

CPS-1500 & CPS-3000 Fuel Cell Inverters

Reliable, proven technology for fuel cell to grid power conversion

The CPS-1500 and CPS-3000 utility interactive inverters are ideal for connecting stationary hydrogen fuel cells to an AC grid. CPS Fuel Cell Inverters are capable of operating in grid-tied and stand-alone mode and feature advanced control algorithms to support both modes of operation.

Available in indoor and outdoor configurations from 875kVA to 3000kVA, modular units can be paralleled to scale with project size to meet fuel cell array requirements. Designed for utility interconnection, CPS Fuel Cell Inverters contain all required protective features and comply with applicable IEEE and UL standards.

The CPS-1500 and CPS-3000 offer best-in-class control modes including Dynamic Transfer, isochronous and droop-based islanding, black start capability with robust inrush AC current limiting, and are capable of power control and DC voltage control with active current and voltage curtailment to ensure fuel cell operation is maintained within optimal operating points.



System Advantages

- Proven technology with more than 400MW deployed
- Designed for utility interconnection
- Capable of operating over a wide DC voltage range (550–1500V_{DC})
- Seamless transfer from grid-tied to stand-alone mode with patented Dynamic Transfer feature

Advanced Control Modes

- Islanded Operation (UF Mode)
- Dynamic Transfer
- Black Start (In-Rush Current Handling in UF Mode)
- Frequency Compensation Mode (F-Comp)
- VAR Compensation Mode (E-Comp)
- AC Current Limiting
- Low Voltage Ride-Through (LVRT) with Active Current Injection

CPS-1500 TECHNICAL SPECIFICATIONS

Electrical

DC Voltage Range:	550–1500V _{DC} (@350–600V _{AC})
Maximum DC Current:	1720A _{DC}
Power Factor:	0–1.00 Leading or Lagging
Current Harmonics:	IEEE 1547 Compliant, <5% TDD
AC Input Voltage:	600V _{AC} / 480V _{AC} / 350V _{AC}
Grid Frequency:	60Hz
Maximum Apparent Power:	1500 kVA (@600V _{AC}) 1200 kVA (@480V _{AC}) 875 kVA (@350V _{AC})
Maximum Real Power:	1500 kW (@600V _{AC}) 1200 kW (@480V _{AC}) 875 kW (@350V _{AC})
Maximum AC Current:	1444A _{RMS}
Maximum Efficiency:	98.5%
CEC Efficiency:	97%

Environmental

Operating Temp:	-35 to +60°C, De-rated above +45°C
Max Elevation:	1,000 Meters Full Power Up to 3,000 Meters with De-rating
Cooling:	Forced Air Cooled
Enclosure:	NEMA 1/IP 20 (Indoor) NEMA 3R/IP 54 (Outdoor)
Dimensions (HxWxD):	81" x 55" x 33" (Indoor) 102" x 96" x 118" (Outdoor)
Weight:	3,080 lbs (Indoor) 11,000 lbs (Outdoor)

Certifications & Standards Compliance

UL1741 SA
IEEE 1547
CSA 22.2 #107.1
IEEE 519

Hardware Protections

AC Breaker with Shunt Trip
AC Surge Protection
DC Input Fuses
DC Pre-Charge
DC Disconnect

Software Protections

Current and Voltage Curtailment Limits
AC Current Limiting Pending
DC Over/Under Voltage, Over Current Fault
AC Over/Under Voltage, Over/Under Frequency, Over Current Faults
Anti-Islanding Protection (Open Phase at Inverter Terminals)
Temperature Monitoring and Protective Power Curtailment



CPS-3000 TECHNICAL SPECIFICATIONS

Electrical

DC Voltage Range:	550–1500V _{DC} (@350–600V _{AC})
Maximum DC Current:	1720A _{DC}
Power Factor:	0–1.00 Leading or Lagging
Current Harmonics:	IEEE 1547 Compliant, <5% TDD
AC Input Voltage:	600V _{AC} / 480V _{AC} / 350V _{AC}
Grid Frequency:	60Hz
Maximum Apparent Power:	3000 kVA (@ 600V _{AC}) 2400 kVA (@480V _{AC}) 1750 kVA (@350V _{AC})
Maximum Real Power:	3000 kW (@600V _{AC}) 2400 kW (@480V _{AC}) 1750 kW (@350V _{AC})
Maximum AC Current:	1444A _{RMS} x 2
Maximum Efficiency:	98.5%
CEC Efficiency:	97%

Environmental

Operating Temp:	-35 to +60°C, De-rated above +45°C
Max Elevation:	1,000 Meters Full Power Up to 3,000 Meters with De-rating
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Anti-Islanding Protection (Open Phase at Inverter Terminals)
Temperature Monitoring and Protective Power Curtailment



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