

# PowerPak 2 Power Distribution Unit

Flexibility

Configurability

Intelligence

Safety



*Powering Business Worldwide*

# PDI PowerPak 2 Power Distribution Unit

Following in the footsteps of numerous PowerPak designs Eaton is proud to release PowerPak 2, the most versatile and safest PDU on the market today. Designed and engineered to meet the exact needs of our clients, PowerPak 2 PDU brings with it a powerful combination of flexibility and modularity.

With hundreds of possible configurations, PowerPak 2 PDU is the smallest power distribution unit with true front access in today's market. A patent pending 3D access window allows true front access (TFA) for service and maintenance of the transformer while offering panel board and/or sub-feed distribution in the main cabinet. PowerPak 2 offers up to a 400 kVA DOE 2016 transformer and incorporates compartmentalized design in order to isolate controls and high voltage components.



# Features

## Five-tier True Front Access

Five-Tier True Front Access (TFA) maximizes operator safety, increases security and allows for maintenance and service from the front of the PDU. Each tier provides locked access to the PDU through secured software or keyed access.

**TIER 1**

USB port for monitoring configuration  
TVSS status viewpoint

**TIER 2**

Locking translucent doors for breaker access

**TIER 3**

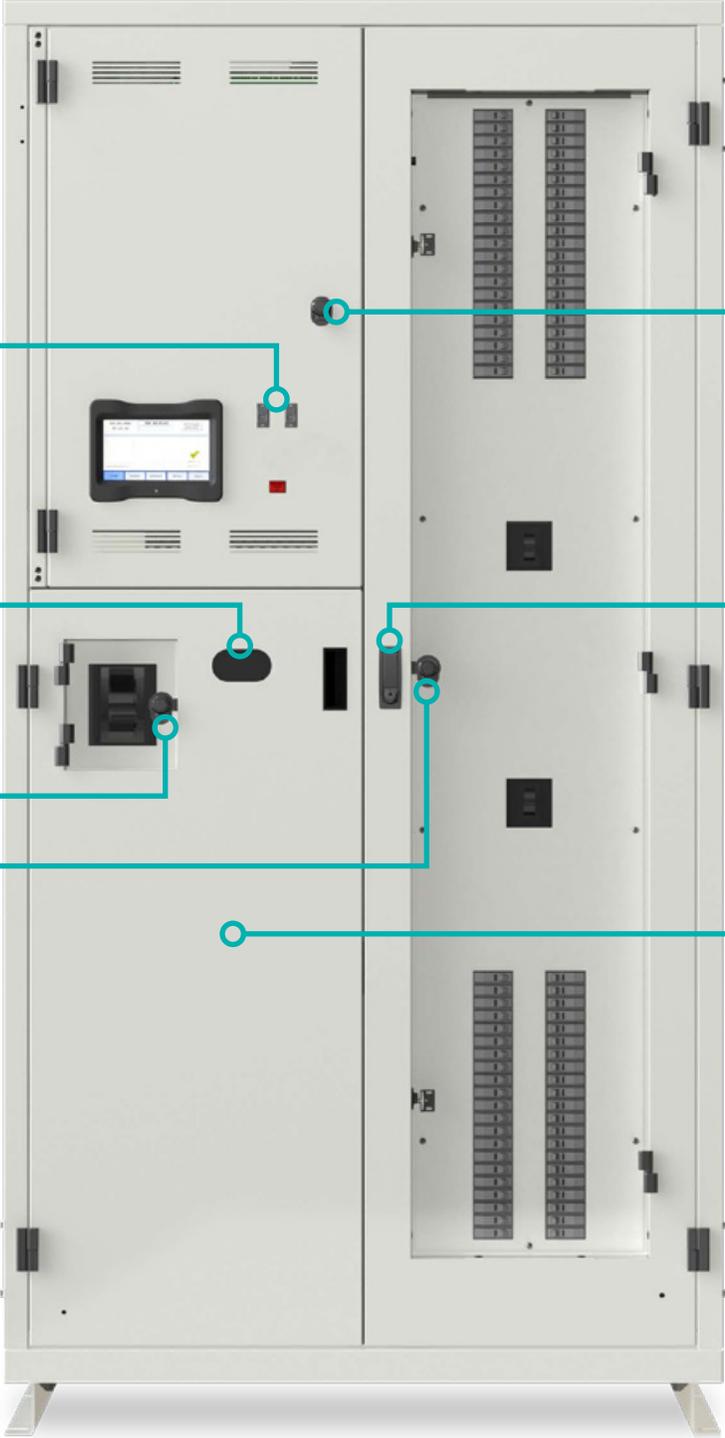
Locking controls compartment

**TIER 4**

Locking door for high voltage compartment access

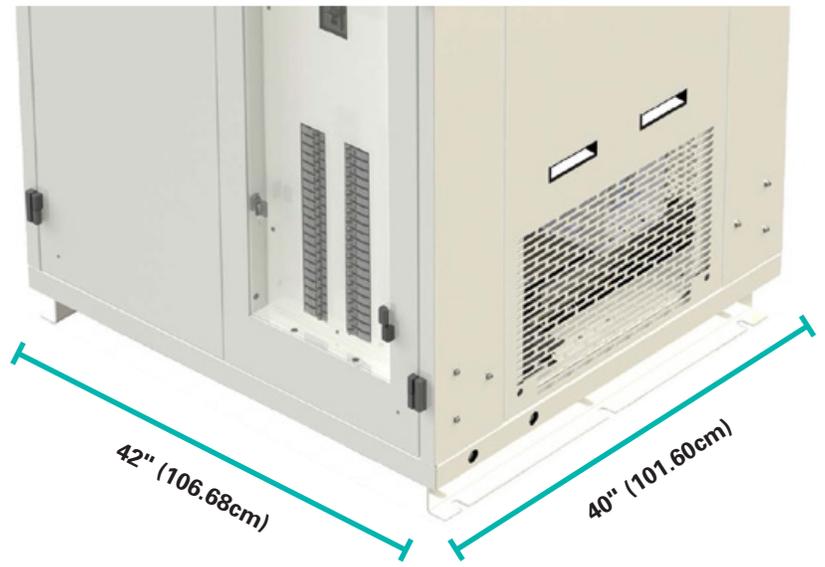
**TIER 5**

3D access window for infrared scanning



