

Haier Energy



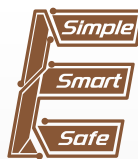
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Haier Energy



 **-Tower**
All-in-One System

HA1L All-in-One System

Easy installation, smart power distribution



All-in-One

PCS, battery, AC and DC distribution box



Quick Installation

Modular design, stackable installation, plug and play



Harsh Environment

IP65, for outdoor application



Extremely Safe

Arc Fault detection, 4-layer cell level and 6-layer system level protections



High Yields

Supports 1.6 DC : AC ratio to connect with different roof orientations



Smart Distribution Boxes

Power AC and DC distribution boxes, ready for connection to both the PV (solar) system and the grid

System Parameters			
System model	HA1L-3K5A1 HA1L-3.6K5A1 HA1L-5K5A1 HA1L-6K5A1	HA1L-3K10A1 HA1L-3.6K10A1 HA1L-5K10A1 HA1L-6K10A1	HA1L-3K15A1 HA1L-3.6K15A1 HA1L-5K15A1 HA1L-6K15A1
Production configuration	H1PL-1J3/3.6/5/6K-EU B051100P03-H HQBK-00-1P	H1PL-1J3/3.6/5/6K-EU 2x B051100P03-H HQBK-00-1P	H1PL-1J3/3.6/5/6K-EU 3x B051100P03-H HQBK-00-1P
System capacity	5 kWh	10 kWh	15 kWh
Weight [kg]	105 ± 2	155 ± 3	205 ± 4
No. of Parallel Batteries	1	2	3
Cycle Life	6000 times (25°C, 0.5C/0.5C, 90%DOD, 70% EOL)		
Ambient Temperature	Charging: (-10, 50) °C *		
	Discharging: (-20, 50) °C *		
Working Humidity	10% ~ 95% RH		
Storage Temperature	(-30, 60) °C		
Dimensions (W*H*D)[mm] (includes the casing and the base)	573 * 1529 * 263	573 * 1844 * 263	573 * 2159 * 263
Working Altitude	< 4000 m (derate over 2000 m)		
Enclosure Type	IP65		
Warranty	10 years		
Certification	IEC62619, CE, UN38.3, CEI, UL 1973, UL 9540 EN 50549-1:2019, PN-EN 50549-1:2019, RD 1699:2011, RD 661:2007, RD 413:2014, RD 647:2020, RD 244/2019, UNE 217002:2020, ITC-BT-40, CEI 0-21, G98, G99		
Distribution Box			
Model	HQBK-00-1P		
Grid side			
Grid Breaker	Electrical parameters	230 V / 40 A	
	Wire	2P	
Backup Breaker	Electrical parameters	230 V / 40 A	
	Leakage protection	30 mA (AC type)	
	Wire	1 P/N	
Surge Protection Device	Rated operating voltage	230 V	
	Vc (max continuous operating voltage)	385 V	
	In (nominal discharge current)	20 kA (8 / 20μs)	
	Imax (max discharge current)	40 kA (8 / 20μs)	
	Wire	1 P/N	
	Type	II	

