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Three-Phase Home Energy Storage System

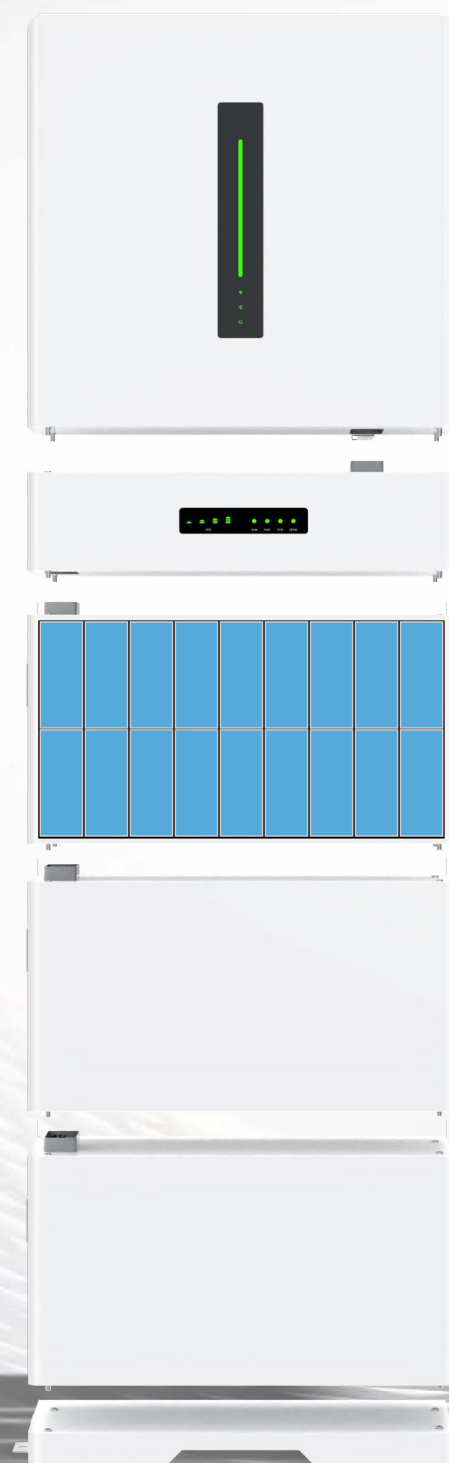
All in one

EAHI10-20KTH Series





All-in-one design
Less is more



----- Hybrid Inverter

----- Integrated Distribution Box

----- Battery

Internal integration:
16strings of 100Ah battery cells+3.3kW DCDC optimizer
(supporting mixed use of new and old batteries,active equalization)

PTC heating film
(supporting -20°operation)

Aerogel between the battery cells for heat insulation
(heat spread protection reaching the vehicle specification level)

----- Base

EAHI10-20KTH Series three-phase household energy storage system integrates high-voltage inverter EAHI10-20KTH-S, high-voltage battery EHBS-P5-TH, and distribution expansion units PDU-SH-Y and PDU-SH-F. The system adopts an integrated design that is plug and play, making installation convenient; IP66 protection level design, safe and reliable; The built-in optimizer of the battery supports the mixing of old and new batteries and can automatically balance them. This system has strong access capabilities and can simultaneously connect to mains power, photovoltaic power, generators, and backup loads, supporting AC coupling between photovoltaic power and charging piles. Whether it is spontaneous self use, peak shaving and valley filling, emergency backup power supply, building a diesel solar energy storage microgrid, or providing open API interfaces to connect with third-party platforms to achieve demand response and participate in dynamic electricity price scheduling, this system can perfectly meet the needs and provide efficient and reliable energy storage solutions for households and small industrial and commercial users.



Modular battery
More flexible expansion.



Lithium iron phosphate battery, IP66 outdoor protection level, built-in fire protection module



Battery modular design, stacking plug-in installation, plug and play. Built-in DCDC optimizer supports mixing old and new batteries



Single cluster supports 5-20kWh stacking expansion, and supports up to 3 clusters of 60kWh flexible expansion



App real-time monitoring, support online remote OTA upgrade, easy operation and maintenance



Easy and flexible multi cluster system battery expansion wiring

Single inverter system can be easily expanded to 3 clusters of batteries up to 60kWh.



