td>203 mm (8&quot;) minimum clearance for ventilation</td>
</tr>
<tr>
<td>(50 kW Zone 1 – see Figure 10)</td>
<td></td>
</tr>
<tr>
<td>From Top of Cabinet with Top Exhaust</td>
<td>457.2 mm (18&quot;) minimum clearance for ventilation and working space</td>
</tr>
<tr>
<td>(100 kW, 150 kW, and 200 kW, 480V/208V Zone 1 – see Figure 10 or Figure 11)</td>
<td></td>
</tr>
<tr>
<td>From Top of Cabinet with Rear service access (Zone 2 – see Figure 10 or Figure 11)</td>
<td>Can be less than 457.2 mm (18&quot;)</td>
</tr>
<tr>
<td>From Back of Cabinet with Rear Exhaust (50 kW and 100 kW, 480V/208V)</td>
<td>203 mm (8&quot;) minimum clearance for ventilation</td>
</tr>
<tr>
<td>From Back of Cabinet with Rear Exhaust (150 kW and 200 kW, 480V/208V)</td>
<td>457.2 mm (18&quot;) minimum clearance for ventilation</td>
</tr>
<tr>
<td>From Back of Cabinet with Rear Exhaust (50 kW and 100 kW, 208V/208V)</td>
<td>457.2 mm (18&quot;) minimum clearance for ventilation</td>
</tr>
<tr>
<td>From Back of Cabinet – Seismic Installation</td>
<td>914.4 mm (36&quot;) working space</td>
</tr>
<tr>
<td>From Right Side of Cabinet</td>
<td>None Required</td>
</tr>
<tr>
<td>From Left Side of Cabinet</td>
<td>None Required</td>
</tr>
</tbody>
</table>
Figure 6. 93PM IAC-D Cabinet Dimensions (Front, Right Side, and Back Views)

Dimensions are in millimeters [inches]
Figure 7. 93PM IAC-D Dimensions (Top and Bottom Views)

NOTE: Top exhaust configuration shown. Dimensions are in millimeters [inches]
Figure 8. 93PM IAC-D Center of Gravity

Dimensions are in millimeters [inches]

<table>
<thead>
<tr>
<th></th>
<th>A (mm/in)</th>
<th>B (mm/in)</th>
<th>C (mm/in)</th>
<th>Installed Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 50 kW IAC-D (480V/208V)</td>
<td>649 (25.5)</td>
<td>497 (19.5)</td>
<td>367 (14.4)</td>
<td>521 (1149)</td>
</tr>
<tr>
<td>Eaton 93PM 50 kW IAC-D (208V/208V)</td>
<td>854 (33.6)</td>
<td>443 (17.4)</td>
<td>392 (15.4)</td>
<td>698 (1539)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D (480V/208V)</td>
<td>695 (27.4)</td>
<td>535 (21.0)</td>
<td>373 (14.7)</td>
<td>628 (1385)</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D (208V/208V)</td>
<td>906 (35.6)</td>
<td>437 (17.2)</td>
<td>363 (14.3)</td>
<td>903 (1991)</td>
</tr>
<tr>
<td>Eaton 93PM 150 kW IAC-D (480V/208V)</td>
<td>704 (27.7)</td>
<td>481 (18.9)</td>
<td>387 (15.2)</td>
<td>909 (2004)</td>
</tr>
<tr>
<td>Eaton 93PM 200 kW IAC-D (480V/208V)</td>
<td>698 (27.5)</td>
<td>473 (18.6)</td>
<td>388 (15.3)</td>
<td>977 (2154)</td>
</tr>
</tbody>
</table>
Installation Plan and Unpacking

Figure 9. Cabinet Ventilation – 50 kW, 100 kW, 150 kW, and 200 kW Rear Exhaust

Figure 10. Cabinet Ventilation – 50 kW and 100 kW (480V/208V) Top Exhaust

Dimensions are in millimeters [inches]
3.2.2 IAC-D Power Wiring Preparation

Read and understand the following information while planning and performing the installation:

**WARNING**

As a result of the connected loads, high leakage current is possible. Connection to earth ground is required for safety and proper product operation. Do not check IAC-D operation by any action that includes removal of the earth (ground) connection with loads attached.

- Refer to national and local electrical codes for acceptable external wiring practices.
- For external wiring, use copper wire with 75°C rated insulation. Wire sizes listed in Table 4 through Table 7, are for copper wiring only. If wire is run in an ambient temperature greater than 40°C (104°F), higher temperature wire and/or larger size wire may be necessary. Wire sizes are based on using the specified breakers.
- Recommended wire sizes are based on NFPA National Electrical Code® (NEC®) 70 Table 310.15(B)(16) 75°C ampacity with 40°C ambient correction factors.
- 50 kW and 100 kW (208V/208V) IAC-D – 208V supply feed must be 3-wire Wye, no Delta
- Refer to NEC Article 250 and local codes for proper grounding practices.
- Per NEC Article 300-20(B), all three-phase conductors must be run in the same conduit. Neutral and ground must be run in the same conduit as the phase conductors.
- Conduit is to be sized to accommodate three phase conductors, one neutral conductor the same size as the phase conductors and one ground conductor. If two neutral conductors or an oversized neutral conductor are to be installed, size the conduit to accommodate the extra wire or size.
• 225A and 400A distribution panels use Cutler-Hammer bolt-on type BAB or QBHW breakers. Breakers are to be provided by the customer.

• Material and labor for external wiring recommendations are to be provided by the customer.

• Refer to the appropriate Eaton 93PM UPS installation and operation manual listed in paragraph 1.8 Getting Help for UPS cabinet conduit and terminal specifications and locations.

• The term line-up-and-match refers to accessory cabinets that are physically located adjacent to the UPS. The term standalone refers to accessory cabinets that are located separate from the UPS.

3.2.3 208V/208V IAC-D Power Wiring Preparation with Maintenance Bypass

Read and understand the following information in addition to the information in paragraph 3.2.2 IAC-D Power Wiring Preparation while planning and performing a system installation with a single-feed UPS and a Sidecar Integrated Accessory Cabinet-Bypass (SIAC-B) or wall mount maintenance bypass:

NOTE The 208V/208V IAC-D can be used only with a three-breaker SIAC-B or wall mount maintenance bypass.

• The SIAC-B maintenance bypass input (E6,E7,E8) or wall mount maintenance bypass input must be fed from the output of the 208V/480V IAC-D input autotransformer for single-feed systems when using a three-breaker bypass. This must be a 480V feed.

• The 480V output of the UPS (E9, E10, and E11) is wired to the SIAC-B or wall mount maintenance bypass MIS input.

• The 480V output from the SIAC-B (E9, E10, and E11) or wall mount maintenance bypass is wired to the 480V input of IAC-D.

For external input power wiring recommendations, including the minimum AWG size of external wiring, see Table 4 for 480V/208V IAC-D and Table 5 for 208V/208V IAC-D. Wire sizes listed are for copper wiring only.

Table 4. External Input Power Wiring Recommendations for the Eaton 93PM IAC-D (480V/208V)

<table>
<thead>
<tr>
<th>Basic Unit Rating</th>
<th>Units</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>kW</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Volts</td>
<td>480</td>
</tr>
<tr>
<td>480 VAC Input to IAC-D from UPS (3) Phases, (1) Ground</td>
<td>Maximum Amps</td>
<td>60</td>
</tr>
<tr>
<td>Minimum Conductor Size (Phase A, B, and C) Number per Phase</td>
<td>AWG or kcmil (each)</td>
<td>2/0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Minimum Conductor Size (Ground) Number</td>
<td>AWG or kcmil (each)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1)</td>
</tr>
</tbody>
</table>

NOTE Callout letter A maps to the Oneline Schematics detailed in Chapter 5 Onelines and Schematics.
Table 5. External Input Power Wiring Recommendations for the Eaton 93PM IAC-D (208V/208V)

<table>
<thead>
<tr>
<th>Basic Unit Rating</th>
<th>Units</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kW</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>Volts</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td></td>
<td>208</td>
</tr>
<tr>
<td>208 VAC Input to IAC-D from Utility Source (3) Phases, (1) Ground</td>
<td>Maximum Amps</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td></td>
<td>347</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>250 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250 (2)</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>4 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 (2)</td>
</tr>
<tr>
<td>480 VAC Output to UPS from IAC-D (3) Phases, (1) Ground</td>
<td>Maximum Amps</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>2 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4/0 (1)</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>8 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 (1)</td>
</tr>
<tr>
<td>480 VAC Input to IAC-D from UPS (3) Phases, (1) Ground</td>
<td>Maximum Amps</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>3 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2/0 (1)</td>
</tr>
<tr>
<td></td>
<td>AWG or kcmil (each)</td>
<td>8 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 (1)</td>
</tr>
</tbody>
</table>

**NOTE** Callout letters A, B, and C map to the Oneline Schematics detailed in Chapter 5, Onelines and Schematics.

For external output power wiring recommendations, including the minimum AWG size of external wiring, see Table 6 for 480V/208V IAC-D and Table 7 for 208V/208V IAC-D. Wire sizes listed are for copper wiring only.
Table 6. External Output Power Wiring Recommendations for the Eaton 93PM IAC-D (480V/208V)

<table>
<thead>
<tr>
<th>Basic Unit Rating</th>
<th>Units</th>
<th>kW</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage</td>
<td>Volts</td>
<td></td>
<td>208</td>
<td>208</td>
<td>208</td>
<td>208</td>
</tr>
<tr>
<td>AC Output from Distribution Panel Breakers to the Critical Load</td>
<td>Maximum Amps</td>
<td>139</td>
<td>277</td>
<td>416</td>
<td>555</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC Output from Subfeed Breakers to the Critical Load</td>
<td>Maximum Amps</td>
<td>139</td>
<td>277</td>
<td>416</td>
<td>555</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC Output from Optional Single Subfeed Breaker to the Critical Load</td>
<td>Maximum Amps</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>225A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC Output from Output Breaker to the Critical Load</td>
<td>Maximum Amps</td>
<td>139</td>
<td>277</td>
<td>416</td>
<td>555</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wire branch circuits in accordance with branch circuit breaker manufacturer’s ratings and instructions, power cable termination sizes listed in Table 10, and national and local electrical codes. Maximum output ratings are to be in accordance with the rating label on the IAC-D and national and local electrical codes. The total combined load is not to exceed the maximum output rating. Input is prewired to the panelboard.

