



# 400V Data Center Racks for Border Posts





## Overview

---

Why do data centers use 400V DC power?

Traditional data center AC to DC conversion stages. 400V DC power, in order to power IT equipment that inherently consumes DC power. By distributing 400V DC power to IT equipment, you can eliminate excess conversions between AC and DC [Figures 2 & 3]. The result is a more streamlined power.

Is 400-v DC distribution inevitable?

In this exclusive Q&A, Vicor contends that  $\pm 400$ -V DC power distribution to AI racks in data centers is inevitable. The demand for increased compute density. An evolution to  $\pm 400$ -V DC distribution to next-generation AI/ML supercomputer racks to meet that demand. Challenges and solutions in making the move to  $\pm 400$ -V DC distributed power.

Can A Disaggregated Power rack deliver 400VDC to a nearby it rack?

This specification will hopefully serve as the future fundamental base for a disaggregated power rack to deliver  $\pm 400$ VDC to a nearby IT rack. The base of the mechanical rack follows the Open Rack standard. Currently three companies have worked together to provide a high-level overview of the Diablo 400V architecture.

How does the netsuretm 9500 400V DC power system work?

The NetSure™ 9500 400V DC power system converts AC power to 400V DC power. By distributing the power at a higher voltage, the current is cut by a factor of seven compared to 48V DC [Figure 1]. The result is an 80%+ savings for the material and labor required to distribute power across your core telecom site.



## 400V Data Center Racks for Border Posts



### Mt Diablo

Traditional rack solutions integrate the power and server infrastructure in a single rack, but with Mt. Diablo we are moving all the ...

### [+/-400Vdc Rack Power System for ML AI Application](#)

"Xiong Li (Staff Electrical Engineer) - Google  
Krishnanjan Ravikumar (Sr. Staff Data Center Engineer) - Google LLC  
With the significant power density increase



### [Revolutionizing AI Data Centers: Is \$\pm 400V\$ DC the Future or](#)

The adoption of  $\pm 400V$  DC architecture for powering server racks in data centers represents a significant evolution in power distribution, particularly driven by the escalating ...

### [Inside Google's Plan to Deliver 1MW Racks and ...](#)

Google outlines new AI data center infrastructure with  $\pm 400V$  DC power and liquid cooling to handle 1MW racks and rising thermal loads.



### NETSURE 400V DC POWER SOLUTIONS

400V DC power is designed to ensure the highest levels of efficiency and reliability. Based on a flexible architecture, 400V DC power can be implemented at a wide variety of diferent telecom ...



### Arc Flash Safety in 400V Data Centers

Indeed, while arc flashes in a 120V data center generally produce minor, temporary wounds, comparable incidents in a 400V data center can easily result in permanently disabling and ...



### Enabling 1 MW IT racks and liquid cooling at OCP ...

At the 2025 OCP EMEA Summit today, we discussed the power delivery transformation from 48 volts direct current (VDC) to the ...





## [How 1 MW racks and 400V power architectures are changing data centers](#)

1 MW racks and 400V power architectures are transforming data centers as we know them. Find out how the increased demand for power and compute are converging to drive foundational ...

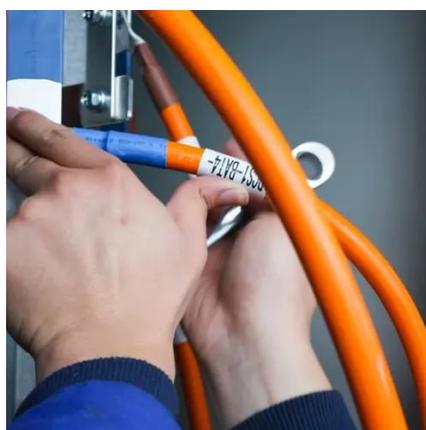


## [Why AI Data Centers Are Adopting \$\pm 400V\$ HVDC ...](#)

An  $\pm 400V$  HVDC Power Rack is a modern power delivery and backup system designed to supply high-voltage direct current (HVDC) ...

## [Course Title Instructor\(s\)](#)

ETSI & ITU-T 400V DC Standards published 2012  
EMerge Telecom & Data Center DC Power Distribution standard published Interest in 400V DC for Zero Energy Buildings and microgrids ...



