DYNAPOWER

Part of Sensata Technologies

PowerSkid™

BY DYNAPOWER

Combination Power Conversion and Transformer

An integrated, easy-to-install skid for medium-voltage applications

The MV Integrated PowerSkid™ combines Dynapower's highly efficient, three-level bi-directional power conversion system with medium-voltage components to create an ideal solution for quick integration. Delivered on a pre-configured, integrated skid for simplified installation and comissioning, the PowerSkid is a plug-and-play solution ideal for large-scale projects where power conversion and energy storage are needed. Enjoy maximum performance in a convenient package.

Key Features

EASE OF INTEGRATION

Standard, pre-assembled, and pre-tested systems ensure quick and easy installation, reducing both cost and timeline risks.

DESIGN FLEXIBILITY

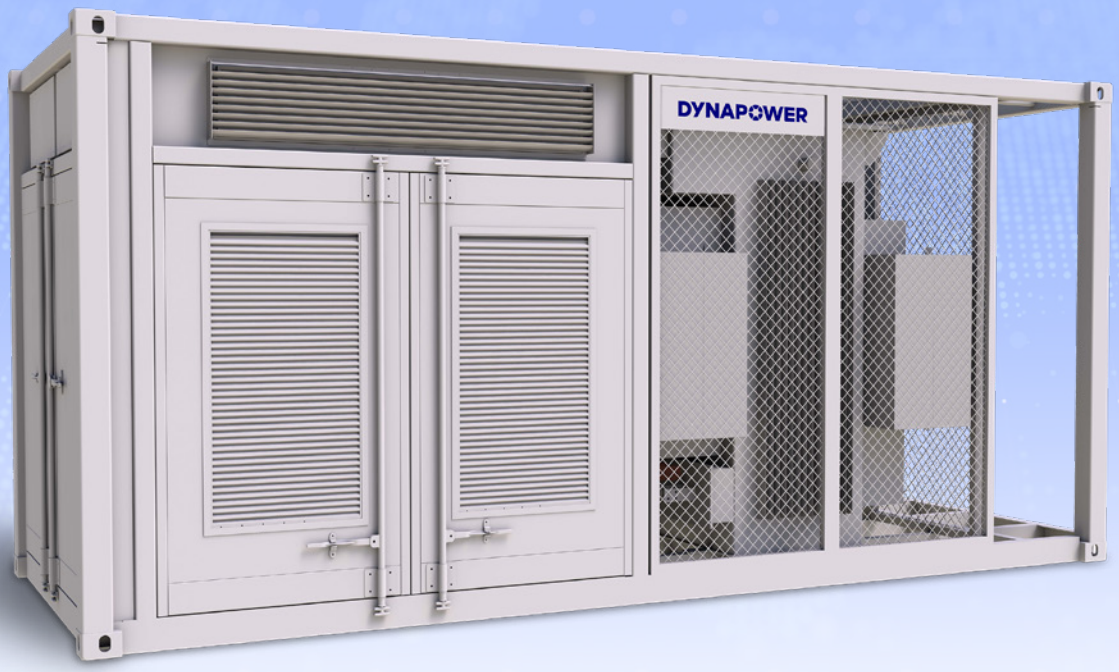
The MV PowerSkid™ standard design includes two parallel CPS-2500 inverters with flexible transformer power and voltage ratings for a wide range of power outputs.

COMPACT DESIGN

The 20' ISO certified container minimizes footprint and shipping requirements.

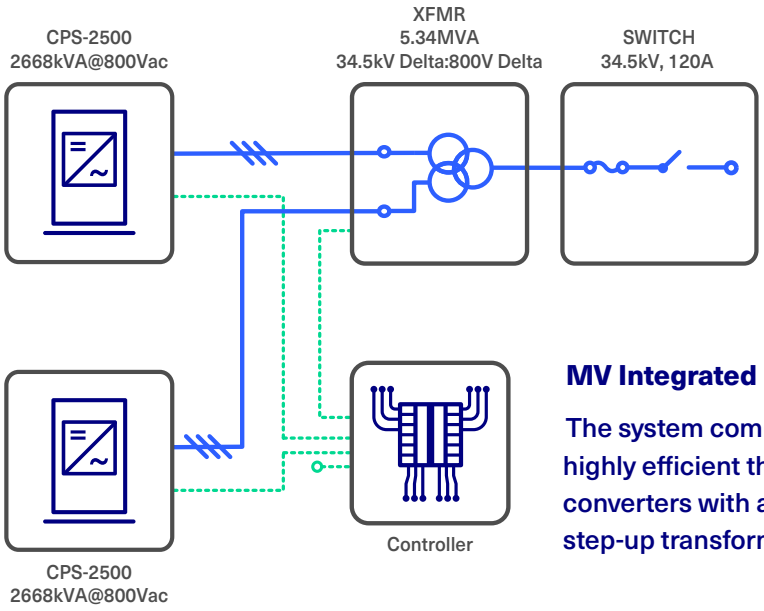
DC-READY

As the recognized industry leader in DC-coupled designs, Dynapower also offers a DC-ready PowerSkid™ design that incorporates multiple DC-DC converters in a pre-assembled, pre-tested solution, featuring the DPS-1000 and DPS-500 DC-DC converters.