Wire subfeed circuits in accordance with subfeed circuit breaker manufacturer’s ratings, selected trip rating and instructions, power cable termination sizes listed in Table 10, and NFPA National Electrical Code (NEC) 70 and local electrical codes. Maximum output ratings are to be in accordance with the rating label on the IAC-D and national and local electrical codes. The total combined load is not to exceed the maximum output rating. To allow for future upgrades, consider wiring adjustable subfeed breakers for maximum rated current.

Minimum Conductor Size (Phase A, B, and C) Number per Phase

- AWG or kcmil (each) N/A N/A 3/0 (2) 3/0 (2)
- AWG or kcmil (each) N/A N/A 300 (2) 300 (2)
- AWG or kcmil (each) N/A N/A 6 (1) 6 (1)

Minimum Conductor Size (Neutral) Number

- AWG or kcmil (each) N/A N/A 300 (2) 300 (2)

Minimum Conductor Size (Ground) Number

- AWG or kcmil (each) N/A N/A 6 (1) 6 (1)

Minimum Conductor Size (Phase A, B, and C) Number per Phase

- AWG or kcmil (each) 250 (1) 250 (2) 250 (3) 250 (4)
### Table 6. External Output Power Wiring Recommendations for the Eaton 93PM IAC-D (480V/208V) (Continued)

<table>
<thead>
<tr>
<th>Minimum Conductor Size (Neutral)</th>
<th>AWG or kcmil</th>
<th>4/0</th>
<th>2/0</th>
<th>500</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(each)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Conductor Size (Ground)</td>
<td></td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(each)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonding Ground Size</td>
<td></td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(each)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE** Callout letter B maps to the Oneline Schematics detailed in Chapter 5 Onelines and Schematics.

### Table 7. External Output Power Wiring Recommendations for the Eaton 93PM IAC-D (208V/208V)

<table>
<thead>
<tr>
<th>Units</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>50</td>
</tr>
<tr>
<td>Volts</td>
<td>208/208</td>
</tr>
<tr>
<td>AC Output from Distribution Panel Breakers to the Critical Load (1) Line, (1) Neutral, (1) Ground</td>
<td>Maximum Amps</td>
</tr>
<tr>
<td>AC Output from Subfeed Breakers to the Critical Load (3) Phases, (1) Neutral, (1) Ground</td>
<td>Maximum Amps</td>
</tr>
<tr>
<td>AC Output from Output Breaker to the Critical Load (3) Phases, (1) Neutral, (1) Ground Minimum Conductor Size (Phase A, B, and C) Number per Phase</td>
<td>Maximum Amps</td>
</tr>
<tr>
<td>D Wire branch circuits in accordance with branch circuit breaker manufacturer’s ratings and instructions, power cable termination sizes listed in Table 10, and national and local electrical codes. Maximum output ratings are to be in accordance with the rating label on the IAC-D and national and local electrical codes. The total combined load is not to exceed the maximum output rating. Input is prewired to the panelboard.</td>
<td></td>
</tr>
<tr>
<td>D Wire subfeed circuits in accordance with subfeed circuit breaker manufacturer’s ratings, selected trip rating and instructions, power cable termination sizes listed in Table 10, and NFPA National Electrical Code (NEC) 70 and local electrical codes. Maximum output ratings are to be in accordance with the rating label on the IAC-D and national and local electrical codes. The total combined load is not to exceed the maximum output rating. To allow for future upgrades, consider wiring adjustable subfeed breakers for maximum rated current.</td>
<td></td>
</tr>
</tbody>
</table>
Table 7. External Output Power Wiring Recommendations for the Eaton 93PM IAC-D (208V/208V) (Continued)

<table>
<thead>
<tr>
<th>Minimum Conductor Size (Neutral) Number</th>
<th>Minimum Conductor Size (Ground) Number</th>
<th>Bonding Ground Size Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>— AWG or kcmil (each)</td>
<td>— AWG or kcmil (each)</td>
<td>— AWG or kcmil (each)</td>
</tr>
<tr>
<td>4/0 (2)</td>
<td>3 (1)</td>
<td>8 (1)</td>
</tr>
<tr>
<td>2/0 (4)</td>
<td>3 (1)</td>
<td>6 (1)</td>
</tr>
</tbody>
</table>

NOTE Callout letter D maps to the Oneline Schematics detailed in Chapter 5 Onelines and Schematics.

The power wiring terminals are pressure terminations, UL and CSA rated or 2-hole bus bar mountings for standard NEMA 2-hole barrel lugs. See Table 8 for 480V/208V IAC-D external input power cable terminations or Table 9 for 208V/208V IAC-D external input/output power cable terminations, and Table 10 for external output power cable terminations. See Table 11 for supplied external wiring terminal hardware and Table 12 for recommended installation parts and tools not supplied by Eaton.

Figure 16 and Figure 17 show the 480V/208V IAC-D input power terminal locations and detail. Figure 18 and Figure 20 show the 208V/208V IAC-D input/output power terminal locations and detail.

Figure 22 through Figure 28 and Figure 30 through Figure 33 show the IAC-D output power terminal locations and detail.

Table 8. External Input Power Cable Terminations for the Eaton 93PM IAC-D (480V/208V)

<table>
<thead>
<tr>
<th>Terminal Function</th>
<th>kW Rating</th>
<th>Terminal</th>
<th>Function</th>
<th>Number and Size of Pressure Termination (AWG or kcmil)</th>
<th>Tightening Torque Nm (lb in)</th>
<th>Type and Size Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input to IAC-D UPS Output Breaker</td>
<td>50</td>
<td>UOB-1</td>
<td>Phase A</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>UOB-3</td>
<td>Phase B</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UOB-5</td>
<td>Phase C</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>UOB-1</td>
<td>Phase A</td>
<td>1 – #4-350</td>
<td>20 (177)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UOB-3</td>
<td>Phase B</td>
<td>1 – #4-350</td>
<td>20 (177)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UOB-5</td>
<td>Phase C</td>
<td>1 – #4-350</td>
<td>20 (177)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>UOB-1</td>
<td>Phase A</td>
<td>2 – 2/0-250 or 1 – 2/0-500</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UOB-3</td>
<td>Phase B</td>
<td>2 – 2/0-250 or 1 – 2/0-500</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UOB-5</td>
<td>Phase C</td>
<td>2 – 2/0-250 or 1 – 2/0-500</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
</tbody>
</table>
Table 8. External Input Power Cable Terminations for the Eaton 93PM IAC-D (480V/208V) (Continued)

<table>
<thead>
<tr>
<th>Terminal Function</th>
<th>kW Rating</th>
<th>Terminal</th>
<th>Function</th>
<th>Number and Size of Pressure Termination (AWG or kcmil)</th>
<th>Tightening Torque Nm (lb in)</th>
<th>Type and Size Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Ground</td>
<td>50</td>
<td>G</td>
<td>Ground</td>
<td>1 – #14-1/0</td>
<td>5.1 (45)</td>
<td>Slotted</td>
</tr>
<tr>
<td>Inter-Cabinet Bonding</td>
<td>50</td>
<td>G</td>
<td>Bonding</td>
<td>1 – #14-1/0</td>
<td>5.1 (45)</td>
<td>Slotted</td>
</tr>
</tbody>
</table>

Table 9. External Input Power Cable Terminations for the Eaton 93PM IAC-D (208V/208V)

<table>
<thead>
<tr>
<th>Terminal Function</th>
<th>kW Rating</th>
<th>Terminal</th>
<th>Function</th>
<th>Number and Size of Pressure Termination (AWG or kcmil)</th>
<th>Tightening Torque Nm (lb in)</th>
<th>Type and Size Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>208 VAC Input to IAC-D from Utility Source</td>
<td>50</td>
<td>A</td>
<td>Phase A</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Phase B</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>Phase C</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>480 VAC Output to UPS from IAC-D UPS Input Breaker</td>
<td>50</td>
<td>UIB-2</td>
<td>Phase A</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UIB-4</td>
<td>Phase B</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UIB-6</td>
<td>Phase C</td>
<td>1 – #14-1/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>480 VAC Input to IAC-D from UPS</td>
<td>50</td>
<td>A</td>
<td>Phase A</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Phase B</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>Phase C</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>208 VAC Input to IAC-D from Utility Source</td>
<td>100</td>
<td>A</td>
<td>Phase A</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Phase B</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>Phase C</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>480 VAC Output to UPS from IAC-D UPS Input Breaker</td>
<td>100</td>
<td>UIB-2</td>
<td>Phase A</td>
<td>1 – #4-4/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UIB-4</td>
<td>Phase B</td>
<td>1 – #4-4/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UIB-6</td>
<td>Phase C</td>
<td>1 – #4-4/0</td>
<td>5.6 (50)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>480 VAC Input to IAC-D from UPS</td>
<td>100</td>
<td>A</td>
<td>Phase A</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Phase B</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>Phase C</td>
<td>1 – #6-500</td>
<td>56.5 (500)</td>
<td>5/16&quot; Hex</td>
</tr>
<tr>
<td>Customer Ground</td>
<td>100</td>
<td>G</td>
<td>Ground</td>
<td>2 – #14-1/0</td>
<td>5.1 (45)</td>
<td>Slotted</td>
</tr>
<tr>
<td>Inter-Cabinet Bonding</td>
<td>100</td>
<td>G</td>
<td>Bonding</td>
<td>2 – #14-1/0</td>
<td>5.1 (45)</td>
<td>Slotted</td>
</tr>
</tbody>
</table>
Table 10. External Critical Load Output Power Cable Terminations for the Eaton 93PM IAC-D

