SolisStorage

FlexAIO Single Phase

6-54kWh All-in-One Stackable High-Voltage Energy Storage System (ESS)

Flexible All-in-One Stackable Storage
AI-Powered Energy Control

- Uses A+ grade cells, ≥10,000+ cycle life ①
- Five-layer hardware redundancy protection as standard
- Supports 200% PV oversizing, maximizing solar energy utilization
- Supports 150% overload for 10 seconds in off-grid mode
- Supports seamless on-grid and off-grid switching with transfer times <10ms
- Designed for all environments: IP66 protection & C5-M anti-corrosion
- Intelligent thermal management with standard battery heating and active cooling, operable from -20°C to 55°C
- Supports mixing of 6kWh and 9kWh battery packs, as well as old and new batteries
- Each cluster supports up to 6 stacked modules, with up to 6 clusters in parallel, expandable to a maximum of 324kWh
- Independent module management with intelligent per-cluster optimisation
- The system continues to operate safely even if a single battery pack fails
- Dedicated VPP communication channel, plug-and-play direct connection to third-party EMS/VPPs with an open protocol
- Solis AI – smart energy management with generator support
- Integrated stackable design for quick and easy installation within 5 minutes
- Supports OTA remote upgrades for efficient operation and maintenance

FlexAIO 54kWh ESS

With S7-EH1P(3-10)K-NV-ND-D stacked inverter



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DATASHEET

S7-EH1P(3-10)K-NV-ND-D

Models	3K02	3.6K02	4.6K02	5K02	6K02	8K03	10K04
Input DC (PV side)							
Recommended max. PV access power	6 kW	7.2 kW	9.2 kW	10 kW	12 kW	16 kW	20 kW
Max. PV input voltage	600 V						
Rated voltage	350 V						
Start-up voltage	90 V						
MPPT voltage range	50 - 550 V						
Full-load MPPT voltage range	300 - 510 V						
Max. input current ②	2 × 21 A					3 × 21 A	4 × 21 A
Max. short circuit current	2 × 24 A					3 × 24 A	4 × 24 A
MPPT number / Max. input strings number	2 / 1 + 1					3 / 1 + 1 + 1	4 / 1 + 1 + 1 + 1
Battery (Battery Connection)							
Battery module models	FlexAIO-BAT6kWh-D, FlexAIO-BAT9kWh-D						
Number of modules per controller	1 ~ 6pcs						
Battery module voltage range	260 - 406 V						
Max. charging / discharging power	3.3 kW	3.96 kW	5.06 kW	5.5 kW	6.6 kW	8.8 kW	11 kW
Max. charging / discharging current	12.7 A	15.2A	19.5 A	21.2 A	25.4 A	33.8 A	42.3 A
Output AC (Grid side)							
Rated output power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW	8 kW	10 kW
Max. apparent output power	3 kVA	3.6 kVA	4.6 kVA	5 kVA	6 kVA	8 kVA	10 kVA
Rated grid voltage	L/N/PE, 220 V / 230 V						
Rated grid frequency	50 Hz / 60 Hz						
Rated grid output current	13.7 A / 13.1 A	16.4 A / 15.7 A	20.9 A / 20 A	22.8 A / 21.7 A	27.3 A / 26.1 A	36.4 A / 34.8 A	45.5 A / 43.5 A
Power factor	> 0.99 (0.8 leading - 0.8 lagging)						
THDi	< 3%						
Input AC (Grid side)							
Max. input power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW	8 kW	10 kW
Input voltage range	187 - 253 V						
Max. input current	20.6 A	24.6 A	31.4 A	34.2 A	41 A	54.6 A	60 A
Output AC (Back-up)							
Rated output power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW	8 kW	10 kW
Max. apparent output power	1.5 times of rated power, 10 s						
Back-up switch time	< 10 ms						
Rated output voltage	L/N/PE, 220 V / 230 V						
Rated frequency	50 Hz / 60 Hz						
Rated output current	13.7 A / 13.1 A	16.4 A / 15.7 A	20.9 A / 20.0 A	22.8 A / 21.7 A	27.3 A / 26.1 A	36.4 A / 34.8 A	45.5 A / 43.5 A
Max. continuous AC passthrough current	20.6 A	24.6 A	31.4 A	34.2 A	41 A	54.6 A	60 A
THDv (@linear load)	< 3%						
Input AC (Generator side)							
Max. input power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW	8 kW	10 kW
Max. input current	13.7 A	16.4 A	20.9 A	22.8 A	27.3 A	36.4 A	45.5 A
Rated output voltage	L/N/PE, 220 V / 230 V						
Rated frequency range	50 Hz / 60 Hz						
Efficiency							
Max. efficiency	97.6%					97.5%	
EU efficiency	96.5%	96.5%	96.8%	96.8%	97.0%	96.8%	96.8%
Protection							
Surge protection	DC Type II / AC Type II (Optional)						
Output over current protection	Yes						
Insulation resistance monitoring	Yes						
Residual current detection	Yes						
Integrated PV switch	Yes						
DC reverse-polarity protection	Yes						
Protection class / Over voltage category	I / II						
Integrated AFCI	Yes						
Anti-islanding protection	Yes						
General Data							
Dimensions (W × H × D)	850 × 320 × 265 mm						
Weight	20 kg					25 kg	
Inverter topology	Non-isolated						
Operating temperature range	-30 ~ +60°C (Derated above 45°C)						
Relative humidity	0 - 95%						
Ingress protection	IP66						
Noise emission (typical)	<35 dB(A) (@ Rated Power)					<45 dB(A) (@ Rated Power)	
Cooling concept	Natural convection					Smart fan cooling	
Max. operation altitude	4000 m (Derated above 2000 m)						
Grid connection standard	NRS 097-2-1, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA, NBR 16149, NBR 16150, G98, CEI 0-21						
Safety / EMC standard	IEC/EN 62109-1/-2, EN 61000-6-2/-3						
Features							
DC connection	MC4 Quick connection plug (PV)						
AC connection	Quick connection plug						
Display	LED						
Communication	RS485, Optional: Wi-Fi, LAN, Ethernet, DI × 2 / DO × 2 / DRM0						