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Battery side				
DC Breaker	Electrical parameters	80 V / 250 A		
	Wire	2P		
PV Box				
PV Switch	Electrical parameters	80 V / 25 A		
	Wire	4P		
Fuse	Electrical parameters	1000 V / 25 A		
	Breaking capacity	10 kA		
Surge Protection Device	Rated operating voltage	505 V		
	Vc (max continuous operating voltage)	1000 V		
	In/Nominal discharge current	20 kA (8 / 20 μs)		
	Imax/Max discharge current	40 kA (8 / 20 μs)		
	Wire	3P		
	Type	II		
	Battery module			
Model	B051100P03-H			
Battery Type	LiFePO4			
Rated Voltage	51.2 V			
Cell Configuration	1P16S			
Rated Energy	5.12 kWh			
Working Voltage Range	44.8 V ~ 55.2 V			
Rated Charging/Discharging Current	50 A			
Max. Discharging Current	100 A			
Standard charging method	Constant current and voltage limit (constant voltage point: 55.2V, stop-charging current 5A)			
Dimensions (W*H*D) [mm]	573 * 347 * 189			
Noise level dBA	< 32.5 dB (When the fan is running, the measurement is 1 meter away)			
Weight(kg)	50 ± 2			
Hybrid Inverter				
Model	H1PL-1J3K-EU	H1PL-1J3.6K-EU	H1PL-1J5K-EU	H1PL-1J6K-EU
Rated power	3 kW	3.6 kW	5 kW	6 kW
PV String Input Data				
Max. PV Input Power	4800 W	5700 W	8000 W	9600 W
PV Input Voltage Range	330 V (90 V ~ 520 V)	330 V (90 V ~ 520 V)	330 V (90 V ~ 520 V)	330 V (90 V ~ 520 V)
Full load MPPT Voltage Range	105 ~ 520 V	125 ~ 520 V	175 ~ 520 V	210 ~ 520 V
PV Input Current	16 A / 16 A	16 A / 16 A	16 A / 16 A	16 A / 16 A
Number of MPPTs/Max number of strings per MPPT	2 / 1	2 / 1	2 / 1	2 / 1
Back-up				
Rated Output Power	3 kW	3.6 kW	5 kW	6 kW
Max output current	21.8 A	26.2 A	36.5 A	40 A
Rated Output Voltage	1P/N/PE, 220 / 230 V	1P/N/PE, 220 / 230 V	1P/N/PE, 220 / 230 V	1P/N/PE, 220 / 230 V
Output Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
Output THDv (@linear load)	2%	2%	2%	2%
Output AC (Grid side)				
Rated Output Power	3 kW	3.6 kW	5 kW	6 kW
Rated Output Voltage	1/N/PE, 220 / 230 V	1/N/PE, 220 / 230 V	1/N/PE, 220 / 230 V	1/N/PE, 220 / 230 V
Voltage Range of Grid	187 ~ 253V	187 ~ 253V	187 ~ 253V	187 ~ 253V
Frequency of Grid	50 Hz / 60 Hz (45-55 Hz /55-65Hz)	50 Hz / 60 Hz (45-55 Hz /55-65Hz)	50 Hz / 60 Hz (45-55 Hz /55-65Hz)	50 Hz / 60 Hz (45-55 Hz /55-65Hz)
Rated Output Current of Grid	13.6A / 13.0A	16.4 A / 15.7 A	22.7 A / 21.7 A	27.3 A / 26.1 A
Max. Output current	15 A	18.2 A	25 A	30 A
Power Factor	>0.99 (0.8 leading - 0.8 lagging)	>0.99 (0.8 leading - 0.8 lagging)	>0.99 (0.8 leading - 0.8 lagging)	>0.99 (0.8 leading - 0.8 lagging)
Output THDi	<2%	<2%	<2%	<2%
Input AC (Grid side)				
Input voltage range	187 - 253 V			
Max. input current	20 A	24.6 A	31.4 A	40 A
Frequency range	45 - 55 Hz / 55 - 65 Hz			
General Data				
Dimensions(W*H*D)[mm]	405 * 480 * 205			
Weight(kg)	24.2 ± 2			
Topology	High frequency isolation (for battery)			
Ambient Temperature	[-20, 50] °C			
Cooling concept	Natural convection			
Working Altitude	< 4000 m (derate over 2000 m)			
Safety & EMC standard	IEC/EN 62109-1/-2, EN 61000-6-1/-2/-3/-4			
Features				
DC connection	MC4 connector			
AC connection	Quick connection plug			
Display	LED + APP			
Communication	RS485, CAN, Wi-Fi, LAN			

* Battery performance (Based on cell temperature)

When T > 45 °C or T ≤ 10 °C, the battery will reduce its charging or discharging power;

Charging

- ① When SOC ≥ 80%, the voltage protection strategy will start to execute and the battery charging power will decrease;
- ② When -10 °C < T ≤ 0 °C, before charging the battery cell needs to be heated to a temperature greater than 3 °C ;
- ③ When T > 45 °C, the battery cell will reduce power due to overheating, with a maximum temperature of 54 °C ;

Discharging

- ① When T < 10 °C, the battery cell will reduce power due to low temperature, with a minimum temperature of -20 °C ;
- ② When T > 45 °C, the battery cell will reduce power due to overheating, with a maximum temperature of 58 °C ;

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