<table>
<thead>
<tr>
<th>Terminal Function</th>
<th>Breaker Rating</th>
<th>Terminal Function</th>
<th>Number and Size of Pressure Termination (AWG or kcmil)</th>
<th>Tightening Torque Nm (lb in)</th>
<th>Type and Size Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Output from Distribution Panel Breakers to Critical Load</td>
<td>N/A</td>
<td>Neutral</td>
<td>64 – #6–#14</td>
<td>2.8 (25)</td>
<td>Slotted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22 – 1/0</td>
<td>#4–#6; #8; #10–#14: 5.0 (45)</td>
<td>#8; #10–#14: 4.5 (40)</td>
</tr>
<tr>
<td>AC Output from Subfeed Breaker Terminal Block to Critical Load</td>
<td>N/A</td>
<td>A Phase A</td>
<td>1 – #6–300</td>
<td>20 (177)</td>
<td>1/2” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B Phase B</td>
<td>1 – #6–500</td>
<td>20 (177)</td>
<td>1/2” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C Phase C</td>
<td>1 – #6–500</td>
<td>20 (177)</td>
<td>1/2” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N Neutral</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G Ground</td>
<td>10 – #14–1/0</td>
<td>5.6 (50)</td>
<td>Slotted</td>
</tr>
<tr>
<td>AC Output from Optional Single Subfeed Breaker Terminal Block to Critical Load (150 kW and 200 kW only)</td>
<td>N/A</td>
<td>A Phase A</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B Phase B</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C Phase C</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N Neutral</td>
<td>2 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G Ground</td>
<td>2 – #14–1/0</td>
<td>5.6 (50)</td>
<td>Slotted</td>
</tr>
<tr>
<td>&quot;K&quot; Frame 175A (50 kW IAC-D)</td>
<td>XOB-2</td>
<td>Phase A</td>
<td>1 – #3–350</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-4</td>
<td>Phase B</td>
<td>1 – #3–350</td>
<td>31 (275)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-6</td>
<td>Phase C</td>
<td>1 – #3–350</td>
<td>31 (275)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N Neutral</td>
<td>4 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td>&quot;LG&quot; Frame 350A (100 kW IAC-D)</td>
<td>XOB-2</td>
<td>Phase A</td>
<td>2 – #2–500</td>
<td>42 (372)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-4</td>
<td>Phase B</td>
<td>2 – #2–500</td>
<td>42 (372)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-6</td>
<td>Phase C</td>
<td>2 – #2–500</td>
<td>42 (372)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N Neutral</td>
<td>4 – #6–300</td>
<td>31 (275)</td>
<td>5/16” Hex</td>
</tr>
<tr>
<td>&quot;LG&quot; Frame 600A (150 kW IAC-D)</td>
<td>XOB-A</td>
<td>Phase A</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-B</td>
<td>Phase B</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-C</td>
<td>Phase C</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N Neutral</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
</tbody>
</table>
### Table 10. External Critical Load Output Power Cable Terminations for the Eaton 93PM IAC-D (Continued)

<table>
<thead>
<tr>
<th>Terminal Function</th>
<th>Breaker Rating</th>
<th>Terminal</th>
<th>Function</th>
<th>Number and Size of Pressure Termination (AWG or kcmil)</th>
<th>Tightening Torque Nm (lb in)</th>
<th>Type and Size Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Output from Output Breaker to Critical Load (continued)</td>
<td>“MD” Frame 700A (200 kW IAC-D)</td>
<td>XOB-A</td>
<td>Phase A</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-B</td>
<td>Phase B</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>XOB-C</td>
<td>Phase C</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>Neutral</td>
<td>4 – 2 bolt mounting</td>
<td>35 (310)</td>
<td>M12 Hex</td>
</tr>
<tr>
<td>Customer Ground</td>
<td>G</td>
<td>Ground</td>
<td>10 – #14–1/0</td>
<td>5.6 (50)</td>
<td>Slotted</td>
<td></td>
</tr>
</tbody>
</table>

### Table 11. Supplied External Wiring Terminal Hardware Kit

<table>
<thead>
<tr>
<th>Part</th>
<th>Size</th>
<th>Quantity</th>
<th>Terminal Used On</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolt, Hex Head, Grade 5</td>
<td>M12 x 40mm</td>
<td>16</td>
<td>Phase and Neutral Output to Critical Load</td>
</tr>
<tr>
<td>Washer, Flat</td>
<td>M12</td>
<td>32</td>
<td>Phase and Neutral Output to Critical Load</td>
</tr>
<tr>
<td>Washer, Conical Spring</td>
<td>M12</td>
<td>16</td>
<td>Phase and Neutral Output to Critical Load</td>
</tr>
<tr>
<td>Nut, Hex</td>
<td>M12</td>
<td>16</td>
<td>Phase and Neutral Output to Critical Load</td>
</tr>
</tbody>
</table>

**NOTE** For additional information (including part numbers and manufacturer information) and/or assistance contact an Eaton service representative (see paragraph 1.8 Getting Help).

### Table 12. Recommended Installation Parts and Tools (Not Supplied by Eaton)

<table>
<thead>
<tr>
<th>Part</th>
<th>Size</th>
<th>Quantity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Barrel 2-Hole Lug</td>
<td>2/0 AWG</td>
<td>As Required</td>
<td>Copper wire only</td>
</tr>
<tr>
<td></td>
<td>3/0 AWG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/0 AWG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 MCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>300 MCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>350 MCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>400 MCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 MCM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual Hydraulic Crimp Tool</td>
<td>14 Ton</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Die Set</td>
<td>N/A</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
External 208 Vac input overcurrent protection and disconnect are not provided by the 208V/208V IAC-D model, but are required by codes. Overcurrent protection and disconnect are to be supplied by the customer. Refer to Table 5 for wiring recommendations.

Table 13 lists the recommended rating for the 208 Vac input circuit breaker. Maximum 50 kW 208V/208V IAC-D input current is 174A and maximum 100 kW 208V/208V IAC-D input current is 347A.

### Table 13. Recommended 208 Vac Input Circuit Breaker Rating

<table>
<thead>
<tr>
<th>IAC-D Model</th>
<th>Load Rating</th>
<th>Input Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 50 kW IAC-D (208V/208V)</td>
<td>80% Rated</td>
<td>225A</td>
</tr>
<tr>
<td></td>
<td>100% Rated</td>
<td>175A</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D (208V/208V)</td>
<td>80% Rated</td>
<td>450A</td>
</tr>
<tr>
<td></td>
<td>100% Rated</td>
<td>350A</td>
</tr>
</tbody>
</table>

**CAUTION**

To reduce the risk of fire, connect only to a circuit provided with maximum input circuit breaker current ratings from Table 13 in accordance with the NEC, ANSI/NFPA 70.

### 3.3 Inspecting and Unpacking the IAC-D

The cabinet is shipped bolted to a wooden pallet and covered with outer protective packaging material (see Figure 12).

**NOTE**

Startup and operational checks must be performed by an authorized Eaton Customer Service Engineer, or the warranty terms specified on the product’s resources page become void. See Chapter 9 Warranty for details. This service is offered as part of the sales contract for the UPS. Contact an Eaton service representative in advance (a minimum two-week notice is required) to reserve a preferred startup date.

**WARNING**

The IAC-D is heavy (see Table 2). If unpacking and unloading instructions are not closely followed, the cabinet may tip and cause serious injury or death.

1. Carefully inspect the outer packaging for evidence of damage during transit.

**CAUTION**

Do not install a damaged cabinet. Report any damage to the carrier and contact an Eaton service representative immediately.

**NOTE**

For the following step, verify that the forklift or pallet jack is rated to handle the weight of the cabinet (see Table 2).

2. Use a forklift or pallet jack to move the packaged cabinet to the installation site, or as close as possible, before unpacking. If possible, move the cabinet using the pallet. Insert the forklift or pallet jack forks
between the supports on the bottom of the pallet (see Figure 8 for the IAC-D cabinet center of gravity measurements).

**CAUTION**

Do not tilt the IAC-D more than 10° from vertical or the cabinet may tip over.

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 packaging material from the cabinet and recycle in a responsible manner. Retain the parts kit box packed inside the cabinet.

5. Inspect the contents for any evidence of physical damage, and compare each item with the Bill of Lading. If damage has occurred or shortages are evident, contact an Eaton service representative immediately to determine the extent of the damage and its impact on further installation.

**NOTE**

While waiting for installation, protect the unpacked cabinet from moisture, dust, and other harmful contaminants. Failure to store and protect the IAC-D properly may void your warranty.
Figure 12. Eaton 93PM IAC-D as Shipped on Metal and Wood Pallet
Chapter 4 Installation

4.1 Preliminary Installation Information

**WARNING**

Installation should be performed only by qualified personnel.

Refer to the following while installing the Eaton 93PM Integrated Accessory Cabinet-Distribution (IAC-D):

- See Chapter 3 Installation Plan and Unpacking for cabinet dimensions, equipment weight, wiring and terminal data, and installation notes.
- Do not tilt the IAC-D more than 10° vertical or the cabinet may tip over.

