SolisStorage

SolisStorage PrimePower ESS

PrimePower-109kWh-50kW-NV

6 Unique Advantages

- ★ Uses advanced 306Ah CATL cells, delivering outstanding performance with long-term durability
- ★ Features an aluminium alloy baseplate with patented natural cooling and IP67 protection
- ★ Fan-less design means no regular maintenance, with a flammable gas detector that stays accurate for 10 years
- ★ 15 Layers of escalating protection – from the cell, through the pack, to the entire system
- ★ Zero heat transfer between inverter and cells improves stability and extends lifespan
- ★ SolisCloud: Smart remote control, AI optimisation, and instant troubleshooting - all in one platform

4 Leading Advantages

- Supports 13 mainstream applications under both strong and weak grid conditions
- <10ms transfer from on-grid to off-grid for uninterrupted power supply ①
- Flexible system expansion, up to 500kW/6.5MWh to meet growing energy needs ②
- Supports remote monitoring and OTA upgrades on the SolisStorageCloud app

① Transfers between on-grid and off-grid in under 20 milliseconds when using multiple inverters in parallel.

② When inverters in parallel >6 units, use of a Solis power distribution cabinet is recommended.

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DATASHEET

Models	PrimePower-109kWh-50kW-NV
System	
Rated energy capacity	109.7 kWh
Max. cycle rate	0.5 P
Max. cycle efficiency ①	89%
Usable energy capacity	98.7 kWh
Dimensions (W × H × D)	1270 × 2070 × 1357 mm
Dimensions (without inverter) (W × H × D)	950 × 2070 × 1357mm
Weight	1320 kg (Cabinet) + 73 kg (Inverter)
Operating temperature range	-25 ~ +55°C
Storage temperature range	0 ~ 40°C
Operating humidity range	≤95% (non-condensing)
Max. operation altitude	4000 m
System temperature control mode	Industrial-grade air-conditioning (Cabinet); Natural cooling (Pack); Intelligent fan-cooling(Inverter)
Fire suppression mode	Default: Aerosol, Explosion relief valve, Fire water inlet Optional: Flammable gas detector, Explosion relief panel, Audible and visual alarm
Ingress protection	IP55 (Cabinet) + IP66 (Inverter)
Anti-corrosion class (Battery)	C4/C5 (Optional)
Anti-corrosion class (Inverter)	C5
Noise (rated operating condition)	70 dB @ 1 m
Lightning protection	Type II (AC port), Type II (PV&Battery)
Protection mode	Anti-islanding protection, residual current detection, insulation resistance detection, AC overcurrent protection, and AC cable connection protection
Certification standards	IEC62619, IEC61000-6/2/4, IEC62040, IEC63056, IEC62477, UN38.3
Battery	
Cell type	LFP 3.2 V / 306 Ah
Cell cycle life ②	10000
System battery configuration	1P112S
Rated voltage	358.4 V
Operating voltage range	313.6 ~ 403.2 V
Rated DC current	153 A
Number of battery packs	7
Battery pack capacity	15.67 kWh
Battery pack weight	102 kg
Inverter	
Inverter model	S6-EH3P50K-H
Rated output power	50 kW
Max. apparent output power@On-grid	50 kVA
Rated grid voltage	3/N/PE, 220 V / 380 V; 3/N/PE, 230 V / 400 V
Rating grid frequency	50 Hz / 60 Hz
AC grid frequency range	45 - 55 Hz / 55-65 Hz
Rated output current	76 A / 72.2 A
Max. apparent output power@Off-grid	1.6 times of rated power, 2 s
Back-up switch time	< 10 ms
Power factor	> 0.99 (0.8 leading - 0.8 lagging)
THDi / THDv (@linear load)	<2% / < 3%
Max. usable PV input power	96 kW
Recommended max. PV array size	100 kW
Max. input voltage	1000 V
Rated voltage	600 V
Start-up voltage	180 V
MPPT voltage range	150 - 850 V
Max. input current	4 × 40 A
Max. short circuit current	4 × 60 A
MPPT number / Max. input strings number	4 / 8
Communication	CAN, RS485, LAN, Optional: Wi-Fi, Cellular
Max. parallel quantity (off-grid)	10

① Rated operating condition: Based on test condition of 25±2°C, 0.5P charge and discharge rate, and the AC output voltage is 400 Vac.
② This is provided by the battery cell manufacturer. Based on test condition of 25±2°C, 0.5P charge and discharge rate and SOH=70%.