

**8-12K**

Residential Low Voltage Single Phase Hybrid Inverter

S7-EH1P(8-12)K02-NV-YD-L

Wide compatibility

- Works with a wide range of third-party batteries, giving installers more flexibility when designing residential storage systems
- Grid-adaptive control technology helps the system operate reliably in both weak and strong grid conditions
- Built-in Ethernet supports fast communication with VPP platforms and EMS systems
- 200% overload capability for 10 seconds helps start high-demand appliances such as motors, water pumps and air conditioners
- Seamless on/off-grid switching in under 4ms helps keep power running during grid outages



Easy to use

- 4.3-inch touchscreen and physical buttons make operation simple and reliable
- Fast commissioning allows plant creation and system setup to be completed in under 5 minutes
- Side-opening design, similar to a distribution box, makes installation and maintenance quicker and easier



High safety

- Battery and grid terminal temperature monitoring helps detect poor connections or installation issues early, reducing fire risk



DATASHEET

Models	8K	9K	9.9K	10K	12K
Input DC (PV side)					
Recommended max. PV array size	16 kW	18 kW	20 kW	20 kW	24 kW
Max. usable PV input power	12.8 kW	14.4 kW	16 kW	16 kW	19.2 kW
Max. input voltage			500 V		
Rated voltage			380 V		
Start-up voltage			100 V		
MPPT voltage range			100 - 430 V		
Max. input current			42 A / 42 A		
Max. current per DC input			21 A / 21 A		
Max. short circuit current			50 A / 50 A		
MPPT number / Max. input strings number			2 / 4		
Battery					
Battery type			Li-ion / Lead-acid		
Battery voltage range			40 - 60 V		
Max. charge / discharge current	190 A	200 A	210 A	210 A	250 A
Number of battery port / Number of BMS port			1 / 1		
Communication			CAN / RS485		
Output AC (Grid side)					
Rated output power	8 kW	9 kW	9.9 kW	10 kW	12 kW
Max. apparent output power	8 kVA	9 kVA	9.9 kVA	10 kVA	12 kVA
Rated grid voltage			1/N/PE, 220 V / 230 V		
Rated grid frequency			50 Hz / 60 Hz		
Rated grid output current	36.4 A / 34.8 A	40.9 A / 39.1 A	45 A / 43 A	45.5 A / 43.5 A	54.5 A / 52.2 A
Power factor			> 0.99 (0.8 leading - 0.8 lagging)		
THDi			< 3%		
Input AC (Grid side)					
Max. input power	12 kW	13.5 kW	14.8 kW	15 kW	18 kW
Input voltage range			187 - 253 V		
Max. input current	54.6 A / 52.2 A	61.4 A / 58.7 A	67.5 A / 64.5 A	68.3 A / 65.3 A	81.8 A / 78.3 A
Output AC (Back-up)					
Rated output power	8 kW	9 kW	9.9 kW	10 kW	12 kW
Max. apparent output power			2 times of rated power, 10 s		
Back-up switch time ^①			< 4 ms		
Rated output voltage			1/N/PE, 220 V / 230 V		
Rated frequency			50 Hz / 60 Hz		
Rated output current	36.4 A / 34.8 A	40.9 A / 39.1 A	45 A / 43 A	45.5 A / 43.5 A	54.5 A / 52.2 A
Max. AC passthrough current			100 A		
THDv (@linear load)			< 3%		
Input AC (Generator side)					
Max. input power	8 kW	9 kW	9.9 kW	10 kW	12 kW
Rated input current	36.4 A / 34.8 A	40.9 A / 39.1 A	45 A / 43 A	45.5 A / 43.5 A	54.5 A / 52.2 A
Rated input voltage			1/N/PE, 220 V / 230 V		
Rated input frequency			50 Hz / 60 Hz		
Efficiency					
Max. efficiency			97.5%		
EU efficiency			96.1%		
BAT charged by PV / AC max. efficiency			95.6%/94.5%		
Battery discharged efficiency			94.4%		
Protection					
Surge protection			Yes		
Output over current protection			Yes		
Insulation resistance monitoring			Yes		
Residual current detection			Yes		
Integrated PV switch			Yes		
DC reverse-polarity protection			Yes (PV only)		
Protection class / Over voltage category			I / II (PV and BAT), III (MAINS and BACKUP and GEN)		
Integrated AFCI 2.0			Optional		
Anti-islanding protection			Yes		
General Data					
Dimensions (W × H × D)			375 × 519 × 228 mm		
Weight			25.8 kg		
Inverter topology			Non-isolated (PV), Isolated (Battery)		
Self-consumption			< 30 W		
Operating temperature range			-25 ~ +60°C		
Relative humidity			0 - 100%		
Ingress protection			IP66		
Noise emission (typical)	< 50 dB(A)		< 55 dB(A)		
Cooling concept			Intelligent redundant fan-cooling		
Max. operation altitude			4000 m		
Grid connection standard			IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, EN 50549-1/-10, MEA, PEA		
Safety / EMC standard			IEC/EN 62109-1/-2, IEC 61000-6-1/-2/-3/-4		
Features					
PV connection			MC4 plug (PV port) / Terminal Block (BAT port)		
Battery connection			Terminal Block		
AC connection			Terminal Block		
Display			4.3" touchable LCD display & Bluetooth + APP		
Communication interface			Standard: WIFI+LAN+Bluetooth, CAN-BMS, CAN-Parallel×2, RS485-Meter, RS485, DRM, DI, DO, Optional: 4G		

① From On-Grid Mode to Off-Grid Mode: For a single inverter system, switchover time <4ms. For a parallel system which consists of up to 6 inverters, switchover time <20ms. If customer wishes to connect more than 6 inverters in parallel, please contact Solis Technical Team.