

# Integrated Power Assemblies

## Contents

<i>Description</i>	<i>Page</i>
<b>Product Description</b> .....	<b>23-2</b>
<b>Application Description</b> .....	<b>23-2</b>
<b>Features, Benefits and Functions</b> .....	<b>23-2</b>
<b>Standards and Certifications</b> .....	<b>23-2</b>
<b>Options and Accessories</b> .....	<b>23-3</b>
<b>Product Specifications</b> .....	<b>23-3</b>
<b>Typical Layout Plan Views</b> .....	<b>23-3</b>



*Two Story Integrated Power Assembly*

## Product Description

### Integrated Power Assemblies — IPAs



Interior of Integrated Power Assembly

### Product Description

We invented the concept of grouping electrical distribution and control equipment in a modular building called an Integrated Power Assembly (IPA)...custom designed to meet each customer's specific requirements.

When a Cutler-Hammer IPA by Eaton Corporation is delivered, all the customer typically needs to do is:

1. Place it on the suitable foundation such as a concrete pad or base with similar strength and durability.
2. Make the incoming and outgoing load connections. That's because an IPA is a complete unit...and can be pre-wired and factory tested, if required.

### Application Description

#### A Variety of Industries and Service Organizations

- Communications.
- Food processing.
- Government.
- Heavy industry.
- Materials handling.
- Medical.
- Mining.
- Petrochemical.
- Pollution control.
- Public utilities.
- Pulp and paper.
- Rail and mass transit.
- Water and waste treatment.
- Utility.
- Many others.

### With a Broad Range of Applications

- Control center rooms.
- Equipment skids.
- Generator systems.
- Power distribution center.
- Offshore platforms.
- Pipelines.
- Power substations.
- Process control.
- Pumping stations.
- Refineries.
- Switchgear enclosures.
- Many others.

### Features, Benefits and Functions

An IPA provides these significant cost savings and improved ROI:

- **Lower installation cost.** Job site labor and material costs are sharply reduced because an IPA arrives complete, ready for connections.
- **Minimal start-up time.** Each IPA is checked to ensure wiring accuracy, control scheme correctness, and equipment operation.
- **Installation delays reduced.** Job site delays caused by trying to coordinate multiple vendors are eliminated.
- **Reduced procurement time.** Scheduling and expediting are handled through a single-point contact and only one purchase order is required.
- **Customized design.** IPA buildings have very few restrictions. They can be of almost any size, shape or color...and in addition to Cutler-Hammer electrical distribution and control equipment, can include whatever other non-Cutler-Hammer equipment a customer may require.

### We Are Your Single Source for IPAs

Eaton offers the industry's most complete family of electrical distribution and control equipment and components plus the widest selection of ratings. And we provide IPAs that meet or exceed distribution systems requirements.

As a single source supplier, we provide these significant advantages:

- **Designing, assembling and testing.** Eaton certifies that all equipment and components are in compliance with applicable NEMA®, IEEE, ANSI, UL® and IEC standards. The building is certified to meet UBC®, SBCCI® and BOCA® requirements, while the installation of the equipment meets NEC® requirements.
- **Consistent terms and conditions.** Eaton provides a single uniform set of terms and conditions for all equipment and components. Additionally, the terms and conditions are compatible with those of other Cutler-Hammer products that may be on the same project... providing the benefit of single package negotiation.
- **One contact point.** The Cutler-Hammer worldwide network of engineers, sales representatives, and authorized distributors provides design and application assistance, pricing, delivery and warranty information, as well as project management from our e-POD.
- **Electronic documentation.** Drawings and approvals online. Electronic O&M manuals at the time of shipment.
- **One overall warranty.** Eaton Corporation warrants all Cutler-Hammer IPA equipment and components, plus the structure itself. And, if EESS commissions the equipment, a one year extended warranty.