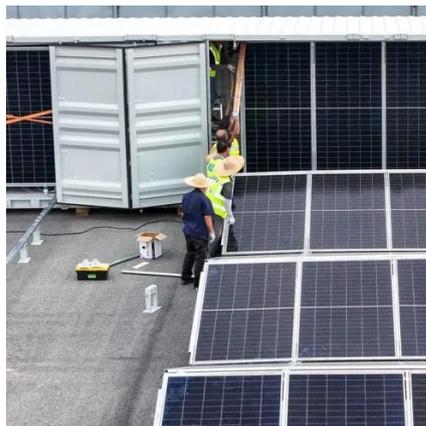
## [Diablo 400 Project: Rack and Power](#)

The source of the  $\pm 400V$  is generated by the power shelf or energy storage devices and is transferred via the rack busbar which also is connected to the HVDC Output ...



## NETSURETM 400V DC POWER SOLUTIONS

400V DC power is designed to ensure the highest levels of efficiency and reliability. Based on a flexible architecture, 400V DC power can be implemented at a wide variety of different telecom ...



## Microsoft and Meta reveal open AI rack design with separate ...

Microsoft and Meta have been working on a new open rack design for AI data centers which separates power and compute into different cabinets. Known as Mount Diablo, ...

## NETSURETM 400V DC POWER SOLUTIONS

The NetSure 700 Series power system offers a 400V to 48V DC-DC converter system that enables 400V DC power to be converted to 48V DC near the equipment loads. This lets you use ...



## Understanding High-Voltage DC Power ...

By 2027, NVIDIA's Kyber system is projected to demand 600 kW per rack with the Vera Rubin Ultra series of chips, an order of magnitude increase ...



## [Enabling 1 MW IT racks and liquid cooling at OCP ...](#)

At the 2025 Open Compute Project Summit, we announced a +/-400 VDC enabling 1 MW IT racks, and the Project Deschutes liquid ...

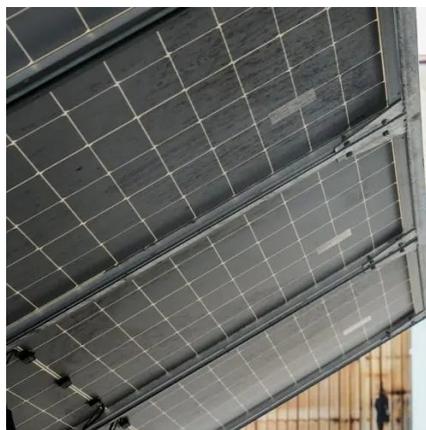


## [Busbar Application in Data Centers: Comprehensive Guide](#)

Explore the comprehensive guide on busbar applications in data centers, understanding their advantages, installation, and maintenance for optimized performance

## **Mt Diablo**

Traditional rack solutions integrate the power and server infrastructure in a single rack, but with Mt. Diablo we are moving all the power conversion into a separate ...



## [Enabling 1 MW IT racks and liquid cooling at OCP EMEA Summit ...](#)

At the 2025 OCP EMEA Summit today, we discussed the power delivery transformation from 48 volts direct current (VDC) to the new +/-400 VDC, which will enable IT ...



## Disaggregating Power in Data Centers

In this exclusive Q& A, Vicor contends that  $\pm 400\text{-V}$  DC power distribution to AI racks in data centers is inevitable.



## Why AI Data Centers Are Adopting $\pm 400\text{V}$ HVDC Instead of ...

An  $\pm 400\text{V}$  HVDC Power Rack is a modern power delivery and backup system designed to supply high-voltage direct current (HVDC) power at  $\pm 400$  volts (meaning  $+400\text{V}$  ...

## Microsoft, Google, and Meta have borrowed EV ...

The emerging vision is of data center racks capable of delivering up to 1 megawatt of power, paired with liquid cooling systems ...



## Five Ways to Prevent Arc Flash Events In a 400V Environment

Conclusion Long common elsewhere in the world, 400V data centers are slowly gaining popularity in the U.S., at least partly because they eliminate 480V to 120V ...



## Contact Us

---

For inquiries, pricing, or partnerships:

<https://iceeng.co.za>

Phone: +27 11 568 9402

Email: [info@iceeng.co.za](mailto:info@iceeng.co.za)

Scan QR code for WhatsApp.