4.2 Unloading the IAC-D Cabinet from the Pallet

**DANGER**

RISK OF INSTABILITY. Do not remove any internal panels until the cabinet is removed from and lowered from the pallet.

**WARNING**

- The IAC-D is heavy (see Table 2).
- Do not tilt the IAC-D more than 10° from vertical or the cabinet may tip over.
- Lift the cabinets only with a forklift or pallet jack or damage may occur.
- Ensure the forklift or pallet jack is rated to handle the weight of the cabinet.

*Failure to follow these instructions may result in severe injury or death.*

**NOTE**

Before performing the IAC-D unloading, verify that the forklift or pallet jack is rated to handle the weight of the cabinet (see Table 2 for cabinet weight).

The IAC-D is bolted to a pallet consisting of two metal angle supports and two flat supports secured to two wood supports.

1. If not already accomplished, use a forklift or pallet jack to move the IAC-D to the installation area, or as close as possible, before unloading from the pallet. Insert the forklift or pallet jack forks between the supports on the bottom of the pallet (see Figure 8 for the IAC-D cabinet center of gravity measurements).

2. Open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

3. Locate the four 1/2" jacking bolts from the parts bag packed inside the front door and install them in the threaded holes in the front and rear supports as shown in Figure 13. Place a floor protector from the parts kit underneath each jacking bolt, and screw the bolts down against them.

The floor protectors protect the floor from being marred by the jacking bolts.

4. Loosen, but do not remove, the skid mounting bolts holding the left, right, front, rear, and two center supports to the pallet skids (see Figure 13). **DO NOT** loosen or remove the cabinet mounting bolts or the cabinet support bolts.
Figure 13. Removing the Pallet Skids and Supports – Eaton 93PM Integrated Accessory Cabinet-Distribution

- Jacking Bolts (2 places front) (2 places rear)
- Floor Protectors (2 places front) (2 places rear)
- Cabinet Mounting Bolts (4 places left side) (4 places right side)
- Cabinet Support Bolts (1 at each corner)
WARNING

RISK OF INSTABILITY. Turning the jacking bolts unevenly may cause the cabinet to become unbalanced. To prevent tipping the cabinet, raise the cabinet no more than 3 mm (1/8”) above the floor (just enough to allow the removal of the pallet skids). Failure to follow these instructions can result in serious injury or death.

5. Turn each jacking bolt consecutively, two full turns, until the pallet skids clear the floor by approximately 3 mm (1/8”).

NOTE

In the following step the center supports will drop away from the cabinet and the pallet skids when the skids are removed.

6. Remove the hardware loosened in Step 4. Pull the two pallet skids out from under the left, right, front, rear, and two center supports. Recycle the pallet skids, supports, and hardware in a responsible manner.

CAUTION

CABINET MAY FALL. Do not loosen the hardware attaching the front supports to the cabinet base. The cabinet must be lowered by the jacking bolts before the supports can be removed.

7. Carefully and evenly lower the cabinet by turning each jacking bolt consecutively two full turns (maximum) until the casters contact the floor and the cabinet is no longer supported by the jacking bolts.

8. After the IAC-D is resting on the floor, remove the jacking bolts and floor protectors. Recycle them in a responsible manner.

9. Remove the cabinet support bolts fastening the left, right, front, and rear supports together (see Figure 13).

10. Remove the cabinet mounting bolts holding the left, right, front, and rear supports to the cabinet base and remove the supports (see Figure 13).

11. If installing the cabinet permanently, retain the cabinet mounting bolts; otherwise, recycle the bolts along with the support brackets in a responsible manner.

12. Close the door and secure the latch.

13. If the leveling feet are not retracted, turn all four leveling feet until they are retracted as far into the cabinet as possible.

NOTE

The IAC-D may be located to either the right or left of the UPS cabinet. The recommended location is to the left of the UPS cabinet. This procedure assumes the IAC-D is located to the left of the UPS cabinet.

14. If line-up-and-match installation, remove the rectangular knockout on the bottom front side of the UPS and the IAC-D (see Figure 14).

CAUTION

To prevent tipping when rolling the cabinet, push the cabinet from the rear whenever possible.

15. Roll the IAC-D to the line-up-and-match installation location on the left side of the UPS cabinet making sure the doors are flush with each other or to the standalone installation location.

16. Lower the IAC-D cabinet’s feet and using a level, adjust the cabinet height accordingly until the cabinet is level.

17. Locate the top splice bracket shipped with the IAC-D.
18. Remove the screws along each adjacent cabinet top panel securing the top panels. Retain the hardware for later use.

19. Install the top splice bracket between the adjacent cabinet and secure the tie strap with retained hardware.

**NOTE** Optional front and back floor mounting brackets are available to order for permanently mounting the IAC-D.

20. If permanently mounting the IAC-D, proceed to Step 21; otherwise, continue to Step 24.

21. Locate the front and back floor mounting brackets from the optional floor mounting kit.

22. Using the cabinet mounting bolts from the kit, install the floor mounting brackets to the front and rear of the IAC-D with the angle facing outward.

23. Secure the cabinet to the floor with customer-supplied hardware.

24. Proceed to paragraph 4.3 *Installing IAC-D External Power Wiring*.

**Figure 14. Line-Up-and-Match Wiring Access Locations**
4.3 Installing IAC-D External Power Wiring

If wiring a 480V/208V IAC-D, proceed to paragraph 4.3.1 Input Wiring (480V/208V); if wiring a 208V/208V IAC-D, proceed to paragraph 4.3.2 Input Wiring (208V/208V).

4.3.1 Input Wiring (480V/208V)

To install wiring to connections:

**NOTE 1** Input power wiring is routed through the inside bottom of the IAC-D and UPS for line-up-and-match configurations or wiring can be installed using conduit between the cabinets for standalone installations.

**NOTE 2** Remove the IAC-D conduit landing plates to drill or punch conduit holes, or remove knockouts in the conduit plate (see Figure 15).

1. Verify the UPS system is turned off and all power sources are removed. See Chapter 6 Integrated Accessory Cabinet-Distribution Operating Instructions for shutdown instructions.
2. If not already open, open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

3. Loosen the screws securing the inside distribution panel door and swing the door open.

4. Remove the screws securing the breaker trim plate and remove the plate. Retain trim plate and hardware for later use.

5. If wiring the IAC-D input power terminals using the inter-cabinet wiring access pass-through (line-up-and-match configurations), proceed to Step 6; if wiring the IAC-D input power terminals using the bottom entry access, proceed to Step 8; if wiring the IAC-D input power terminals using the top entry access, proceed to Step 11.

6. **Pass-through Wiring.** Route the IAC-D input cables (phase A, B, and C and Ground) from the UPS cabinet through the bottom UPS and IAC-D inter-cabinet wiring access pass-through to the IAC-D input terminals. See Figure 14 for IAC-D wiring access information and Figure 16 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 4, and Table 8 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.


8. **Bottom Entry Wiring.** Remove the bottom conduit plate (see Figure 15) from the inside bottom of the IAC-D. Identify all conduit requirements (both input and output) and mark their location. Drill and punch all conduit holes in the bottom conduit plate prior to mounting on the IAC-D. Install the conduit plate and install all conduit runs into the plate. Pull the wiring through conduit into the wiring area.

9. Route the output cables (phase A, B, and C and Ground) from the UPS through the bottom of the cabinet to the IAC-D input terminals. See Figure 16 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 4, and Table 8 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.


11. **Top Entry Wiring.** Remove the top conduit plate (see Figure 15) from the top of the IAC-D. Identify all conduit requirements (both input and output) and mark their location. Drill and punch all conduit holes in the top conduit plate prior to mounting on the sidecar. Install the conduit plate and install all conduit runs into the plate. Pull the wiring through the conduit into the wiring area.

12. Route the output cables (phase A, B, and C and Ground) from the UPS through the top of the cabinet to the IAC-D input terminals. See Figure 16 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 4, and Table 8 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

13. Connect the Ground and phase A, B, and C power wiring to the corresponding input terminals on the IAC-D.

   For a detailed view of the IAC-D input terminals, see Figure 17.

14. Connect the Ground and phase A, B, and C power wiring to the corresponding output terminals on the UPS.

15. Proceed to paragraph 4.3.3 50 kW and 100 kW Output Wiring for 50 kW and 100 kW output wiring or 4.3.4 Two-Hole Barrel Lug Terminations to Bus Bar Installation for 150 kW and 200 kW output wiring.
Figure 16. Input Power Terminal Locations – 480V/208V

NOTE: The IAC-D is shown with top and bottom panelboards. However, the input and ground terminal locations are the same for all configurations.
4.3.2 Input Wiring (208V/208V)

NOTE 1 Input power wiring is routed through the inside bottom of the IAC-D and UPS for line-up-and-match configurations or wiring can be installed using conduit between the cabinets for standalone installations.

NOTE 2 Remove the IAC-D conduit landing plates to drill or punch conduit holes, or remove knockouts in the conduit plate (see Figure 15).

NOTE 3 If installing the IAC-D with a Sidecar Integrated Accessory Cabinet-Bypass (SIAC-B) or wall mount maintenance bypass see paragraph 3.2.3 208V/208V IAC-D Power Wiring Preparation with Maintenance Bypass.

1. Verify the UPS system is turned off and all power sources are removed. See Chapter 6 Integrated Accessory Cabinet-Distribution Operating Instructions for shutdown instructions.