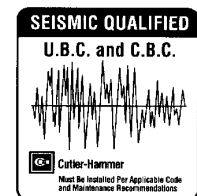
### An IPA Can Be Installed Where You Want

Installation flexibility is essential since IPAs are often used in applications where a controlled, protective environment is required. However, the actual location of an IPA can often vary from customer-to-customer.

IPAs have been installed indoors on the main floor or second deck; outdoors on roofs; or as a separate detached structure.

### Standards and Certifications

Eaton's Cutler-Hammer distribution equipment is seismically tested, seismically qualified, and exceeds requirements of both the Uniform Building Code (UBC) and the California Building Code (CBC).



**Options and Accessories**

**Typical Cutler-Hammer Equipment that Can Be Installed in an IPA**

Almost any type of Cutler-Hammer electrical equipment from Eaton Corporation can be installed in an IPA, including:

- MVS and MEB Load Interrupter Switchgear.
- Medium Voltage VacClad-W Metal-Clad Switchgear.
- Ampgard® Medium Voltage Starters.
- Medium Voltage Non-Segregated Bus.
- Low Voltage Switchgear Type Magnum DS.
- Low Voltage Switchboards — Pow-R-M-S — Fixed or Drawout.
- Pow-R-Line C® Low Voltage Group Mounted Switchboards.
- Pow-R-Line C Low Voltage Panelboards.
- Freedom™ 2100 and Advantage™ Motor Control Centers.
- Dry-Type Distribution Transformers.
- Adjustable Speed Control.
- Automatic Transfer Switches.
- Low Voltage Bus.
- Microprocessor-Based Metering, Protection, Control and Monitoring Devices.

**Additional Equipment and Modifications**

Since each IPA is custom designed, we not only provide the electrical gear you specify but can include any additional equipment and modifications requested. Some examples include:

- HVAC systems.
- Pressurization units.
- Battery systems.
- Annunciators.
- Communications equipment.
- Security systems.
- Marshaling cabinets.
- Installation and wiring of customer furnished PLCs and analyzers.
- Office or work areas.
- Plumbing and restrooms.
- Doors and windows.
- Indoor, outdoor and emergency lights.
- Wireway and cable trays.
- Custom paint finishes.
- Switches and receptacles.
- Any other equipment specified by customer.

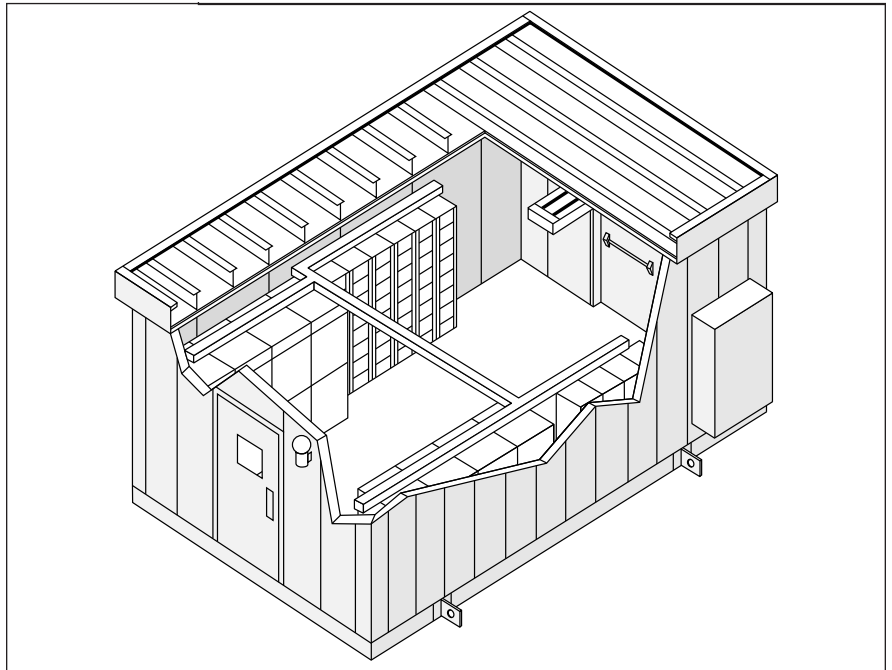
**Product Specifications**

Refer to *Product Specification Guide, Section 16920.*

**Typical Layout Plan Views**



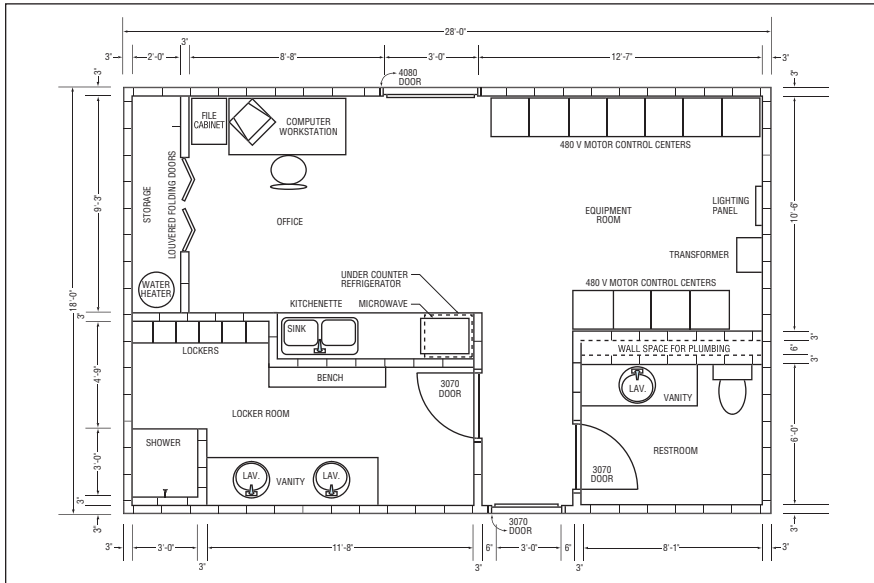
*IPA on Piers*



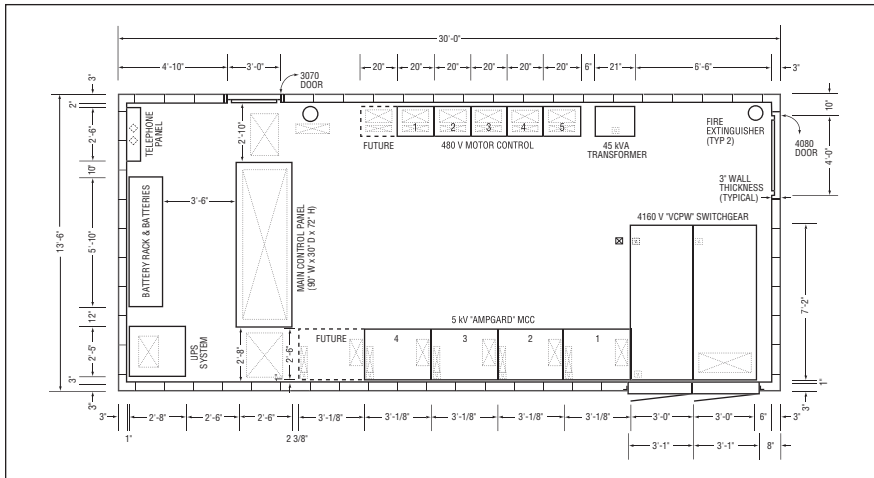
**Figure 23-1. Cut-away View of an Integrated Power Assembly**

NEMA is the registered trademark and service mark of the National Electrical Manufacturers Association. UL and CUL are federally registered trademarks of Underwriters Laboratories Inc. Uniform Building Code (UBC) is a trademark of the International Conference of Building Officials (ICBO). BOCA is a registered trademark of Building Officials and Code Administrators International, Inc. SBCCI is a registered trademark of Southern Building Code Congress International. National Electrical Code and NEC are registered trademarks of the National Fire Protection Association, Quincy, Mass.