20kWh



40kWh

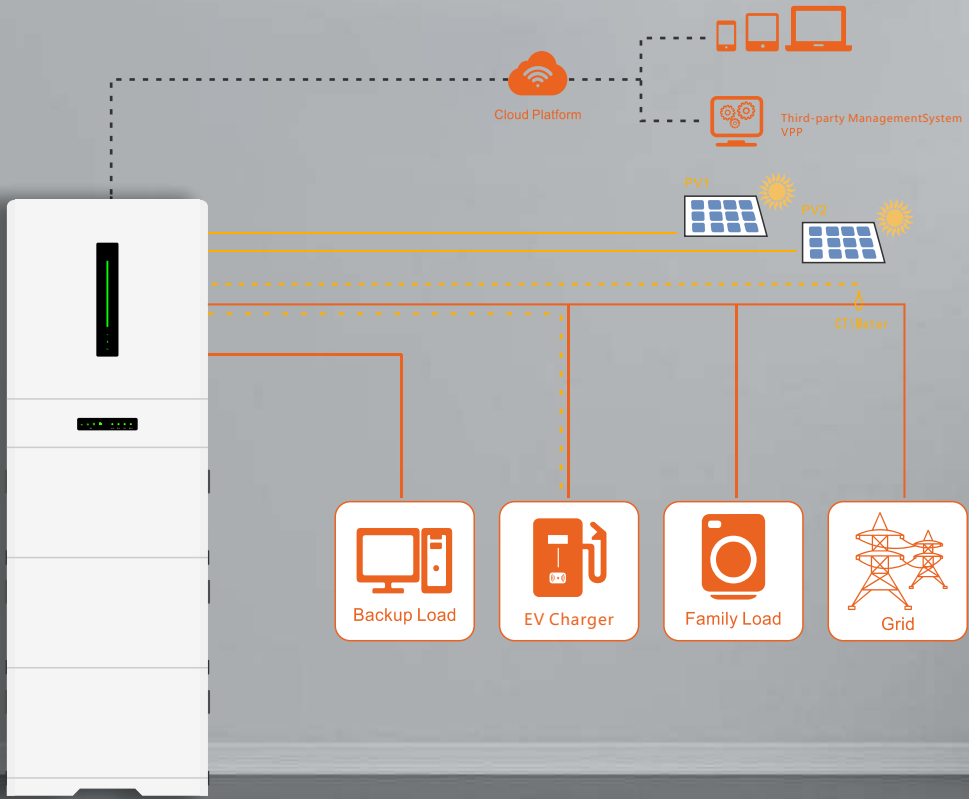


60kWh



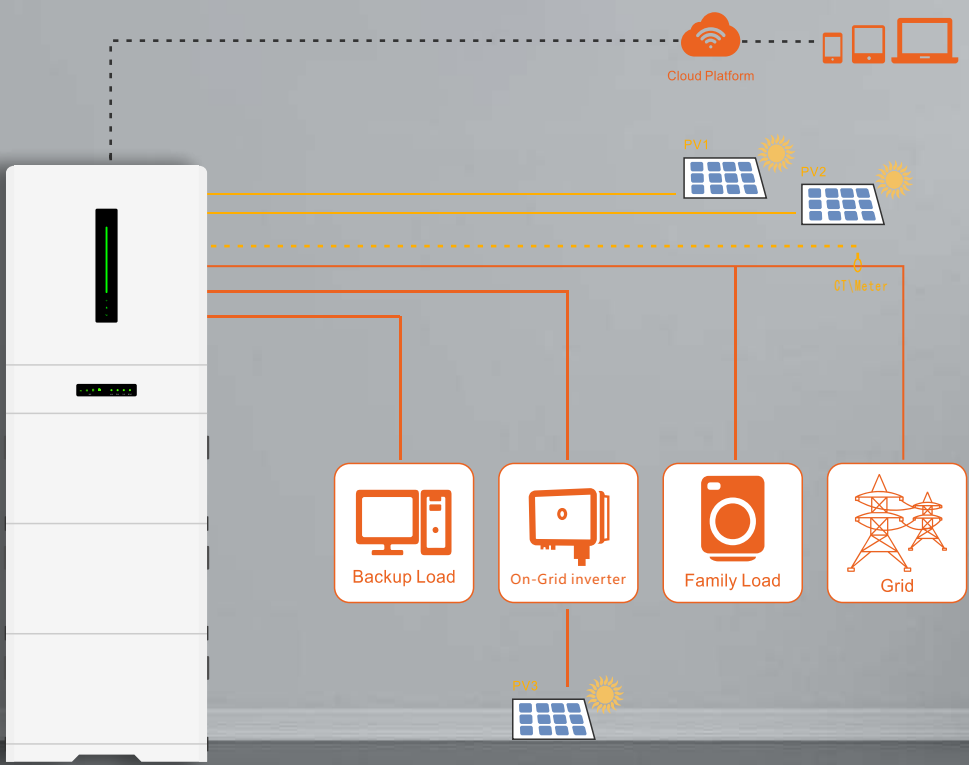
Connection method 1:

Open API interface to respond to third-party energy management and VPP scheduling.



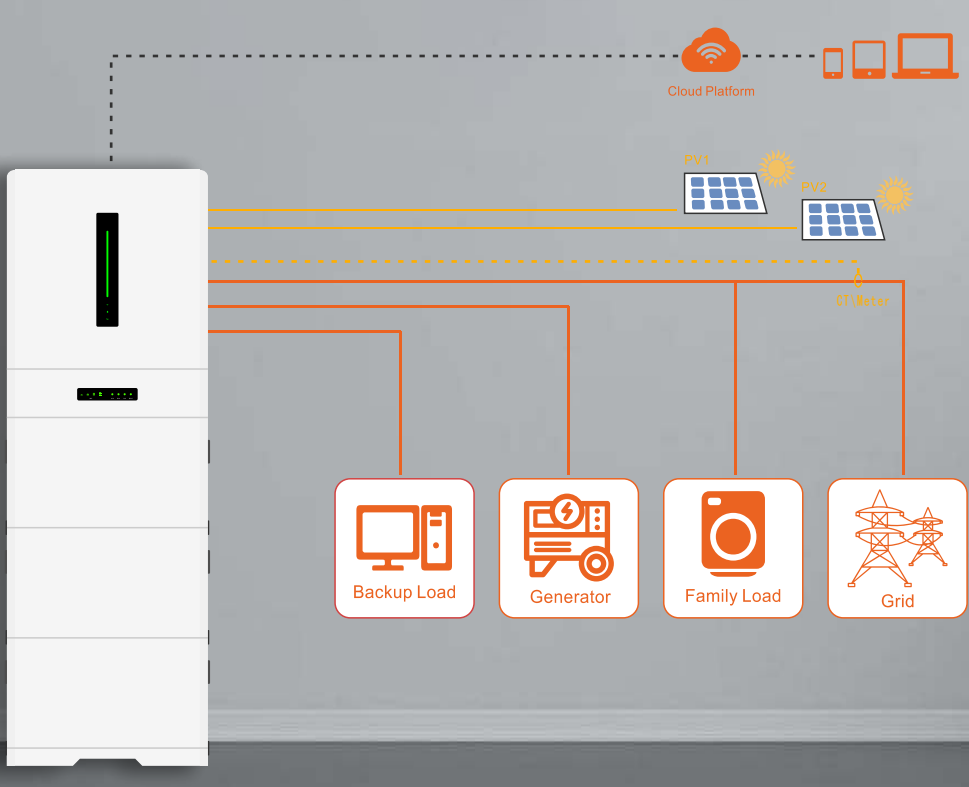
Connection method 3:

AC coupling 1: When a PV inverter has been installed, connect the output cable of the PV inverter to the generator input port of the inverter without needing additional CT.