## Smallest footprint

The PowerPak 2 PDU can accommodate up-to a 400kVA DOE2016 high efficiency transformer while maintaining True Front Access (TFA) and a cabinet size of 40" deep by 42" width. This reduced footprint allows the operator to maximize space required for power transformation and distribution.



## Power compartmentalization

In order to simplify maintenance and increase safety of operators, the PowerPak 2 PDU features isolated controls and high-voltage compartments within the main cabinet. Compartmentalized components include high voltage input breakers and panelboards as well as controls and logic printed circuit boards and displays associated with the WaveStar® Branch Circuit Monitoring System (BCMS).

Up to  
**400 kVA**  
**DOE 2016**  
Transformer



**Breaker access compartmentalization**



**Overall design compartmentalization**



7" touchscreen display

## WaveStar® intelligent power monitoring

PDI's Branch Circuit Monitoring System (BCMS) allows for the pro-active management of power usage and availability ensuring maximum uptime and reliability. BCMS monitors server loads locally via a 7" touchscreen display or remotely by multiple open protocols including Modbus®, SNMP and TCP/IP. Power data includes current, voltage, voltage L-L, L-N, kW, kVA, kVAR, kWh per panelboard.

## Front access infrared scanning

IA patent pending 3D access window located in the bottom left-hand high-voltage compartment and specialized transformer designs enable infrared scanning from the front of the PDU. The combination of these features result in the smallest PDU footprint in the industry and maximize space utilization.