2. If not already open, open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

3. Loosen the screws securing the inside distribution panel door and swing the door open.

4. Remove the screws securing the breaker trim plate and remove the plate. Retain trim plate and hardware for later use.

5. If wiring the IAC-D input power terminals using the inter-cabinet wiring access pass-through (line-up-and-match configurations), proceed to Step 6; if wiring the IAC-D input power terminals using the bottom entry access, proceed to Step 16; if wiring the IAC-D input power terminals using the top entry access, proceed to Step 26.

6. **Pass-through Wiring.** Remove the top or bottom conduit plate (see Figure 15) from the top of the IAC-D or the inside bottom of the IAC-D. Identify all conduit requirements (both input and output) and mark their
location. Drill and punch all conduit holes in the top or bottom conduit plate prior to mounting on the IAC-D. Install the conduit plate and install all conduit runs into the plate. Pull the wiring through conduit into the wiring area.

7. Route the 208 VAC input cables (phase A, B, and C and Ground) from the utility source through the top or bottom of the cabinet to the IAC-D 208 VAC utility source input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements.

8. Connect the Ground and phase A, B, and C power wiring to the corresponding 208 VAC utility source input terminals on the IAC-D.

For a detailed view of the IAC-D utility source input terminals, see Figure 19.

9. Route the 480 VAC output cables (phase A, B, and C and Ground) from the IAC-D through the bottom IAC-D and UPS inter-cabinet wiring access pass-through to the UPS rectifier input terminals. See Figure 14 for IAC-D wiring access information and Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

10. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC output terminals on the IAC-D.

For a detailed view of the IAC-D 480 VAC output terminals, see Figure 20.

11. Connect the Ground and phase A, B, and C power wiring to the corresponding rectifier input terminals on the UPS.

12. Route the 480 VAC output cables (phase A, B, and C and Ground) from the UPS through the bottom UPS and IAC-D inter-cabinet wiring access pass-through to the IAC-D 480 VAC input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

13. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC input terminals on the IAC-D.

For a detailed view of the IAC-D 480 VAC input terminals, see Figure 21.

14. Connect the Ground and phase A, B, and C power wiring to the corresponding output terminals on the UPS.

15. Proceed to Step 35.

16. **Bottom Entry Wiring.** Remove the bottom conduit plate (see Figure 15) from the inside bottom of the IAC-D. Identify all conduit requirements (both input and output) and mark their location. Drill and punch all conduit holes in the bottom conduit plate prior to mounting on the IAC-D. Install the conduit plate and install all conduit runs into the plate. Pull the wiring through conduit into the wiring area.

17. Route the 208 VAC input cables (phase A, B, and C and Ground) from the utility source through the bottom of the cabinet to the IAC-D 208 VAC utility source input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements.

18. Connect the Ground and phase A, B, and C power wiring to the corresponding 208 VAC utility source input terminals on the IAC-D.

For a detailed view of the IAC-D utility source input terminals, see Figure 19.

19. Route the 480 VAC output cables (phase A, B, and C and Ground) from the IAC-D through the bottom of the cabinet to the UPS rectifier input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements.
Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

20. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC output terminals on the IAC-D.

For a detailed view of the IAC-D 480 VAC output terminals, see Figure 20.

21. Connect the Ground and phase A, B, and C power wiring to the corresponding rectifier input terminals on the UPS.

22. Route the 480 VAC output cables (phase A, B, and C and Ground) from the UPS through the bottom of the cabinet to the IAC-D 480 VAC input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

23. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC input terminals on the IAC-D.

For a detailed view of the IAC-D 480 VAC input terminals, see Figure 21.

24. Connect the Ground and phase A, B, and C power wiring to the corresponding output terminals on the UPS.

25. Proceed to Step 35.

26. **Top Entry Wiring.** Remove the top conduit plate (see Figure 15) from the top of the IAC-D. Identify all conduit requirements (both input and output) and mark their location. Drill and punch all conduit holes in the top conduit plate prior to mounting on the sidecar. Install the conduit plate and install all conduit runs into the plate. Pull the wiring through the conduit into the wiring area.

27. Route the 208 VAC input cables (phase A, B, and C and Ground) from the utility source through the top of the cabinet to the IAC-D 208 VAC utility source input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements.

28. Connect the Ground and phase A, B, and C power wiring to the corresponding 208 VAC utility source input terminals on the IAC-D.

For a detailed view of the IAC-D utility source input terminals, see Figure 19.

29. Route the 480 VAC output cables (phase A, B, and C and Ground) from the IAC-D through the top of the cabinet to the UPS rectifier input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

30. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC output terminals on the IAC-D.

For a detailed view of the IAC-D 480 VAC output terminals, see Figure 20.

31. Connect the Ground and phase A, B, and C power wiring to the corresponding rectifier input terminals on the UPS.

32. Route the 480 VAC output cables (phase A, B, and C and Ground) from the UPS through the top of the cabinet to the IAC-D 480 VAC input terminals. See Figure 18 for IAC-D terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 5, and Table 9 for IAC-D wiring and termination requirements. Refer to the applicable Eaton 93PM UPS manual, listed in paragraph 1.7 For More Information, for the UPS terminal locations and termination requirements.

33. Connect the Ground and phase A, B, and C power wiring to the corresponding 480 VAC input terminals on the IAC-D.
For a detailed view of the IAC-D 480 VAC input terminals, see Figure 21.

34. Connect the Ground and phase A, B, and C power wiring to the corresponding output terminals on the UPS.

35. Proceed to paragraph 4.3.50 kW and 100 kW Output Wiring for 50 kW and 100 kW output wiring.

**Figure 18. Input Power Terminal Locations – 208V/208V**

![Diagram of input power terminal locations.](image-url)

**NOTE:** The IAC-D is shown without output options.
Figure 19. 208 VAC Input to IAC-D from Utility Source Terminal Detail – 208V/208V

Figure 20. UPS Input Breaker Power Terminal Detail – 208V/208V
To install wiring to connections:

1. If not already open, open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

2. Loosen the screws securing the inside distribution panel door and swing the door open.

3. Loosen the screws securing the inside trim plate(s) and remove the plate(s). Retain trim plate(s) and hardware for later use.

4. If wiring an IAC-D with distribution panels, continue to Step 5; if wiring an IAC-D with subfeed breakers or an output breaker, skip to Step 8.

5. Install customer-supplied branch circuit breakers into the distribution panel (see Figure 22 or Figure 23). Use Cutler-Hammer bolt-on type BAB or QBHW breakers.

**NOTE** When wiring branch circuits, begin adding conduits at the back of the bottom or top conduit landing plates to simplify future circuit additions.

6. Route output cables to the branch circuit breakers and wire the branch circuits according to the branch circuit breaker manufacturer’s ratings and instructions, and national and local electrical codes (input is prewired to the panelboard). See Figure 22 or Figure 23 for neutral and ground terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 6 or Table 7, and Table 10 for IAC-D wiring and termination requirements.

7. If wiring an IAC-D with subfeed breakers or an output breaker, continue to Step 8; otherwise, skip to Step 11.

**NOTE** When wiring subfeed branch circuits, begin adding conduits at the back of the bottom or top conduit landing plates to simplify future circuit additions.

8. Route output cables from subfeed breaker terminal blocks or output breaker to the critical load. See Figure 23, Figure 25, or Figure 27 for IAC-D output, neutral, and ground terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 6 or Table 7, and Table 10 for IAC-D wiring and termination requirements.

9. Connect Ground, phase A, B, and C, and Neutral power wiring to the subfeed breaker terminal blocks or output breaker and the critical load.

For a detailed view of the IAC-D output terminals, see Figure 24, Figure 26, or Figure 28.
Installation

10. If adjustable subfeed breakers are installed, proceed to paragraph 4.4 Adjustable Subfeed Breakers to adjust current trip settings; otherwise, proceed to Step 11.

11. Reinstall the inside trim plate removed in Step 3.

12. Close the inside door and secure with screws.

13. Close the outside door and secure the latch.

14. After the IAC-D is installed and wired, return to the applicable Eaton 93PM UPS installation and operation manual listed in paragraph 1.7 For More Information to complete the UPS wiring.
Figure 22. Distribution Panel Output Power Terminal Locations – 50 kW and 100 kW

NOTE 1: The IAC-D is shown with both top and bottom panelboards. However, the installed configuration may contain only a top or bottom panelboard or a combination of one panelboard and up to three subfeed breakers.

NOTE 2: The bottom panelboard is not available with the 208V/208V IAC-D.
Figure 23. Top Distribution Panel and Bottom Subfeed Breaker Output Power Terminal Locations

NOTE: The IAC-D is shown with a top panelboard and three subfeed breakers. However, the installed configuration may contain one to three subfeed breakers.
Figure 24. Bottom Subfeed Breaker Output Power Terminal Detail

Subfeed Breaker 1 Output Terminal Block

Subfeed Breaker 2 Output Terminal Block

Subfeed Breaker 3 Output Terminal Block

Phase A
Phase B
Phase C
AC Output to Critical Load

Phase A
Phase B
Phase C
AC Output to Critical Load

Phase A
Phase B
Phase C
AC Output to Critical Load
Figure 25. Subfeed Breaker Output Power Terminal Locations

**NOTE:** The IAC-D is shown with five subfeed breakers. However, the installed configuration may contain one to five subfeed breakers.
Figure 26. Subfeed Breaker Output Power Terminal Detail

Subfeed Breaker 1 Output Terminal Block

Subfeed Breaker 2 Output Terminal Block

Subfeed Breaker 3 Output Terminal Block

Subfeed Breaker 4 Output Terminal Block

Subfeed Breaker 5 Output Terminal Block

Phase A

Phase B

Phase C

AC Output to Critical Load

AC Output to Critical Load

AC Output to Critical Load

AC Output to Critical Load

AC Output to Critical Load

Phase A

Phase B

Phase C

Phase A

Phase B

Phase C

Phase A

Phase B

Phase C

Phase A

Phase B

Phase C

Phase A

Phase B

Phase C
Figure 27. Output Breaker Output Power Terminal Locations – 50 kW and 100 kW
4.3.4 Two-Hole Barrel Lug Terminations to Bus Bar Installation

Paragraph 4.3.5 150 kW and 200 kW Output Wiring requires connecting the output breaker power wiring using 2-hole barrel lugs (see Table 12 for recommended lugs). See Figure 29 for the hardware sequence when installing the lugs to the bus bars. Tighten the bolt to the torque value listed in Table 10.