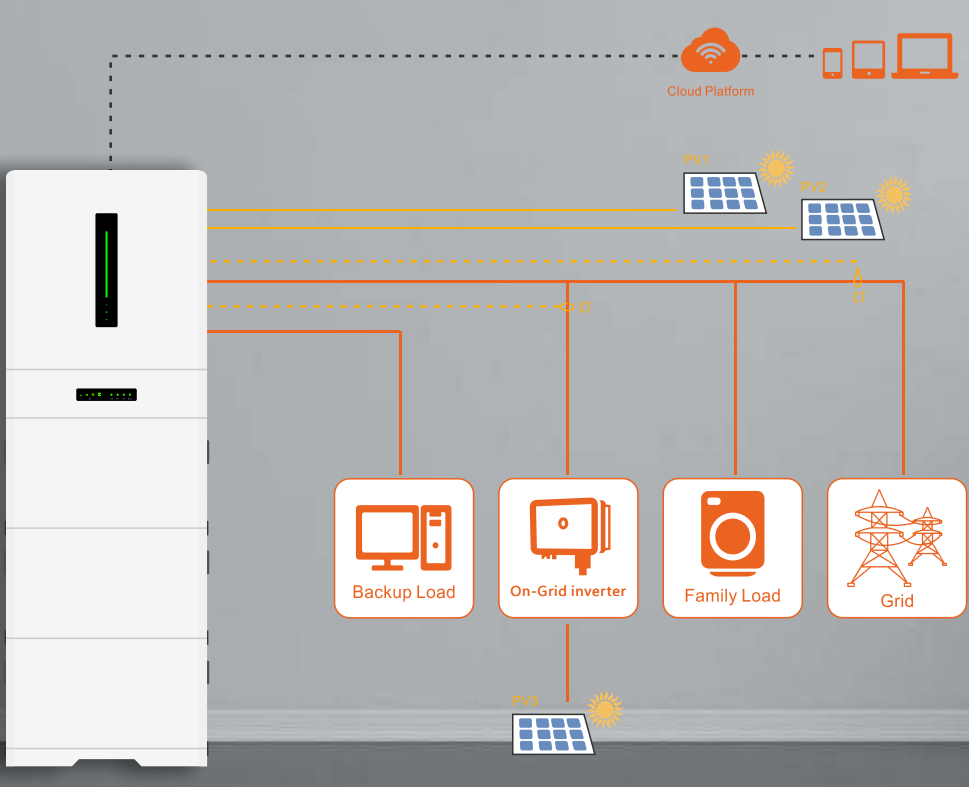
Connection method 2:

Generator connection: When it is required to install a generator, connect the generator output to the generator input port on the the inverter.



Connection method 4:

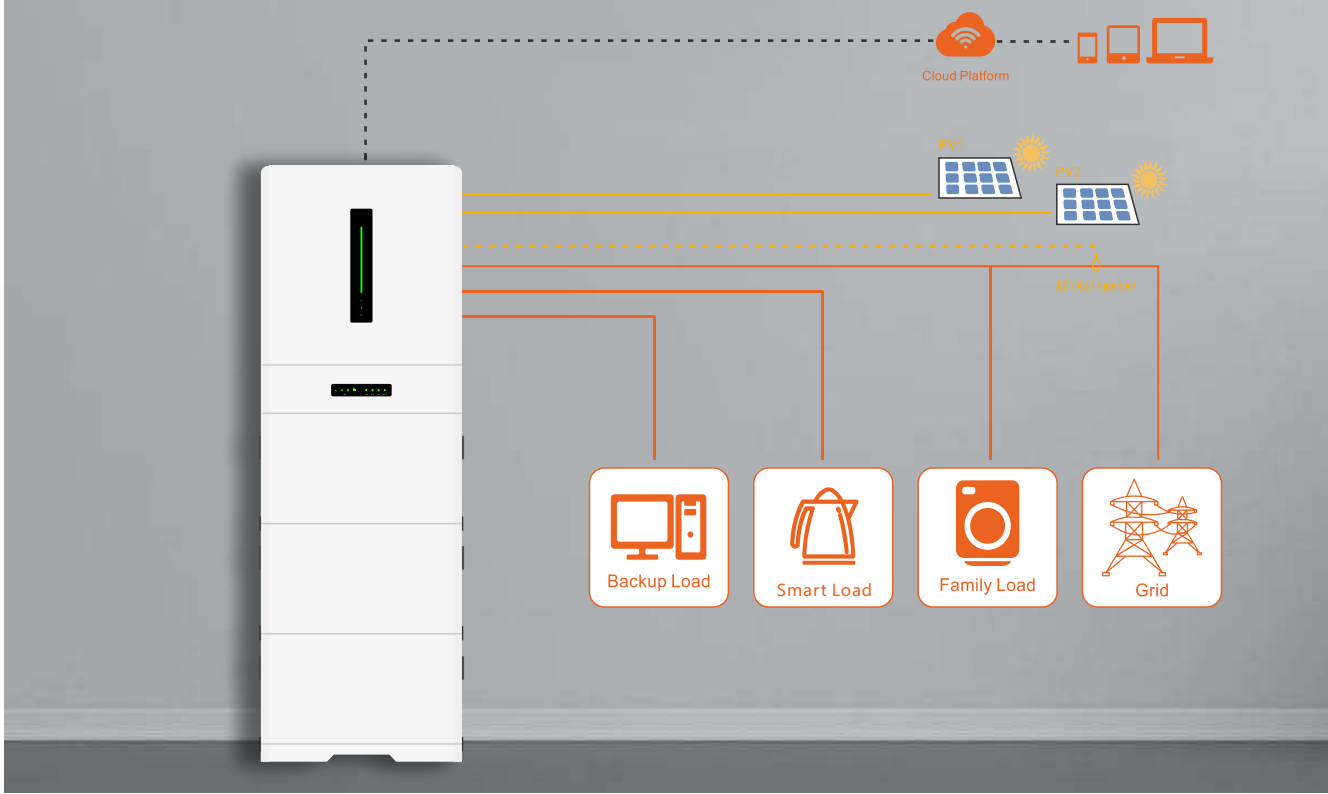
AC coupling 2: When a PV inverter has been installed, connect CT to the CT pin in the COM port on the local panel to collect the output current of the grid-tied inverter.





