

Chapter 1 Introduction

1.1 Product Summary

The Eaton® PDI PowerHub 2 400-1125 kVA Power Distribution Unit (PDU) is a large capacity, high-power-density power distribution module with the following features:

- 400 kVA to 1125 kVA transformer with a choice of transformer vectors, compensation taps, and transformer inrush limits
- Multi-Output PDU Option, providing a transformer that can be reconfigured on site for any one of two or three output voltages
- Side Car Option, providing capacity for a large input circuit breaker and, if needed, output breaker, required for PDUs with transformers greater than 750 kVA
- Manual Dual PDU Option, allowing two alternate input sources to be manually switched using Kirk Keys without dropping the load
- Optional Surge Protective Device (SPD)

The PDU has extensive monitoring capabilities. Customer can choose between two monitoring systems:

- WaveStar Infinity is PDI's latest metering and monitoring solution for the Power Hub 2 platform and is recommended for all new data center buildouts. It was launched in 2018 and offers revenue grade accuracy, high speed data communication, and a color touchscreen display with an intuitive user interface.
- WaveStar Monitoring is PDI's previous metering and monitoring standard, which includes the WaveStar Color Monitor, launched in 2014. WaveStar Monitoring is still available for the PowerHub 2 PDU.
- Both monitoring systems have these features:
 - Monitoring for transformer, main power feeds, subfeeds, and other PDU functions • Color touch-screen monitor
 - Modbus RTU, Modbus TCP/IP, and SNMP protocols
 - TCP/IP for browser screen access (WaveStar Infinity Monitoring) or for Color Monitor web pages (WaveStar Monitoring)
 - An extensive dry contact network

The PowerHub 2 is a front-accessible PDU (Figure 1) with front-access for these functions:

- Operator controls and monitoring
- Customer power, network, and dry contact connections
- Circuit breakers
- Replaceable PCBs, fuses, and other maintenance

However, if the PDU has the Multi-Output PDU Option, rear access is required to perform off-line transformer reconfiguration.

The PDU design provides customers PDU placement flexibility with a small total space footprint:

- Because the PDU is front-accessible for all maintenance (except for reconfiguring the transformer in the Multi-Output PDU Option), it requires 36" service clearance only at the front and 6" ventilation clearance at the back plus one side.
- Cable entry to the PDU is from the top or bottom with removable conduit plates.
- Welded busbar construction, front-accessibility, and top/bottom cable entry allow the PDU to be positioned near walls or other equipment, requiring less space and service clearances than similarly sized PDUs.

- The PDU can be placed on fixed floor, reinforced raised floor, or floor stand. Floor stands (12"- 60" \pm 1.5" H) are available for all units and the optional side car.

1.2 Specifications

PDU specifications are available on PowerHub 2 PDU product page on the Eaton website:

[Eaton PDI PowerHub 2 PDU](#)

