30kW, Storage Inverter for North America

The CPS 30kW energy storage inverter is designed for use in commercial and industrial scale grid-tied energy storage systems. The inverter is optimized to meet the needs of the most demanding behind the meter energy storage applications including demand charge reduction, power quality, load shifting, and ancillary grid support services such as frequency response and voltage support. The CPS 30kW energy storage inverter is designed specifically for the North American environment and is based on the same platform as the >40,000 CPS commercial string inverters already operating on the US grid. High efficiency, parallel operation, wide operating voltages, broad temperature ranges and a NEMA 4X enclosure make this an ideal building block for any commercial or industrial energy storage application. The CPS 30kW energy storage inverters ship with touch safe fusing, monitoring, and load break AC and DC disconnect switches.

**Efficiency Curve**

![Efficiency Curve Graph](image)

**High Efficiency**
- Maximum efficiency of 98% Discharge; 97.6% Charge
- 3-level topology with advanced controls
- Transformerless design

**High Reliability**
- “Electrolyte-free design” for long-term reliability
- Standard warranty: 5 years, extension up to 20 years
- Advanced thermal design with variable speed fans
- Ground-fault detection and interruption circuit

**Broad Adaptability**
- NEMA 4X, suitable for indoor and outdoor applications
- Utility interactive controls: Active power derating, reactive power control
- Optional CPS Flex Gateway enables remote FW upgrades
- Separate wiring box design
- Integrated load break AC and DC disconnects
- Advanced Smart-Grid features (CA Rule 21)
- 150ms response to set point commands
- Compatible with high voltage Li-Ion battery racks
# Technical Data

<table>
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<tr>
<th>Model Name</th>
<th>CPS ECB 30KTL-O/US</th>
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## DC Input
- **Nominal DC Input Power**: 31kW
- **Max. DC Input Voltage**\(^1\): 900Vdc
- **Nominal DC Input Voltage**: 650Vdc
- **DC Full Power Voltage Range**: 450~800Vdc
- **DC Operation Voltage Range**\(^1\): 250~900Vdc
- **Max. DC Input Current**: 70A
- **Number of DC Inputs**: 4 x 30A Fuse Holders
- **DC Disconnection Type**: Load rated DC switch

## AC Output
- **Rated AC Output Power**: 29.99kW
- **Max. AC Output Power**: 33kVA
- **Rated Grid Voltage**: 480VAC
- **Grid Voltage Range**\(^2\): 422-528Vac
- **Rated Grid Frequency**: 60HZ
- **Grid Frequency Range**\(^2\): 57~63Hz
- **Continuous AC Power - Charge**: 20kW/25kVA
- **Continuous AC Power - Discharge**: 29.99kW
- **Maximum Continuous AC Current**: 40A
- **Grid Connection Type**: 3 phase/PE/N (Neutral optional)
- **Total Harmonic Distortion**: <3%
- **Power Factor**: >0.99 (±0.8 adjustable)
- **AC Disconnection Type**: Load rated AC switch

## DC Output
- **Continuous DC Power - Charge**: 20kW/25kVA
- **Output Voltage Range**: 0~900V

## System
- **Topology**: Transformerless
- **Max. Efficiency**: 97.5%
- **CEC Efficiency**: 97.0%

## Environment
- **Protection Degree**: NEMA 4X
- **Cooling**: Variable speed cooling fans
- **Operating Temperature Range**: -22°F to +140°F/-30°C to +60°C (derating from +113°F/+45°C)
- **Storage Temperature Range**: -40°F to +158°F/-40°C to +70°C
- **Operating Humidity**: 0-95%, non-condensing
- **Operating Altitude**: 13123.4ft/4000m (derating from 6561.7ft/2000m)

## Display and Communication
- **User Interface and Display**: LCD+LED
- **Communication**: Modbus RS485 and Ethernet XML HTTPS
- **Modbus Data Mapping**: CPS

## Mechanical
- **Dimensions (WxHxD)**: 600×1000×230mm
- **Weight**: Inverter:122lbs/55kg; Wirebox:20lbs/9kg
- **AC Termination**: Screw Clamp Terminal Block (Wire range: #8 - 1AWG CU, #6- 1AWG AL)
- **DC Termination**: Screw Clamp Terminal Block (Wire range: #4- 1AWG CU, #3- 1AWG AL)

## Safety
- **Safety and EMC Standard**: UL1741:2010, IEEE1547; FCC PART15

## Warranty
- **Standard**: 5 years
- **Extended Terms**: Up to 20 years

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1) Exceeding the Max. DC Input Voltage may cause permanent damage to the equipment.
2) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.