Connection method 5:

Intelligent load mode: Set the generator input connection point as the load connection point.

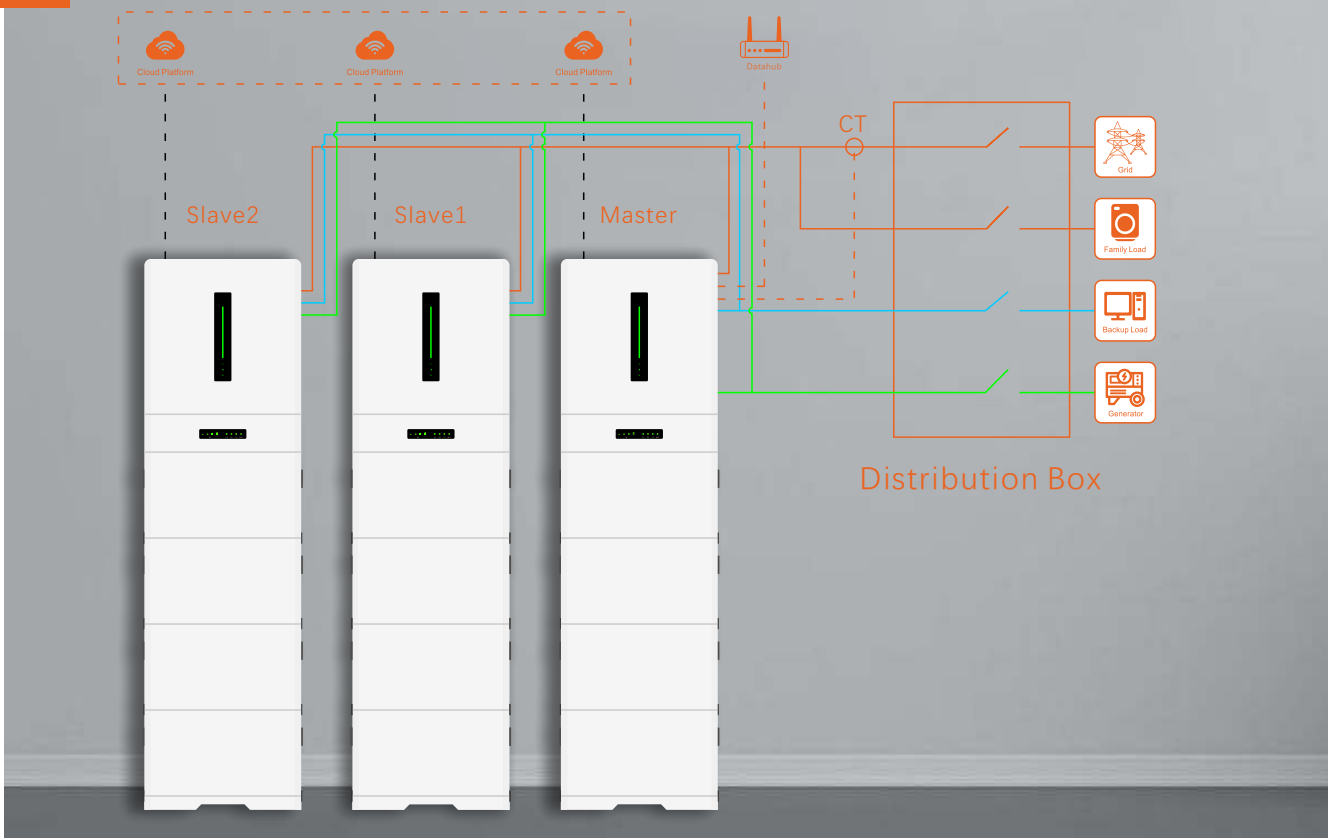


System chart for the recommended