Proceed to paragraph 4.3.5 150 kW and 200 kW Output Wiring.

**NOTE**
Conical washers are special purpose washers that look similar to flat washers, except for a slight conical shape. When installing conical washers, the top of the dome should be next to the bolt head and the base of the washer should be against a flat surface such as a bus bar, flat washer, or large terminal.
To install wiring to connections:

1. If not already open, open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

2. Loosen the screws securing the inside distribution panel door and swing the door open.

3. Loosen the screws securing the inside trim plate(s) and remove the plate(s). Retain trim plate(s) and hardware for later use.

4. If wiring an IAC-D with distribution panels, continue to Step 5; if wiring an IAC-D with subfeed breakers or an output breaker, skip to Step 7.

5. Install customer-supplied branch circuit breakers into the distribution panel (see Figure 23 or Figure 30). Use Cutler-Hammer bolt-on type BAB or QBHW breakers.

**NOTE**
When wiring branch circuits, begin adding conduits at the back of the bottom or top conduit landing plates to simplify future circuit additions.

6. Route output cables to the branch circuit breakers and wire the branch circuits according to the branch circuit breaker manufacturer’s ratings and instructions, and national and local electrical codes (input is prewired to the panelboard). See Figure 23 or Figure 30, for neutral and ground terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 6 and Table 10 for IAC-D wiring and termination requirements.

7. If wiring an IAC-D with subfeed breakers or single subfeed breaker, continue to Step 8; if wiring an IAC-D with an output breaker, continue to Step 11, otherwise, skip to Step 14.

**NOTE**
When wiring subfeed branch circuits, begin adding conduits at the back of the bottom or top conduit landing plates to simplify future circuit additions.

8. Route output cables from subfeed breaker terminal blocks to the critical load. See Figure 23, Figure 25, or Figure 30 for IAC-D output, neutral, and ground terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 6 and Table 10 for IAC-D wiring and termination requirements.

9. Connect Ground, phase A, B, and C, and Neutral power wiring to the subfeed breaker terminal blocks and the critical load.

For a detailed view of the IAC-D output terminals, see Figure 24, Figure 26, or Figure 31.
10. If adjustable subfeed breakers are installed, proceed to paragraph 4.4 Adjustable Subfeed Breakers to adjust current trip settings; otherwise, proceed to Step 14.

11. Locate the external wiring terminal hardware kit (see Table 11) packed at the bottom of the IAC-D.

12. Route output cables from output breaker to the critical load. See Figure 32 for IAC-D output, neutral, and ground terminal locations. See paragraph 3.2.2 IAC-D Power Wiring Preparation, Table 6 and Table 10 for IAC-D wiring and termination requirements.

13. Using hardware from the external wiring terminal hardware kit, Connect Ground, phase A, B, and C, and Neutral power wiring to the output breaker and the critical load.

   For a detailed view of the IAC-D terminals, see Figure 33.

14. Reinstall the inside trim plate removed in Step 3.

15. Close the inside door and secure with screws.

16. Close the outside door and secure the latch.

17. After the IAC-D is installed and wired, return to the applicable Eaton 93PM UPS installation and operation manual listed in paragraph 1.7 For More Information to complete the UPS wiring.
Figure 30. Distribution Panel Output Power Terminal Locations – 150 kW and 200 kW

NOTE: The IAC-D is shown with both top and bottom panelboards. However, the installed configuration may contain only a top or bottom panelboard or a combination of one panelboard and up to three subfeed breakers.
Figure 31. Single Subfeed Breaker Output Power Terminal Detail – 150 kW and 200 kW
Figure 32. Output Breaker Output Power Terminal Locations – 150 kW and 200 kW
4.4 Adjustable Subfeed Breakers

The JG-Frame subfeed breakers installed in the IAC-D contain adjustable current trip settings. The continuous current (Ir) values for the corresponding lettered adjustment setting marked on the subfeed breakers are listed in Table 14.

To adjust breaker:

1. If not already open, open the front door (see Figure 13) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

2. Loosen the screws securing the inside distribution panel door and swing the door open.

3. Loosen the screws securing the inside trim plate(s) and remove the plate(s). Retain trim plate(s) and hardware for later use.
4. Using the dial on the subfeed breaker adjust the breaker current rating as required to protect the wiring to the load. See **Table 14** for the breaker continuous current adjustment letter.

5. Reinstall the inside trim plate removed in **Step 3**.

6. Close the inside door and secure with screws.

7. Close the outside door and secure the latch.

8. After the IAC-D is installed and wired, return to the applicable Eaton 93PM UPS installation and operation manual listed in paragraph **1.7 For More Information** to complete the UPS wiring.

**Table 14. Subfeed Breaker Continuous Current (I<sub>r</sub>) Settings**

<table>
<thead>
<tr>
<th>Breaker Setting</th>
<th>Continuous Current (I&lt;sub&gt;r&lt;/sub&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100A</td>
</tr>
<tr>
<td>B</td>
<td>125A</td>
</tr>
<tr>
<td>C</td>
<td>150A</td>
</tr>
<tr>
<td>D</td>
<td>160A</td>
</tr>
<tr>
<td>E</td>
<td>175A</td>
</tr>
<tr>
<td>F</td>
<td>200A</td>
</tr>
<tr>
<td>G</td>
<td>225A</td>
</tr>
<tr>
<td>H</td>
<td>250A</td>
</tr>
</tbody>
</table>

### 4.5 Neutral CT Interface Wiring

**NOTE 1**  
Neutral CT interface wiring can be installed using the inter-cabinet wiring access pass through (line-up-and-match configurations) or conduit between cabinets (standalone configurations).

**NOTE 2**  
If using conduit, install the control wiring in separate conduit from the power wiring.

**NOTE 3**  
Remove the IAC-D conduit landing plates to drill or punch conduit holes, or remove knockouts in the conduit plate (see **Figure 15**).

#### 4.5.1 Line-Up-and-Match Configuration

To install wiring:

1. Verify the UPS system is turned off and all power sources are removed. Refer to the applicable Eaton 93PM UPS Installation and Operation manual listed in paragraph **1.7 For More Information**, for UPS operating procedures.

2. If not already open, open the IAC-D front door (see **Figure 13**) by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

3. Loosen the screws securing the inside distribution panel door and swing the door open.

4. If not already opened, open the UPS front door by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.

5. If not already removed, remove the screws securing the bottom internal safety shield panel and remove the panel to gain access to the interface terminals. Retain the hardware for later use.

6. If wiring the IAC-D Neutral CT interface terminals using the inter-cabinet wiring access pass-through (line-up-and-match configurations), proceed to **Step 7**: if wiring the IAC-T input power terminals using the
bottom entry access, proceed to Step 10; if wiring the IAC-T input power terminals using the top entry sidecar, proceed to Step 13.

7. **Pass-through Wiring.** Locate the Neutral CT wiring harness in the bottom of the IAC-D.

8. Route the Neutral CT interface wiring between the IAC-D interface terminal block TB-CT and the UPS cabinet Neutral CT interface terminals using the inter-cabinet wiring access pass-through. Secure harness to wire tie anchors on right inside of IAC-D. See Figure 14 for wiring access information, and Figure 34 for IAC-D Neutral CT interface terminal location. See Figure 36, Figure 37, or Figure 38 for UPS Neutral CT interface terminal location. refer to the applicable Eaton 93PM UPS Installation and Operation manual, listed in paragraph 1.7 For More Information, for the UPS wiring access information.


10. **Bottom Entry Wiring.** Using blue/white twisted pair (1 turn per 1 inch) 22AWG (Multi-strand), 600V, 105°C wire, route the Neutral CT interface wiring between the IAC-D interface terminal block TB-CT and the UPS cabinet Neutral CT interface terminals using the bottom entry conduit landing plates on the IAC-D and the UPS. Secure wiring to wire tie anchors on right inside of IAC-D. See Figure 15 for wiring access information, and Figure 34 for IAC-D Neutral CT interface terminal location. See Figure 36, Figure 37, or Figure 38 for UPS Neutral CT interface terminal location. and refer to the applicable Eaton 93PM UPS Installation and Operation manual, listed in paragraph 1.7 For More Information, for the UPS wiring access information.

11. Install fully insulated 22-18 AWG Faston connectors (AMP 2-520183-2 or equivalent) on the UPS end of the Neutral CT interface wiring.

12. Proceed to Step 15.

13. **Top Entry Wiring.** Using blue/white twisted pair (1 turn per 1 inch) 22AWG (Multi-strand), 600V, 105°C wire, route the Neutral CT interface wiring between the IAC-D interface terminal block TB-CT and the UPS cabinet Neutral CT interface terminals using the top entry conduit landing plates on the IAC-D and the UPS. Secure wiring to wire tie anchors on right inside of IAC-D. See Figure 15 for wiring access information, and Figure 34 for IAC-D Neutral CT interface terminal location. See Figure 36, Figure 37, or Figure 38 for UPS Neutral CT interface terminal location. and refer to the applicable Eaton 93PM UPS Installation and Operation manual, listed in paragraph 1.7 For More Information, for the UPS wiring access information, terminal locations, and termination requirements.