Patent pending 3D scanning window

## Infrared scanning from the front

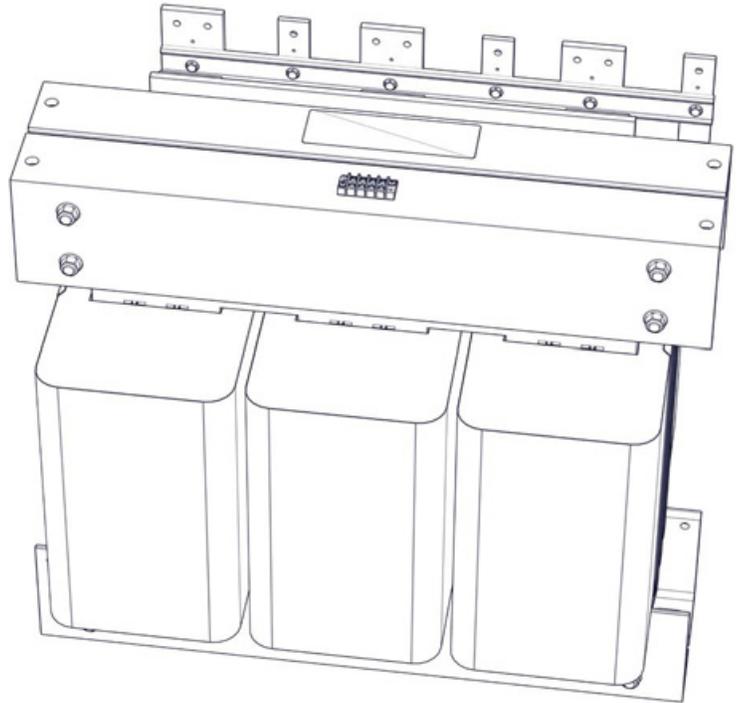


Specialized transformer designs

## Up-to 400 kVA DOE 2016 transformer

On January 1st, 2016 the Department of Energy mandated that distribution transformers must meet a new, more stringent energy efficiency standard. PowerPak 2 supports this new standard and offers DOE-compliant transformers from 100 to 400 kVA.

- **Transformer sizes (kVA)**  
400, 300, 225, 200, 150, 125, 100
- **K-factor rating**  
Standard K13, optional K4, K9, K20
- **Temp rise**  
150°C (standard), 115°C (optional)
- **8-10x in-rush, 2.5-5% impedance**
- **Winding**  
Copper (standard), aluminium (optional)
- **Other options**  
Quad Wye®, delta zig zag,  
208V primary, 600V primary adder



## Flexible in-cabinet and side-car distribution options

The PowerPak 2 PDU is compatible with multiple panelboard and sub-feed breaker manufacturers and styles which allows you complete flexibility in distributing power. Single, inline and finger safe panelboards and sub-feed breakers are available in-cabinet and in optional front and side facing side-cars.

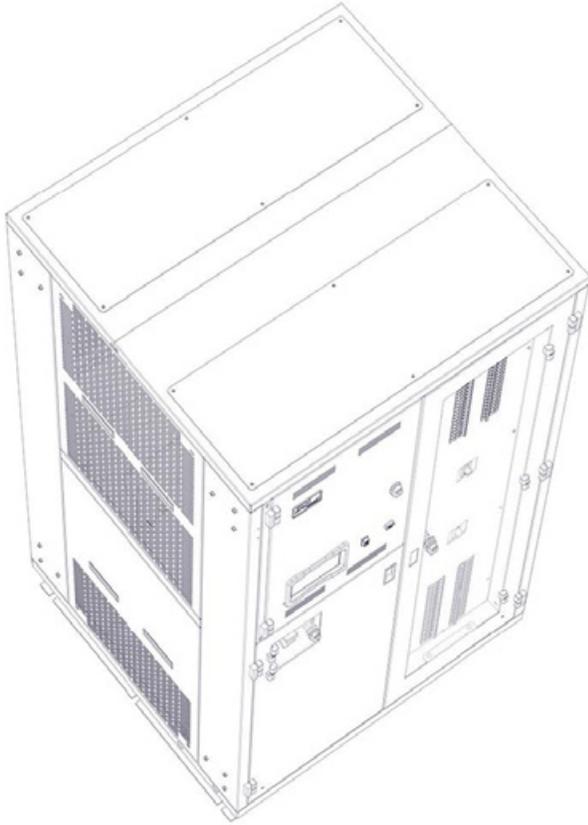
- **In cabinet and side-car distribution**  
24" front / front and side facing side-car  
12" side facing side-car
- **Multiple panelboard sizes and styles**  
Square D, ABB, GE  
Traditional and finger safe
- **Multiple sub-feed breakers styles and sizes**  
Square D, ABB, GE  
Traditional and line panels