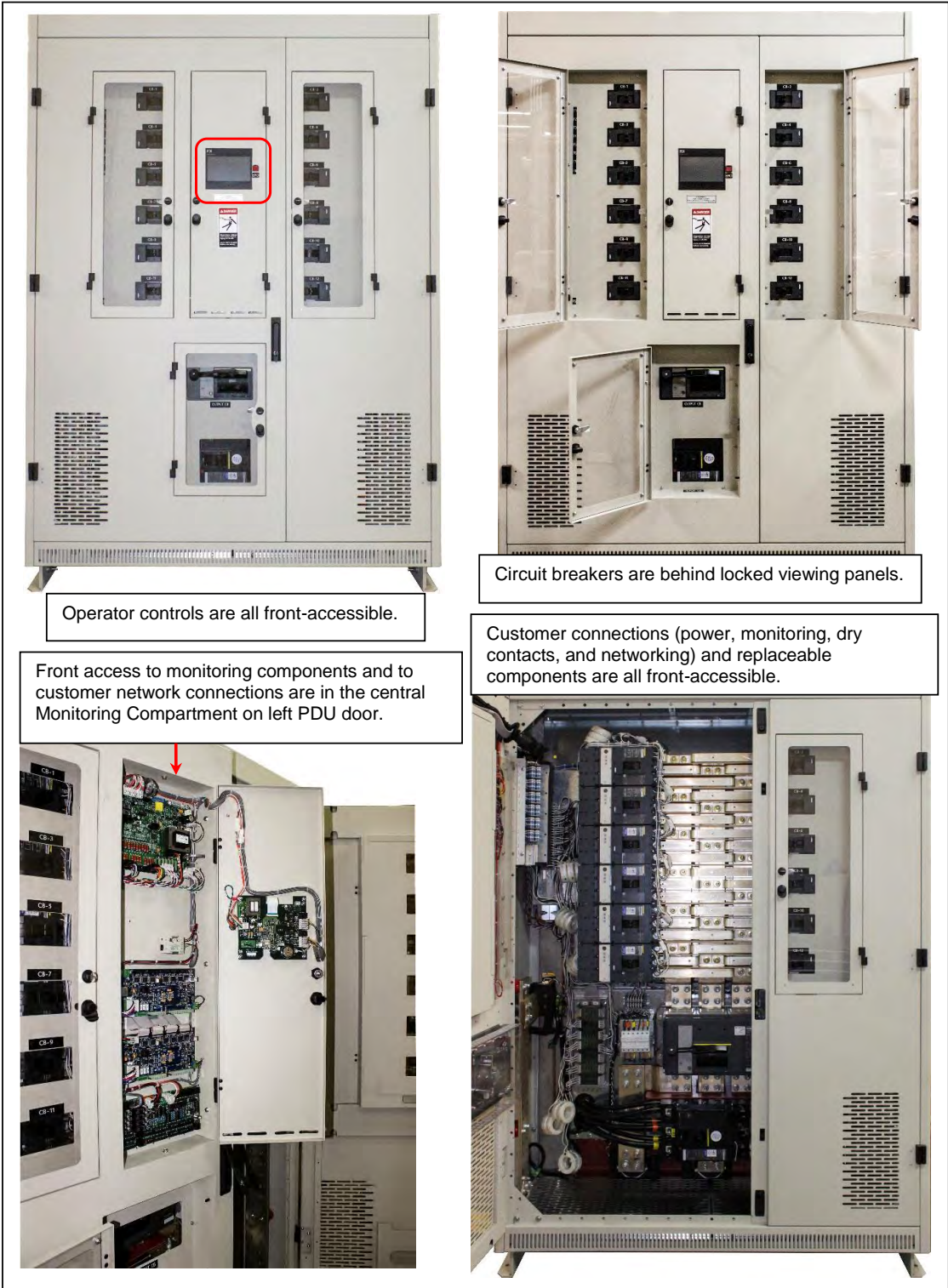
PDU characteristics pertinent to installation are also given in this document where appropriate.

1.3 Manual Overview

This manual is structured as follows

- Installation Planning, -
- Installation, - -
- Monitoring, two mutually exclusive options:
 - WaveStar Infinity Monitoring,
 - WaveStar Monitoring, -
- PDU Initial Start-Up,
- Multi-Output PDU Option,
- Manual Dual PDU Option,
- PDU Procedures,
- Alarms and Troubleshooting,
- Service,
- Bibliography
- Glossary ,
- Appendix,

Figure 1. Front Access to Operator Controls, Components, and Customer Connections




1.4 Using This Manual

Read this manual thoroughly and make sure you understand the procedures before you attempt to install, set up, operate or carry out any maintenance work on this Eaton product.

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

1.5 Conventions Used in This Manual


This manual uses these type conventions:



NOTE


Some conventions only apply to display screens (if installed).

- **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 notes and new terms where they are defined.
- `Screen type` represents information that appears on the screen or LCD.


Icon	Description
	Information notes call attention to important features or instructions.
[Keys]	Brackets are used when referring to a specific key, such as [Enter] or [Ctrl].

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 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 Eaton Help Desk at:

United States: **1-800-843-9433** or **1-919-870-3028**

Canada: **1-800-461-9166 ext 260**

All other countries: **Call your local service representative**

Please use the following e-mail for manual comments, suggestions, or to report a technical error in this manual.

E-ESSDocumentation@eaton.com

Eaton PDI PowerHub 2 PDU webpage:

[Eaton PDI PowerHub 2 PDU](#)

1.8 Warranty

To view the warranty please click on the link or copy the address to download from the Eaton website:

[UPS Product Warranty](#)

<https://www.eaton.com/content/dam/eaton/products/backup-power-ups-surge-it-power-distribution/backup-power-ups/portfolio/eaton-three-phase-ups-warranty.pdf>