14. Install fully insulated 22-18 AWG Faston connectors (AMP 2-520183-2 or equivalent) on the UPS end of the Neutral CT interface wiring.

15. If installed, remove the jumper from terminal block and connect the IAC-D Neutral CT interface wiring to the IAC-D Neutral CT terminals. See paragraph 3.2.2 IAC-D Power Wiring Preparation, and Table 15 for terminal block wiring, terminal assignments, and termination requirements.

For a detailed view of the IAC-T terminals, see Figure 35.

16. Connect the Neutral CT Faston connectors from the IAC-D to the UPS Neutral CT Faston connectors (blue wire J19+ to blue wire P19+ and white wire J19– to white wire P19–).

17. Close the IAC-D inside door and secure with screws.

18. Close the IAC-D outside door and secure the latch.

19. Reinstall the UPS internal safety shield panel removed in Step 5.

20. Close the UPS outside door and secure the latch.

21. After the IAC-D is installed and wired, return to the applicable Eaton 93PM UPS installation and operation manual listed in paragraph 1.7 For More Information to complete the UPS wiring.
Figure 34. 93PM IAC-D Neutral CT Interface Terminal Location
Figure 35. 93PM IAC-D Neutral CT Interface Terminal Detail

Table 15. IAC-D Neutral CT Interface Wiring Terminal Block Terminations

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Name</th>
<th>Description</th>
<th>Recommended Wire Size</th>
<th>Size of Pressure Termination</th>
<th>Tightening Torque</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TB-1</td>
<td>Neutral CT Positive</td>
<td>Twisted Pair Wires #18 AWG (600V, 105°C)</td>
<td>#12 - #26 AWG</td>
<td>0.4 (3.5) - 0.8 (7.1)</td>
<td>Strip wire insulation back 7 millimeters to wire terminal blocks.</td>
</tr>
<tr>
<td>2</td>
<td>TB-2</td>
<td>Neutral CT Negative</td>
<td>Twisted Pair Wires #18 AWG (600V, 105°C)</td>
<td>#12 - #26 AWG</td>
<td>0.4 (3.5) - 0.8 (7.1)</td>
<td>Strip wire insulation back 7 millimeters to wire terminal blocks.</td>
</tr>
</tbody>
</table>
Figure 36. 50 kW UPS Neutral CT Interface Terminal Location

Neutral CT Wire
Faston Connectors
located at this opening.
Figure 37. 100 kW and 150 kW Capacity UPS Neutral CT Interface Terminal Location

Neutral CT Wire
Faston Connectors
located at this opening.
**4.6 Initial Startup**

Startup and operational checks must be performed by an authorized Eaton Customer Service Engineer, or the warranty terms specified on the product’s resources page become void. See Chapter 9 Warranty for details. This service is offered as part of the sales contract for the UPS. Contact an Eaton service representative in advance (a minimum two-week notice is required) to reserve a preferred startup date.
4.7 Completing the Installation Checklist

The final step in installing the IAC-D is completing the following Installation Checklist. This checklist ensures that you have completely installed all hardware, cables, and other equipment. Complete all items listed on the checklist to ensure a smooth installation. Make a copy of the Installation Checklist before filling it out, and retain the original.

After the installation is complete, an Eaton Customer Service Engineer must verify the operation of the UPS system and commission it to support the critical load. The service representative cannot perform any installation tasks other than verifying software and operating setup parameters. Service personnel may request a copy of the completed Installation Checklist to verify all applicable equipment installations have been completed.

NOTE: The Installation Checklist MUST be completed prior to starting the UPS system for the first time.

4.8 Installation Checklist

- All packing materials and restraints have been removed from each cabinet.
- The IAC-D is installed on a level floor suitable for computer or electronic equipment.
- The IAC-D is placed in its installed location
- The IAC-D is secured to the building floor or attached to the adjacent 93PM system cabinet with the cabinet bracket
- All conduits and cables are properly routed between the IAC-D and the UPS.
- All power cables are properly sized and terminated.
- Distribution Panel branch circuit breakers are installed and wired to load.
- A ground conductor is properly installed.
- All terminal cover plates are installed.
- Air conditioning equipment is installed and operating correctly.
- The area around the UPS system is clean and dust-free.
- Adequate workspace exists around the IAC-D and other cabinets.
- Adequate lighting is provided around all IAC-D and UPS equipment.
- A 120 Vac service outlet is located within 7.5 meters (25 feet) of the IAC-D and UPS equipment.
- Startup and operational checks are performed by an authorized Eaton Customer Service Engineer.
Chapter 5  Onelines and Schematics

5.1  Onelines

Figure 39 through Figure 46 show the simplified internal structure of the Integrated Accessory Cabinet-Distribution (IAC-D).

Figure 39. 93PM IAC-D (480V/208V) Internal Oneline – 50 kW, 100 kW, 150 kW, and 200 kW with Two PRL1A Panelboards

Figure 40. 93PM IAC-D (480V/208V) Internal Oneline – 150 kW and 200 kW with Two PRL1A Panelboards and Optional Single Subfeed Breaker
Figure 41. 93PM IAC-D (480V/208V) Internal Oneline – 50 kW, 100 kW, 150 kW, and 200 kW with Top PRL1A Panelboard and Three 100–250A Adjustable Subfeed Breakers

NOTE:
- 50 kW model – fans not used
- 100 kW model – fans optional
- 150 kW model – fans installed
- 200 kW model – fans installed

Figure 42. 93PM IAC-D (480V/208V) Internal Oneline – 50 kW, 100 kW, 150 kW, and 200 kW with Five 100–250A Adjustable Subfeed Breakers

NOTE:
- 50 kW model – fans not used
- 100 kW model – fans optional
- 150 kW model – fans installed
- 200 kW model – fans installed
Figure 43. 93PM IAC-D (480V/208V) Internal Oneline – 175A, 350A, 600A, or 700A Output Breaker

NOTE: 50 kW model – fans not used
100 kW model – fans optional
150 kW model – fans installed
200 kW model – fans installed

Figure 44. 93PM IAC-D (208V/208V) Internal Oneline – 50 kW and 100 kW with Top PRL1A Panelboard and Three 100–250A Adjustable Subfeed Breakers

NOTE: 50 kW and 100 kW (208V/208V) models – fans installed
5.2 Schematics

Figure 47 through Figure 61 show the IAC-D schematics.
Figure 47. 93PM IAC-D (50 kW and 100 kW, 480V/208V) Schematic – Two PRL1A Panelboards without Fans
Figure 48. 93PM IAC-D (100 kW, 480V/208V) Schematic – Two PRL1A Panelboards with Fans
Figure 49. 93PM IAC-D (150 kW and 200 kW, 480V/208V) Schematic – Two PRL1A Panelboards

93PM IAC-D 150 kW
93PM IAC-D 200 kW
Figure 50. 93PM IAC-D (50 kW and 100 kW, 480V/208V) Schematic – Top PRL1A Panelboard and Three 100-250A Adjustable Subfeed Breakers without Fans
Figure 51. 93PM IAC-D (100 kW, 480V/208V) Schematic – Top PRL1A Panelboard and Three 100-250A Adjustable Subfeed Breakers with Fans
Figure 52. 93PM IAC-D (150 kW and 200 kW, 480V/208V) Schematic – Top PRL1A Panelboard and Three 100-250A Adjustable Subfeed Breakers
Figure 53. 93PM IAC-D (50 kW and 100 kW, 480V/208V) Schematic – Five 100-250A Adjustable Subfeed Breakers without Fans
Figure 54. 93PM IAC-D (100 kW, 480V/208V) Schematic – Five 100-250A Adjustable Subfeed Breakers with Fans
Figure 55. 93PM IAC-D (150 kW and 200 kW, 480V/208V) Schematic – Five 100-250A Adjustable Subfeed Breakers
Figure 56. 93PM IAC-D (50 kW or 100 kW 480V/208V) Schematic – 175A or 350A Output Breaker without Fans
Figure 57. 93PM IAC-D (100 kW, 480V/208V) Schematic – 350A Output Breaker with Fans
Figure 58. 93PM IAC-D (150 kW and 200 kW, 480V/208V) Schematic – 600A or 700A Output Breaker
Figure 59. 93PM IAC-D (50 kW and 100 kW, 208V/208V) Schematic – Top PRL1A Panelboard and Three 100-250A Adjustable Subfeed Breakers
Figure 60. 93PM IAC-D (50 kW and 100 kW, 208V/208V) Schematic – Five 100-250A Adjustable Subfeed Breakers
Figure 61. 93PM IAC-D (50 kW and 100 kW, 208V/208V) Schematic – 175A or 350A Output Breaker
Chapter 6 Integrated Accessory Cabinet-Distribution Operating Instructions

This section describes how to operate the Integrated Accessory Cabinet-Distribution (IAC-D).

NOTE 1 Before using the IAC-D, ensure all installation tasks are complete and a preliminary startup has been performed by authorized service personnel. The preliminary startup verifies all electrical interconnections to ensure the installation was successful and the system operates properly.

NOTE 2 Read this section of the manual and have thorough knowledge of IAC-D operation before attempting to operate any of the controls.

6.1 IAC-D Breakers

Figure 62 through Figure 65 identify and show the location of the breakers on the IAC-D.

