

BSE125KH3

Experience Uninterrupted Power with
Bluesun Energy Storage Inverters

125KW

Three Phase | High Voltage

Unique Advantages:

- Supports PV input up to 200% of the inverter's rated DC power, maximising solar utilisation
- Supports up to 21A PV input current, compatible with the latest high-power PV modules
- Compatible with 100-314Ah battery cells, helping reduce energy storage system costs
- Supports battery charge/discharge current up to 200A, ideal for peak-valley arbitrage and frequency regulation applications
- 160% overload for 200ms in off-grid mode, ensuring stable startup of motors and water pumps
- Supports generator input across a wide range (20%–100% of rated power), reducing investment costs
- Two independent battery connections, allowing more flexible system configuration
- AI-Powered & VPP-Ready - maximise savings, unlock additional income
- 7-inch industrial-grade screen, providing a larger, user-friendly interface for local operation



Leading Advantages:

- Supports DC and AC coupling for PV, allowing flexible system expansion and retrofitting
- Battery reserve function across multiple scenarios, ensuring reliable backup power
- Smart Load management with prioritisation, extending backup time for critical loads
- Smart port enables multiple energy source inputs, including grid-tied inverters, diesel generators, and wind turbines
- Seamless on/off-grid switching in under 10ms, guaranteeing uninterrupted power supply
- Supports up to 10 units in parallel. For systems with more than 6 units, use of a Solis power distribution cabinet is recommended

DATASHEET

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Models		125K	
Input DC (PV side)			
Recommended max. PV array size		250 kW	
Max. usable PV input power		250 kW	
Max. input voltage		1000 V	
Rated voltage		600 V	
Start-up voltage		180 V	
MPPT voltage range		150 - 950 V	
Max. input current		10 × 42 A	
Max. short circuit current		10 × 60 A	
MPPT number / Max. input strings number		10 / 20	
Battery			
Battery type		Li-ion	
Battery voltage range		300 - 950 V	
Max. charge / discharge current		200 A / 100 A + 100 A	
Number of battery ports		2	
Max. charge / discharge current of each port		100 A	
Communication		CAN / RS485	
Output AC (Grid side)			
Rated output power		125 kW	
Max. apparent output power		125 kVA	
Rated grid voltage		3/N/PE, 220 V / 380 V, 230 V / 400 V	
Rated grid frequency		50 Hz / 60 Hz	
Rated grid output current		189.9 A / 180.4 A	
Power factor		> 0.99 (0.8 leading - 0.8 lagging)	
THDi		< 3%	
Input AC (Grid side)			
Max. input current		250 A	
Output AC (Back-up)			
Rated output power		125 kW	
Max. apparent output power		75-100K: 1.2 times of rated power, 10 mins; 1.4 times of rated power, 100 s; 1.6 times of rated power, 10 s; 2 times of rated power, 200 ms; 125K: 1.2 times of rated power, 100 s; 1.4 times of rated power, 10 s; 1.6 times of rated power, 200 ms	
Back-up switch time		< 10 ms	
Rated output voltage		3/N/PE, 220 V / 380 V, 230 V / 400 V	
Rated frequency		50 Hz / 60 Hz	
THDv (@linear load)		< 2%	
Input AC (Generator)			
Max. input power		125 kW	
Rated input current		189.9 A / 180.4 A	
Rated input voltage		3/N/PE, 220 V / 380 V; 3/N/PE, 230 V / 400 V	
Rated input frequency		50 Hz / 60 Hz	
Efficiency			
Max. efficiency		97.6%	
EU efficiency		97.2%	
BAT charged / discharged to AC max. efficiency		97.0%	
Protection			
Anti-islanding protection		Yes	
Output over current protection		Yes	
Short circuit protection		Yes	
Integrated DC switch		Yes	
DC reverse-polarity protection		Yes	
Surge protection		DC Type II / AC Type II	
Integrated AFCI 2.0		Yes	Optional
Protection class / Over voltage category		I/ DC II, AC III	
Optional (Brazil: Yes)			
General Data			
Max. allowable phase imbalance (grid & back-up)		100%	
Max. power per phase (grid & back-up)		41.66 kW	
Dimensions (W × H × D)		1174 × 814 × 400 mm	
Weight		170 kg	
Topology		Transformerless	
Operating ambient temperature range		-25 ~ +60°C	
Relative humidity		0 - 100%	
Ingress protection		IP66	
Cooling concept		Intelligent fan-cooling	
Max. operation altitude		3000 m	
Grid connection standard		G99, VDE-AR-N 4105/VDE V 0124, EN 50549-1&2/EN 50549-10, VDE 0126/UTE C 15/VFR:2019, NTS 631/RD 1699/RD 244/UNE 206006/UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, TOR, EIFS 2018.2, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA,PORTARIA Nº 140, DE 21 DE MARÇO DE 2022; Brazil (75K: ORDINANCE (PORTARIA) NO.140, ORDINANCE NO. 515; 100K/125K: NBR 16149, NBR 16150, IEC 62116)	
Safety / EMC standard		IEC/EN 62109-1/-2, IEC/EN 61000-6-2/-4, EN 55011	
Features			
PV connection		MC4 Quick connection plug	
Battery connection		Terminal connector	
AC connection		Terminal block	
Display		7.0" LCD display & Bluetooth + APP	
Communication		CAN, RS485-115200, Ethernet, Optional: Wi-Fi, Cellular, LAN	

(1) Supporting parallel 140A input.