PowerSkid: Offering Value and Performance

With its advanced technologies combined with streamlined installation, the MV Integrated PowerSkid™ offers exceptional value and unparalleled performance. Not only does it improve efficiency in medium-voltage applications, but its compact solution makes it extremely versatile.



SYSTEM ADVANTAGES

- Quick and easy installation with factory assembled products
- Simplified procurement
- Simplified commissioning
- Plug-and-play concept for easy integration

MV Integrated PowerSkid™

The system combines Dynapower's highly efficient three-level CPS-2500 converters with a medium voltage step-up transformer.

Markets & Applications

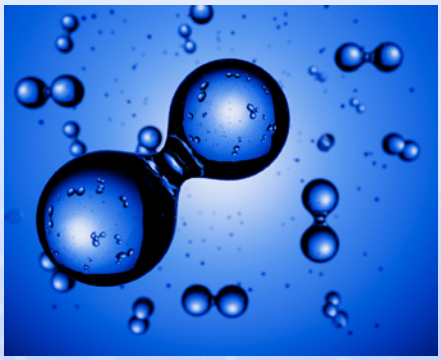
The MV Integrated PowerSkid™ offers next-generation capabilities that can meet a variety of applications. Powerful, versatile, and scalable, it's perfectly suited for large-scale storage integration and power-to-X (P2X) projects. As energy storage needs evolve in a quickly changing landscape, this compact and convenient solution can stand the test of time.

DATA CENTERS

Data Centers are experiencing unprecedented growth driven by AI technology. This industry demands reliable and flexible power conversion systems, and the PowerSkid is the perfect solution. The PowerSkid is both scalable and efficient, creating the DC to DC power demanded by this industry to optimize its energy usage while maintaining operational resilience. Its grid-forming technology delivers the fast load transient response that data centers demand.

BATTERY ENERGY STORAGE

When it comes to battery power, there's no room for downtime. From EV charging to backup power systems, battery energy storage systems require safety and resilience. The PowerSkid can be fully integrated with any size BESS, while our patented Dynamic Transfer enables fast, autonomous grid to off-grid switching. In addition, these systems can black start small to large loads.



HYDROGEN ELECTROLYSIS

The MV Integrated PowerSkid™ is uniquely designed to support this growing industry. While it can support the DC power needs of electrolyzers used in hydrogen production, the PowerSkid also supports hydrogen applications from centralized plants, distributed plants, and direct connection to renewable resources. With its combined capabilities and integration with large-scale storage, this plug-and-play product is both powerful and convenient.

Technical Specifications

PowerSkid™ BY DYNAPOWER

CPS-2500 TECHNICAL SPECIFICATIONS

Electrical

AC Input Voltage:	**480-800V_{AC}**
Grid Frequency:	**60 Hz**
Maximum Apparent Power:	**5337 kVA (800V_{AC})** **4600 kVA (690V_{AC})** **4000 kVA (600V_{AC})** **3600 kVA (480V_{AC})**
Maximum Real Power:	**5337 kVA (800V_{AC})** **4600 kVA (690V_{AC})** **4000 kVA (600V_{AC})** **3600 kVA (480V_{AC})**
Maximum AC Current:	**1928 A_{RMS} (3856A_{RMS})**
DC Voltage Range:	**771-1500VDC (@480--800V_{AC})**
Maximum DC Current:	**2340A_{DC} (4680A_{DC})**
Power Factor:	**Four Quadrant**
Current Harmonics:	**IEEE 1547 Compliant, <5% TDD**
Maximum Efficiency:	**98.58 @1500V_{DC} & 98.70 @1280V_{DC}**

Environmental

Operating Temp:	**-35 to +60°C, De-rated above +40°C**
Max Elevation:	**1000 Meters Full Power** **Up to 3000 Meters with Derating**
Cooling:	**Forced Air Cooled**
Enclosure:	**NEMA 3R/IP 54**
Skid Dimensions (L X W X H):	**240" x 96" x 108"**

Certifications & Standards Compliance

UL1741 Ed. 3

IEEE 1547

CSA 22.2 #107.1

IEEE 519

TRANSFORMER TECHNICAL SPECIFICATIONS

Overview

Construction Type:	**Hermetically Sealed with Corrugated Walls**
Distribution:	**3-Phase**
Power:	**4-5.3MVA**
Cooling Class:	**KNAN**
HV Winding:	**11-34.5 kV Delta**
Alternative MV AC Standard Options:	**34.5kV, 12.45kV, 13.8kV**
LV Winding:	**480-800V_{AC}**
Optional Integrated MV Disconnect with Fuses	

Optional Accessories:

Thermometer Pocket EN 50216-4

Pressure Relief Device with 2 Contacts

Dial Type Thermometer with 2 Contacts and Max. Pointer

Oil Level Indicator with 2 Contacts

Manometer – Pressure Vacuum Gauge

Electrostatic Shield Between HV & LV Windings

Jacking Pads

Key Technologies

Islanded Operation (UF Mode)

The CPS includes the ability to run islanded mode (voltage source) operation, also called UF mode. In islanded mode, the CPS accepts Voltage (U) and Frequency (F) setpoints. The CPS can handle full real power transitions with extremely tight voltage and frequency regulation forming a 'stiff backbone' to the microgrid.

Dynamic Transfer

Dynapower's proprietary Dynamic Transfer™ algorithm monitors grid stability and, upon detecting a grid disturbance, disconnects from the grid and transitions to stand-alone battery backup power mode on the load connection. The transition is seamless to the critical loads and supports 100% phase imbalance in UF mode.

Black Start (In-Rush Current Handling un UF Mode)

In the event of a complete system power outage, our patented black start restores power to the facility without the need for external power. Dynapower's black start technology can start distribution networks even with transformer magnetizing currents that exceed the power rating of the inverters. Multiple CPS® units can be restarted at once.

Frequency Compensation Mode (F-Comp)

F-Comp monitors the grid frequency for deviations from nominal, and if a deviation exceeds a max allowed, the CPS will automatically follow a user-defined frequency correction curve. F-Comp is ideally suited to very rapid Fast Frequency Regulation applications as well as power quality correction of critical facility loads.

VAR Compensation Mode (E-Comp)

E-Comp monitors the grid voltage for deviations from nominal and automatically attempts to correct three-phase voltage magnitude deviations (usually voltage sags) experienced by a critical load in an effort to avoid the need to transfer to backup power mode.

AC Current Limiting

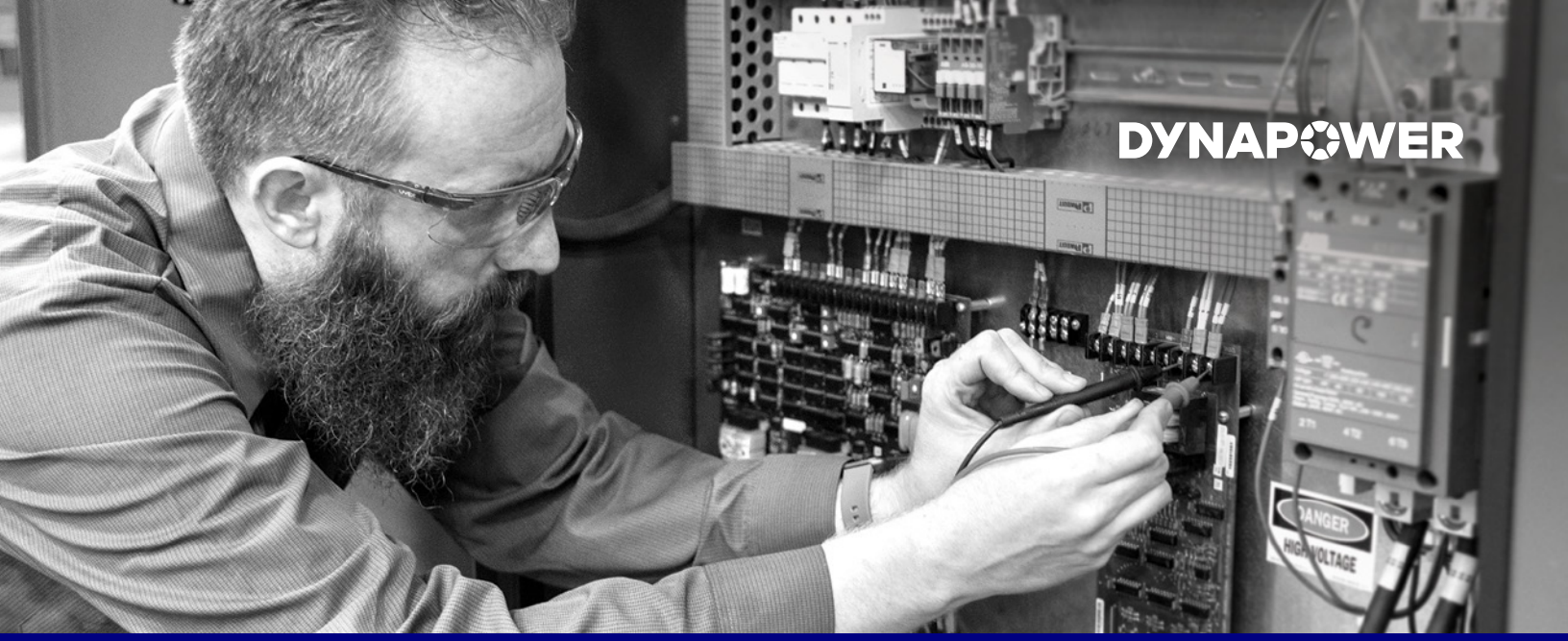
The CPS has AC current limiting, so that the system will deliver up to (but not exceed) full rated AC current to avoid nuisance AC overcurrent faults due to excessive load inrush current demand. When current limiting in UF, the AC voltage and frequency may deviate from nominal and this is permissible within the CPS abnormal voltage frequency limits and timers. It is expected that, if the system is properly sized to the microgrid, any voltage or frequency deviations due to large inrush loads will be very minor and short duration, and not affect the load.