The IAC-Ds can contain the following breakers:

- **UPS Output Breaker (480V/208V IAC-D)** – Controls the 480V output from the UPS to the IAC-D
- **UPS Input Breaker (208V/208V IAC-D)** – Controls the 480V input to the UPS from the IAC-D
- **Distribution Panel Input Breaker** – Controls input to the distribution panel
- **Distribution Panel** – Provides up to 42 branch circuits per panel to distribute the output power to the loads
- **Subfeed Breakers** – Up to five optional subfeed breakers for high current loads
- **Output Breaker** – Provides a single output breaker when no distribution is required

6.2 IAC-D Operation

To operate the IAC-D:

1. Open the front door by lifting the latch from the bottom and turning to the right (counterclockwise) and swing the door open.
2. Verify that the IAC-D circuit breakers are set as follows:

<table>
<thead>
<tr>
<th>Breaker Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS Output Breaker (only installed on 480V/208V IAC-D)</td>
<td>OPEN</td>
</tr>
<tr>
<td>UPS Input Breaker (only installed on 208V/208V IAC-D)</td>
<td>OPEN</td>
</tr>
<tr>
<td>Distribution Panel Input Breaker</td>
<td>OPEN</td>
</tr>
<tr>
<td>Distribution Panel Branch Breakers</td>
<td>OPEN</td>
</tr>
<tr>
<td>Subfeed Breakers (if installed)</td>
<td>OPEN</td>
</tr>
<tr>
<td>Output Breaker (if installed)</td>
<td>OPEN</td>
</tr>
</tbody>
</table>

3. If operating a 208V/208V IAC-D, close the UPS Input Breaker.
4. Start the UPS. Refer to the applicable Eaton 93PM UPS Installation and Operation manual listed in paragraph 1.7 For More Information for UPS operating procedures.
5. If operating a 480V/208V IAC-D, close the UPS Output Breaker
6. Close the distribution panel input breaker.
7. Close the distribution panel branch breakers
8. Close the subfeed breakers (if installed).
9. Close the output breaker (if installed).
10. Close the door and secure the latch.

**Figure 62. 93PM IAC-D Breakers – Two Panelboards**

**NOTE:** The IAC-D is shown with both top and bottom panelboards. However, the installed configuration may contain only a top or bottom panelboard.
Figure 63. 93PM IAC-D Breakers – Top Panelboard with Subfeed Breakers

NOTE: The IAC-D is shown with three 100-250A adjustable subfeed breakers. However, the installed configuration may contain one to three 100-250A adjustable subfeed breakers.
Figure 64. 93PM IAC-D Breakers – Subfeed Breakers

Subfeed Breaker 1
Subfeed Breaker 2
Subfeed Breaker 3
Subfeed Breaker 4
Subfeed Breaker 5

UPS Output Breaker (480V/208V IAC-D)
or
UPS Input Breaker (208V/208V IAC-D)

NOTE: The IAC-D is shown with five 100-250A adjustable subfeed breakers. However, the installed configuration may contain one to five 100-250A adjustable subfeed breakers.
Figure 65. 93PM IAC-D Breakers – Output Breaker

UPS Output Breaker (480V/208V IAC-D)
or
UPS Input Breaker (208V/208V IAC-D)
Chapter 7  Maintenance

The components inside the IAC-D are secured to a sturdy metal frame. All repairable parts and assemblies are located for easy removal, with very little disassembly. This design allows authorized service personnel to quickly perform routine maintenance and servicing.

You must schedule periodic performance checks of the UPS system to keep it running properly. Regular routine checks of operation and system parameters enable your system to function efficiently for many trouble-free years.

7.1  Important Safety Instructions

Remember that your UPS system is designed to supply power **EVEN WHEN DISCONNECTED FROM THE UTILITY POWER**.

---

**WARNING**

- No user serviceable components.
- 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 protective panels removed. Do not make any assumptions about the electrical state of any cabinet in the UPS system.

---

7.2  Performing Preventive Maintenance

The UPS system requires very little preventive maintenance. However, the system should be inspected periodically to verify that the units are operating normally. Record maintenance results and any corrective actions in a suitable log.

7.2.1  DAILY Maintenance

Perform the following steps daily:

1. Check the area surrounding the UPS system. Ensure the area is not cluttered, allowing free access to the unit.
2. Ensure the air intakes on the Accessory cabinets are not blocked.
3. Ensure the operating environment is within the parameters specified in paragraph 3.2.1 Environmental and Installation Considerations and Chapter 8 Product Specifications.

7.2.2  PERIODIC Maintenance

Periodic inspections of the IAC-D should be made to determine if components, wiring, and connections exhibit evidence of overheating. Particular attention should be given to the compression lug connections. Maintenance procedures should specify that the compression lug connections be retorqued to values listed in this manual.

7.2.3  ANNUAL Maintenance

Annual preventive maintenance should be performed only by authorized service personnel familiar with maintenance and servicing of the UPS system. Contact an Eaton service representative for more information about service offerings.
7.3 Maintenance Training

A basic training course, available from Eaton, gives you a competent working knowledge of the UPS system operation and teaches you how to perform first level corrective maintenance. For more information about training and other services, contact the Help Desk (see paragraph 1.8 Getting Help).
Chapter 8  Product Specifications

This section provides the following specifications:

- Model Numbers
- Input specifications
- Output specifications
- Environmental and safety specifications

8.1  Model Numbers

The Integrated Accessory Cabinet-Distribution (IAC-D) is available in two model to meet the needs of the Eaton 93PM UPS product line.

<table>
<thead>
<tr>
<th>Integrated Accessory Cabinet-Distribution (IAC-D) Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton 93PM 50 kW IAC-D (480V/208V)</td>
<td>IAC-D for Eaton 93PM 50 kW UPS Frame</td>
</tr>
<tr>
<td>Eaton 93PM 50 kW IAC-D (208V/208V)</td>
<td></td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D (480V/208V)</td>
<td>IAC-D for Eaton 93PM 100 kW UPS Frame</td>
</tr>
<tr>
<td>Eaton 93PM 100 kW IAC-D (208V/208V)</td>
<td></td>
</tr>
<tr>
<td>Eaton 93PM 150 kW IAC-D (480V/208V)</td>
<td>IAC-D for Eaton 93PM 150 kW UPS Capacity Frame</td>
</tr>
<tr>
<td>Eaton 93PM 200 kW IAC-D (480V/208V)</td>
<td>IAC-D for Eaton 93PM 200 kW UPS Frame</td>
</tr>
</tbody>
</table>

8.2  Specifications

The following sections detail the input, output, and environmental and safety specifications for the IAC-D.

8.2.1  Input

| Operating Input Voltage Range | With 208V/480V Input Transformer – 208V nominal (60Hz) or Without 208V/480V Input Transformer – 480V nominal (60 Hz) |
| Input Wiring: 3W + G           | 60 Hz ± 5 Hz                                            |
| Operating Input Current        | See Table 4 or Table 5                                 |

8.2.2  Output

| Operating Output Voltage       | 208/120 Vac nominal                                      |
| Output Wiring: 4W + G          | 60 Hz ± 5 Hz                                            |
| Operating Output Frequency Range| See Table 6 or Table 7                                  |
## Environmental and Safety Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>41°F to 104°F (5°C to 40°C).</td>
</tr>
<tr>
<td><strong>Transit Temperature</strong></td>
<td>-13°F to 140°F (-25°C to 60°C)</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-13°F to 131°F (-25°C to 55°C)</td>
</tr>
<tr>
<td><strong>Operating Altitude</strong></td>
<td>Maximum 1500m (5000 ft) at 40°C without derating</td>
</tr>
<tr>
<td><strong>Transit Altitude</strong></td>
<td>15000m (49213 ft)</td>
</tr>
<tr>
<td><strong>Ventilation</strong></td>
<td></td>
</tr>
<tr>
<td>50 kW:</td>
<td>Natural convection air cooling for rear exhaust</td>
</tr>
<tr>
<td></td>
<td>Natural convection air cooling for top exhaust</td>
</tr>
<tr>
<td>50 kW with 208V/480V input transformer:</td>
<td>Forced air cooling for top exhaust</td>
</tr>
<tr>
<td></td>
<td>Forced air cooling for rear exhaust</td>
</tr>
<tr>
<td>100 kW:</td>
<td>Natural convection air cooling for rear exhaust</td>
</tr>
<tr>
<td></td>
<td>Forced air cooling for top exhaust</td>
</tr>
<tr>
<td>100 kW with 208V/480V input transformer:</td>
<td>Forced air cooling for top exhaust</td>
</tr>
<tr>
<td></td>
<td>Forced air cooling for rear exhaust</td>
</tr>
<tr>
<td>150 kW:</td>
<td>Forced air cooling for rear exhaust</td>
</tr>
<tr>
<td></td>
<td>Forced air cooling for top exhaust</td>
</tr>
<tr>
<td>200 kW:</td>
<td>Forced air cooling for rear exhaust</td>
</tr>
<tr>
<td></td>
<td>Forced air cooling for top exhaust</td>
</tr>
<tr>
<td><strong>Relative Humidity</strong></td>
<td>5–95%, noncondensing</td>
</tr>
<tr>
<td>(operating and storage)</td>
<td></td>
</tr>
<tr>
<td><strong>Acoustical Noise</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Safety Conformance</strong></td>
<td>UL1778 5th edition</td>
</tr>
<tr>
<td><strong>Agency Markings</strong></td>
<td>cULus</td>
</tr>
<tr>
<td><strong>EMC (Class A)</strong></td>
<td>FCC Part 15 Class A and 62040-2 c3</td>
</tr>
</tbody>
</table>
Chapter 9  Warranty

For warranty information, please refer to the Resources link on our website, www.eaton.com/93PM.

EQUIPMENT REGISTRATION

Please visit www.eaton.com/pq/register to register your new Eaton UPS / Eaton UPS Accessory.

Model Number:

Serial Number: