



# 125kW

## Grid-Resilient 125kW AC/DC Power Conversion System (PCS)

- *Transformerless Isolation*
- *Industry's Smallest Form Factor*
- *Supports Global Grid Standards*
  - 60Hz/50Hz
  - On-Grid/Off-Grid
- *Microgrid Enabling*
- *Designed and Manufactured in the USA*

### TRANSFORMERLESS ISOLATION

The Ideal Power 125B2-4F Power Conversion System (PCS) utilizes our proprietary Power Packet Switching Architecture ("PPSA") to efficiently transfer energy between its AC and DC power ports. PPSA provides port-to-port electrical isolation, eliminating the need for an external isolation transformer.

### GRID-RESILIENT

Beyond the grid-tied functionality described above, the PCS is easily re-configured to support a wide variety of microgrid applications, making it ideal for free-standing island or rural power systems, as well as grid-resilient applications in regions where grid quality or grid availability is often compromised.

### SIMPLE AND FLEXIBLE INTEGRATION

Firmware control platform and Modbus command/ control interface is shared across product family, improving product flexibility while simplifying systems integration and code maintenance.

### SMALLEST FORM FACTOR

Our PCS enclosure weighs approximately 425 pounds and is NEMA 3R rated. The system may be wall or floor mounted with supplied bolt-on 18" legs. Two systems are easily shipped on a standard 48" x 44' pallet.

### MEETS OR EXCEEDS STANDARDS

The converter's nameplate rating of 125kW supports 480V/60Hz 3-Phase North American grid standards; and both AC output voltage and AC output frequency are user programmable via the unit's Modbus interface. For 50Hz/400V<sub>AC</sub> 3-phase applications found outside of North America, the nominal nameplate rating is 100kW. Single-phase 60Hz/50Hz grid standards are also supported: in single-phase mode, an external autotransformer enables delivery of 60kW+ of bi-directional AC power. Four-quadrant reactive power is also supported, and the product features a SunSpec compliant-controls interface.

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## Specifications

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<b>Bidirectional AC Power Port</b>	
Maximum AC Power	125kW at 480V <sub>AC</sub> 100kW at 400V <sub>AC</sub> 60kW in single-phase mode (requires external autotransformer)
Maximum AC Current	160 Amps
Voltage Range	480V <sub>AC</sub> to 400V <sub>AC</sub> , user programmable
Frequency Range	45Hz to 65Hz, user programmable
Power Factor	> 0.97 at rated output power
<b>CEC Efficiency</b>	<b>96.5% (est.)—Best in Class!</b>
Peak Efficiency	97%
Tare Losses	< 25W
Current Harmonics	IEEE 1547 Compliant, < 4% THD
Transient Protection	IEEE C62.41 Class B: external AC surge suppression also required
Off-Grid Mode	Voltage Forming / Load Following
<b>Bidirectional DC Power Port</b>	
Maximum DC Power	125kW
Maximum DC Current	250 Amps
Absolute Max Voltage (Voc)	± 600V <sub>DC</sub> (1200V <sub>DC</sub> )
Operating Voltage Range	±100 to ± 500V <sub>DC</sub> (200 to 1000V <sub>DC</sub> )
Full Power Voltage Range	± 250 to ± 500V <sub>DC</sub> (500 to 1000V <sub>DC</sub> )
Available Control Methods	Constant Power, Constant Current, MPPT (PV)
Wiring Configuration	4 Wire Bipolar with Integral GFDF Circuit
Maximum GFDI Current	1A: fused; trip point is programmable
Transient Overvoltage	Yes, MOV voltage clamps
<b>Environmental</b>	
Ambient Operating Temp	-25 to 50°C full power, reduced power > 50°C
Ambient Storage Temp	-40 to 85°C (non-operating)
Humidity	0 to 100% relative humidity
Cooling	Forced convection with redundant variable speed fans
Enclosure / Rating / Material	NEMA-3R / Powder-coated aluminum
Certifications	UL1741 – IEEE1547 (pending); CEC and other world standards pending
<b>General</b>	
Enclosure Size	34" W x 54" H x 16" D (without optional 18" legs)
Weight	425 lbs
Mounting	Floor or Wall Mount
Isolation Transformer	Not Required
Control Interface	RS-485 / Modbus, Ethernet / Modbus TCP
Warranty	10 years