system capacity configuration scheme

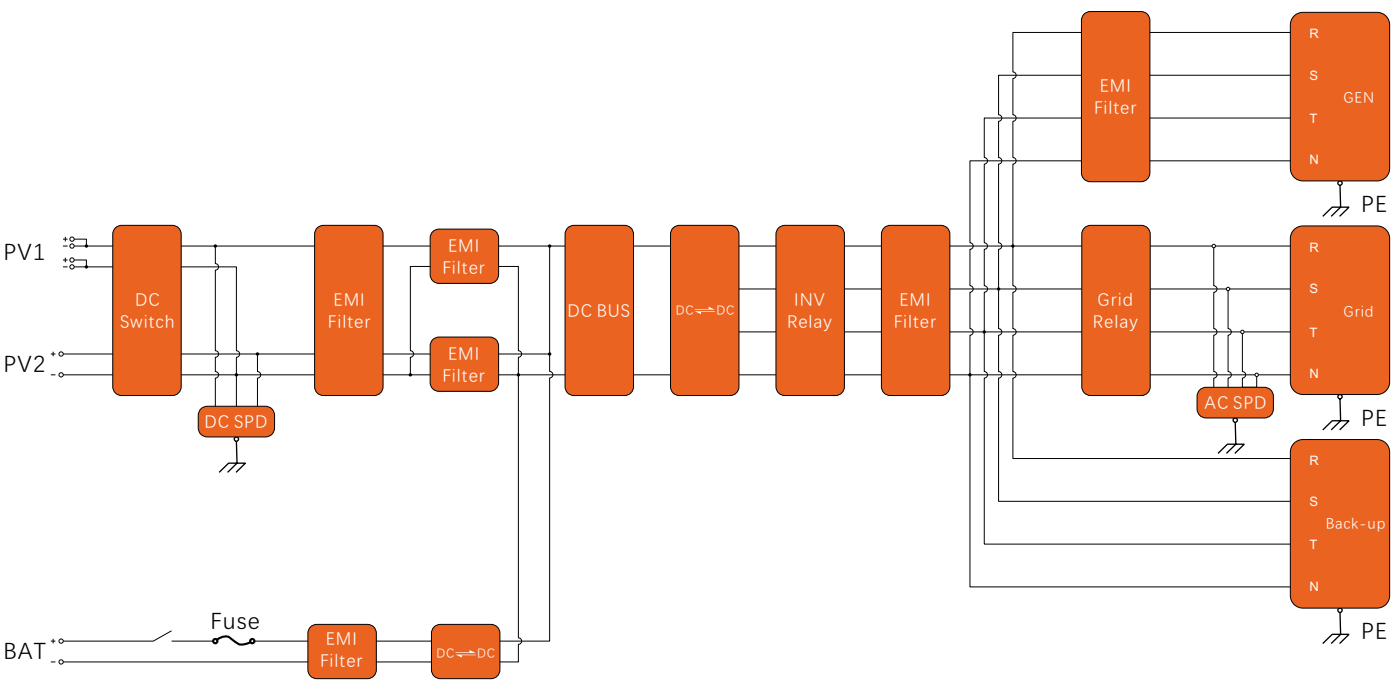


Connection method 6:

Multiple single system parallel solutions, such as the following diagram: 60kW/60kWh system.