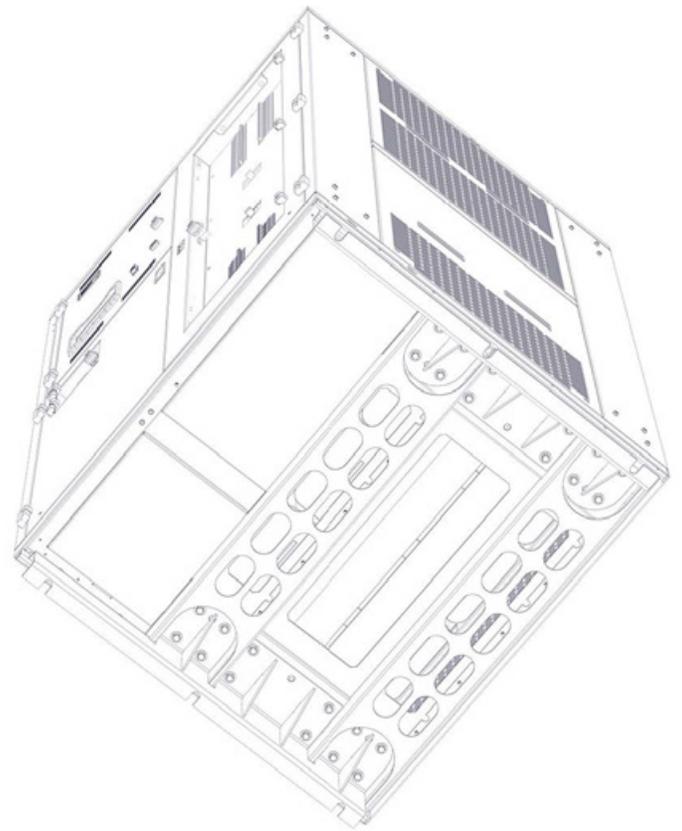
**12" wide  
Side facing  
side-car**

**42" x 40"  
Main cabinet**

**24" wide  
Front facing  
side-car**



Top entry and exit



Bottom entry and exit

## Adaptable service entrances

Every data center is different hence determining service entrance for line and load connections can vary from site to site as well as unit to unit. The PowerPak 2 was engineered to be both top/bottom entry/exit for the ultimate in flexibility.



# Technical specifications

## Ratings

kVA rating, 100 kVA – 400 kVA	
Input: 3-phase, 3-wire plus ground	
Input Voltage	@ 50 Hz: 380V – 415V @ 60 Hz: 600, 480 or 208
Output: 3-phase, 4-wire plus ground	
Output Voltage	@ 50 Hz: 575, 415/240, or 380/230V128 @ 60 Hz: 600, 575, 480, or 208/120V
200% neutral busbar connection	
Listed to UL 60950-1, CSA C22.2#60950-1, UL 891, IEC60950-1, EN 60950-1, EN 61000-6-2, EN 61000-6-4	

## Transformers

- DOE 2016 compliant transformers standard for USA.
- Operating Efficiency: 98% or better
- Copper-wound construction – better conducting and more resilient than aluminum
- Dual electrostatic shield – attenuates high frequency noise
- Oversized 200% neutral conductor
- Common mode noise protection
- Transverse mode noise protection
- Optional Quad-Wye® Technology solves harmonic problems by canceling the destructive triplen and non-triplen current harmonics

## Enclosure

- NEMA 1 enclosure with removable front, side, and rear panels
- Integrated two-point latch and vision panels
- Flush-mounted door handle with integral locks
- Advanced door catch assures positive closure
- Optional floor skirts

## Operating conditions

Operating temperature	Ambient 0°C to 40°C per ANSI/IEEE C57.12.01 – The temperature of the cooling air (ambient temperature) shall not exceed 40°C, and the average temperature of the cooling air for any 24-hour period shall not exceed 30°C.
Relative humidity	0% to 95% non-condensing
50 Hz operating range	47-53 Hz
60 Hz operating range	57-63 Hz
Operating altitude	≤ 10,000 ft.

## Monitoring

Monitor	WaveStar monitor WaveStar color touch monitor
Communications	Serial RS-485 Modbus RTU; optional SNMP or TCP/IP communications
BCMS	Available as factory-installed option
Options	Per circuit output monitoring
Thermal	Dual transformer thermal sensors
True RMS metering	
Accurate kW, power factor and THD measurement	

## Transient Suppression Network (TSN)

An integrated system engineered to meet ANSI/IEEE category C standards for transient voltages and surge currents.

## Lightning arrestor/surge suppressor

Protects the insulation of the system magnetics.

## Distribution panelboards/sub-feed breakers

Customized distribution configurations meet the demands of any facility.

## Redundant power distribution system

WaveStar® Manual Dual System

Dual-Input power distribution system allows for manual sources election to isolate upstream equipment and facilitate system maintenance and repair.

## Customization

Eaton is dedicated to providing customized solutions to meet the specific requirements of your application. Contact us at +1.800.225.4838 for further information and support.

## Service and support

After your equipment has been installed, call on the Eaton service team, at 1.800.225.4838, for 24/7 support.