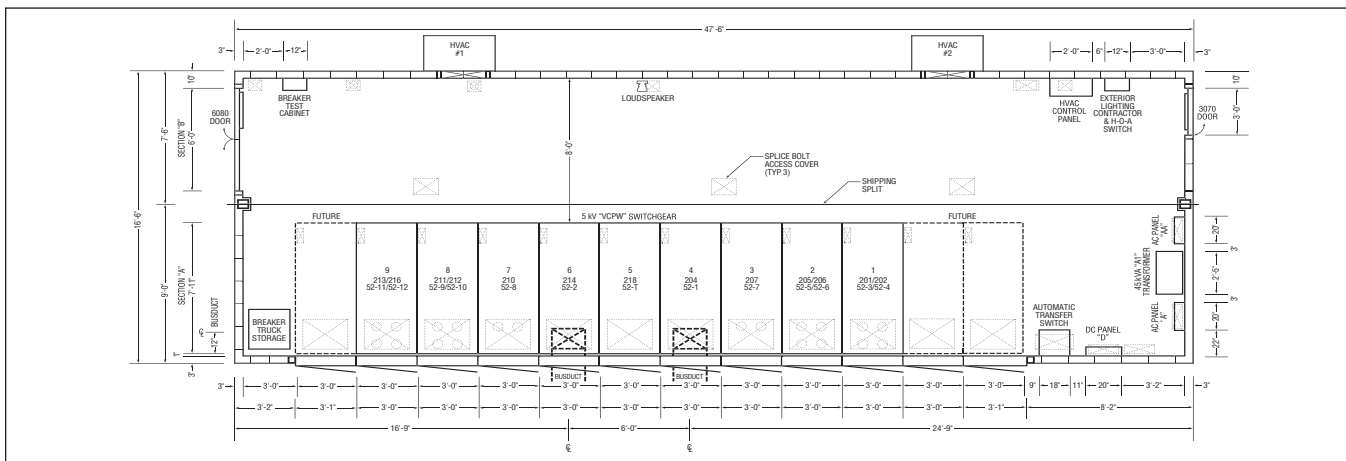
**Typical Layout Plan Views — Dimensions in Feet and Inches**



**Figure 23-2. Typical Layout Plan Views**



**Figure 23-3. Typical Layout Plan Views**



**Figure 23-4. Typical Layout Plan Views**

**Table 23-1. Dimension Conversions**

U.S.		Metric	
Feet	Inches	Meters	Millimeters
—	1	—	25.4
—	2-3/8	—	60.3
—	3	—	76.2
—	6	—	152.4
—	8	—	203.2
—	9	—	228.6
—	10	—	254.0
—	11	—	279.4
—	12	—	304.8
—	18	—	457.2
—	20	—	508.0
—	21	—	533.4
2	0	—	609.6
2	5	—	736.6
2	6	—	762.0
2	8	—	812.8
2	10	—	863.6
3	0	—	914.4
3	0-1/8	—	917.6
3	1	—	939.8
3	2	—	965.2
3	6	1.1	—
4	0	1.2	—
4	9	1.4	—
4	10	1.5	—
5	10	1.8	—
6	0	1.8	—
6	6	2.0	—
7	2	2.2	—
7	6	2.3	—
7	11	2.4	—
8	0	2.4	—
8	1	2.5	—
8	8	2.6	—
9	0	2.7	—
9	3	2.8	—
10	6	3.2	—
11	8	3.6	—
12	7	3.8	—
13	6	4.1	—
16	6	5.0	—
16	9	5.1	—
18	0	5.5	—
24	9	7.5	—
28	0	8.5	—
30	0	9.1	—
47	6	14.5	—