② When the ambient temperature is within the range of -30°C to +30°C, the maximum current can reach 21 A. When the ambient temperature is between +30°C and +45°C, the maximum current decreases.

Preliminary

DATASHEET

FlexAIO-BAT6kWh-D, FlexAIO-BAT9kWh-D

Models	6kWh	9kWh
Performance		
Battery type	$LiFePO_4$	
Nominal energy	6 kWh	9 kWh
Operating voltage	Single Phase: 250 - 406 V; Three Phase: 500 - 812 V	
Cell capacity	314 Ah	
Max. charge / discharge power	3 kW	4.5 kW
Peak charge / discharge power (10 seconds)	4.5 kW	6.75 kW
Depth of discharge	Max. 100% DOD	
Communication	CAN	
Cycle life ①	≥ 10000	
Protection		
Over/under voltage protection	Yes	
Over current protection	Yes	
Over/under temperature protection	Yes	
DC overcurrent fuses	Yes	
Aerogel thermal insulation plate	Yes	
Fire protection function	Yes	
Explosion release valves	Yes	
General Specification		
Dimensions (W × H × D)	850 × 270 × 265 mm	
Weight	59.2 kg	76 kg
Cooling	Natural convection	
Ingress protection	IP66	
Anti-corrosion class	C5M	
Operating ambient temperature range	-20~55 °C (Smart heating function)	
Storage temperature range	-20~55 °C	
Relative humidity range	5~95 %	
Max. operating altitude	4000 m	
Installation method	Floor standing / Wall-mounted	
Compatible inverters	S7-EH1P(3-10)K-NV-ND-D/S7-EH3P(5-20)K-NV-ND-D	
Standard Compliance		
Certificates	IEC 62619, IEC 63056, ISO13849, VDE 2510-50, UN 38.3, EN/IEC61000-6-1/2/3/4, IEC 60730-1, IEC 60529(IP), RoHS, REACH	

Preliminary

① Provided by battery cell manufacturer based on cell test condition of 25°C, 0.5P charge and discharge rate, 100% DOD and SOH=60%.