Low Voltage Ride Through (LVRT) with Active Current Injection

In the event the grid experiences a voltage sag, the CPS will enter into low voltage ride-through operations to maintain proper AC voltage connection. The CPS inverter will enter either Momentary Operation, where the converter supplies at least 80% active current command, or Momentary Cessation, where the converter ceases to export active current but does not fault. The trip levels and trip times for the LVRT settings are configurable by the end user and meet the requirements for IEEE 1547.

Multiple Parallel Inverter Microgrid Mode

The CPS has the ability to control a large microgrid with many inverter systems. Our technology supports black start, AC current limit, and droop control.



Worldwide Service & Support

At Dynapower, we are just as passionate about our customer experience as we are about our products. Our aftermarket services keep you powered up and confident in the life and reliability of your Dynapower products.

PREVENTATIVE MAINTENANCE

With a Preventative Maintenance Plan, our factory-trained technicians visit your facility regularly to ensure the ongoing realiability and performance of your equipmemnt. Four different service levels cover a series of health, safety, performance, and compliance checks for Dynapower, Rapid, and all makes and models of rectifiers, converters, and transformers.

24/7 TECHNICAL SUPPORT

We provide worldwide support and technical expertise any time of day or night, with technical support specialists, field service technicians, customer service reps, and a full complement of electrical and mechanical engineers.

For immediate assistance:

- Call us at **(800) 332-1111**
- Visit our **online support portal**

FIELD SERVICE

We help ensure the reliability and availability of your equipment with on-site equipment evaluation, repairs, maintenance, and planning. With a large field service staff, we can handle any job — big or small, high precision or high volume — anywhere in the world.

REPLACEMENT AND SPARE PARTS

High-quality spare and replacement parts help ensure maximum uptime for your equipment. We supply thousands of spare parts, including control boards, amp and volt meters, potentiometers, fuses, thermal switches, diodes, thyristors, IGBTs, contactors, relays, and fans.

REMOTE MONITORING

When you have up-to-the-minute knowlege, you're able to make better decisions and avoid costly downtime and unplanned maintenance. We offer precise, real-time data on the health and useful life of your Dynapower equipment with remote condition monitoring.

About Dynapower

Since 1963, Dynapower has provided power electronics solutions and aftermarket services to an ever-expanding global customer base, with a focus on continuous reliability and efficiency. We are a trusted leader in all types of power conversion equipment, including high-power rectifiers, inverters, DC-DC converters, integrated battery energy storage systems, and transformers for a variety of industries and markets. Powered by the pursuit of a greener future, we are rolling up our sleeves and pushing the boundaries of science and innovation to shift the way our world uses power.

ABOUT SENSATA TECHNOLOGIES

Sensata Technologies is a global industrial technology company striving to create a safer, cleaner, more efficient and electrified world. Through its broad portfolio of mission-critical sensors, electrical protection components and sensor-rich solutions, Sensata helps its customers address increasingly complex engineering and operating performance requirements. With more than 18,000 employees and global operations in 14 countries, Sensata serves customers in the automotive, heavy vehicle & off-road, industrial, and aerospace markets.

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POWERING A CLEANER PLANET