

MPS-125 Fuel Cell Inverter

Compact design and reliable performance for fuel cell to grid power conversion

The MPS-125 utility interactive inverter is ideal for connecting stationary hydrogen fuel cells to an AC grid. MPS Fuel Cell Inverters can operate in grid-tied and standalone mode and feature advanced control algorithms to support both modes of operation.

Available in an outdoor rated enclosure, the modular 125kVA units can be paralleled to scale with project size to meet fuel cell array requirements. Designed for utility interconnection, MPS Fuel Cell Inverters contain all required protective features and comply with applicable IEEE and UL standards.

The MPS-125 offers 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 125MW deployed
- Designed for utility interconnection
- 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

MPS-125 TECHNICAL SPECIFICATIONS

Electrical

| | |
|-------------------------|--|
| DC Voltage Range: | 740–1500V _{DC} (@350–600V _{AC}) |
| Maximum DC Current: | 171A _{DC} |
| Power Factor: | 0–1.00 Leading or Lagging |
| Current Harmonics: | IEEE 1547 Compliant, <5% TDD |
| AC Input Voltage: | 480V _{AC} |
| Grid Frequency: | 60Hz |
| Maximum Apparent Power: | 125 kVA (@480V _{AC}) |
| Maximum Real Power: | 125 kW (@480V _{AC}) |
| Maximum AC Current: | 150A _{RMS} |
| Maximum Efficiency: | 98.7% |
| CEC Efficiency: | 97% |

Environmental

| | |
|---------------------|--|
| Operating Temp: | -35 to +50°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 3R/IP 54 |
| Dimensions (HxWxD): | 42.5" x 29.5" x 15.5" |
| Weight: | 230 lbs |

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 Disconnect
DC Pre-Charge (Optional)

Software Protections

Current and Voltage Curtailment Limits
AC Current Limiting Pending
DC Over/Under Voltage, Over Current Faults
AC Over/Under Voltage, Over/Under Frequency, Over Current Faults
Anti-Islanding Protection (Open Phase at Inverter Terminals)
Temperature Monitoring and Protective Power Curtailment
Watchdog Timer to Detect Loss of Communications



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