Power Conversion System

HPCS125

HPCS125 is based on ANPC, Peak efficiency > 99%; Intelligent liquid cooling; Higher power density and smaller size; no derating up to 45 °C; IP65, adapting to high salt, high humidity, high temperature, high evaporation and other complex and harsh operating environments。

Compact construction, efficient conversion

- ANPC topology, peak efficiency > 99%
- Intelligent liquid cooling, no derating up to 45 °C
- Higher power density and smaller size
- Adapted to high altitude, up to 5000m
- IGBT Delta-T < 2°C, extend service life

High compatibility, quick adjustment

- DC voltage range 580~1000V, rated output power 125kW, compatible with various specifications of battery cells(280AH~320AH)
- Supports on-grid, off-grid, and hybrid (on/off-grid) modes, constant voltage, constant current and constant power in battery charge/discharge

Multi-scene applications

- Support L/HVRT, stable operation in weak grid, efficient and adaptable
- Comply with GB/T 34120-2023
- Managing low harmonics and three-phase power imbalances
- 3P4W grid type, Supports 100% single-phase unbalanced loads in off-grid mode

Comprehensive protection, safe and reliable

- IP65, Explosion-proof housing, safe and reliable
- Load switch, fuses and buffer circuit on DC side
- Over-voltage and over-current protection, linkable with BMS and EMS, realization of multiple protections
- Grouped protection to reduce the barrel effect
- Fault filtering, 500ms duration

Technical Specifications

Model	HPCS125
DC Side	
DC voltage range	580 to 1000V
Maximum continuous DC-side current @45℃	214.8A
Number of inputs	1
AC Side (On-Grid)	
Rated output power @50℃	125kW
Maximum continuous output power @45℃	137.5kW
Rated current @50℃	180.4A
Maximum continuous AC-side current @45℃	198.5A
Rated AC voltage	400V
AC voltage range	340 to 440V
Rated grid frequency / grid frequency range	50Hz / 45 to 55Hz
DC injection	< 0.5% * rated current
AC current harmonic	< 2% (@rated power)
Power factor	> 0.99 (@rated power)
Power control precision	⩽ 1%Pn (output power > 20% * Pn)
Reactive power adjustment range	-105% to +105%
Grid type	3P3W / 3P4W (compatible)
Charge/discharge switching time	< 20ms
AC Side (Off-Grid)	
Rated AC voltage	400V
AC voltage range	340 to 440V
Rated grid frequency / grid frequency range	50Hz / 45 to 55Hz
Output voltage imbalance	< 2% (< 4% in short time)
AC voltage harmonic	< 2% (off-grid with no load or rated resistive load)
DC component of AC-side voltage	< 0.5% Un (balanced linear load)
Unbalance load capacity	100% (single-phase load 41.6kVA)
Efficiency	
Peak efficiency	> 99%
Protection and Overload	
DC input / reverse polarity protection	Load switch + Fuses
Surge protection	DC Type II / AC Type II
Grid monitoring and grounding fault monitoring	Integrated
Insulation monitoring	Integrated
Overheat and overtemperature protection	Integrated
Short circuit protection	Integrated
DC overvoltage and undervoltage protection	Integrated
AC line phase sequence error protection	Integrated
Cooling system failure protection	Integrated
Communication failure protection	Integrated
Anti-islanding protection	Integrated, Combination of active and passive
Overload capacity	Operate for a long time at 1.1 times the rated load. Operate for no less than 2 minutes at 1.2 times the rated load
General Data	
Dimensions（W×H×D）	650 × 250 × 750 mm
Weight	75kg
Operating temperature	-35 to +60℃ (> 45℃, derating operation)
Operating humidity	0 to100%RH (non-condensing)
Altitude	⩽ 5000m (> 3000m, derating operation)
IP rating	IP65
Cooling method	Intelligent liquid cooling
Isolation method	Transformerless isolation
Overvoltage degree	DC port : II, AC port : III
Display and Communication	
Display	LED + S-Miles Installer APP
Communication interface	RS485, CAN, Ethernet, WIFI
Communication protocol	MODBUS-RTU, CAN2.0, MODBUS-TCP
Standard and Regulation	
Compliance	GB/T 34120, GB/T 34133, GB/T 36547, IEC/EN 62477, IEC/EN 61000

* Subject to actual product shipment