Circuit Diagram



System Specification

EAHI10K/15K/20KTH Series				
System component				
Number of battery modules	1	2	3	4
Battery capacity	5.12kWh	10.24kWh	15.36kWh	20.48kWh
Battery system model	EHBS-P5-TH			
Number of inverter	3			
Inverter mode	EAHI10K/15K/20KTH-S(optional)			
Rated power	10K/15K/20kW(optional)			
Dimensions(WxHxD)(mm)	650x1250x270	650x1600x270	650x1950x270	650x2300x270
Weight(kg)	120	175	230	285
Noise	≤25dB@EAHI10K, ≤45dB@EAHI15K, ≤50dB@EAHI20K			
Cooling type	Smart cooling			
Maximum altitude	3000m			
Operating temperature	-20℃~+58℃			
Operating humidity	0~100%RH(Non-condensing)			
Display	LED and app			
Installation method	Floor-mounted			

Battery Specification

MODEL	EHBS-P5-TH
System component	
Battery type	LiFePO4
Module capacity	5.12kWh
Rated voltage	750Vdc
Voltage range	600~1000Vdc
Max. charge/discharge current	3.4A/5.5A
Communication interfaces	CAN/RS485
Dimensions(WxHxD)(mm)	650x370x270
Net weight	59
Topology	High frequency isolation
IP rating	IP66
Operating temperature	-25℃~+55℃
Cooling mode/Heating mode	Natural cooling/PTC heating
Altitude	3000m
Noise level at 1 m	< 40dB
Installation method	Floor-mounted
Standards	
Safety regulation	IEC/EN 62619 2022, ISO 13849, IEC/EN 62040-1, IEC/EN 62477, IEC62109-1/2
EMC	IEC 61000-6-1, EN/IEC 61000-6-3
Transportation	UN 38.3

Hybrid Inverter Specification

MODEL	EAHI10KTH-S	EAHI15KTH-S	EAHI20KTH-S
PV input parameter			
Max. input power	20kW	30kW	30kW
Max. input voltage		1000Vdc	
Rated input voltage		650Vdc	
Start-up voltage		180Vdc	
Min. operating voltage		160Vdc	
MPPT voltage range		160~950Vdc	
Full power MPPT voltage range		625~800V	
Max. input current per MPPT	16A/16A	16A/32A	
Max. short circuit current per MPPT	24A/24A	24A/48A	
Number of MPPTs		2	
Number of input strings per MPPT	1/1	1/2	
Battery input parameter			
Battery type	Lithium battery		
Voltage range	650~980Vdc		
Max. charge/discharge current	15.4A/15.4A	23.1A/23.1A	30.8A/30.8A
AC input and output (grid)			
Max. apparent power of grid	15kVA	32.6A	30kVA
Max. input current	21.7A	320~480Vac	40A
Input voltage range	50±5Hz/60±5Hz		
Input frequency range	15kW		
Rated output power	10kW	16.5kVA	20kW
Max. apparent output power	11kVA	3/N/PE, 380Vac/400Vac	22kVA
Rated output voltage			
Rated output frequency	50 Hz/60Hz		
Rated output current	15.2A/14.5A	22.8A/21.7A	30.4A/29.0A
Max. output current	16.7A/15.8A	25.1A/23.8A	33.5A/31.8A
Power factor	>0.99(0.8 leading~0.8 lagging)		
THDI	≤3%(@ rated power)		

Generator input			
Max. input power	10kW	15kW	20kW
Max. input current	15.2A	22.8A	30.4A
AC output parameter (back-up load)			
Rated output power	10kW	15kW	20kW
Max. apparent power	10kVA	15kVA	20kVA
Rated output voltage	3/N/PE, 380Vac/400Vac		
Rated output frequency	50Hz/60Hz		
Rated output current	15.2A/14.5A	22.8A/21.7A	30.4A/29.0A
Max. output current	15.2A	22.8A	30.4A
THDV	≤3%(linear load)		
Switching time	≤10ms		
Efficiency			
Max. efficiency	98.2%		
MPPT efficiency	99.9%		
Others			
Protections	Over/under voltage, over/under-frequency, over load, output short-circuit, over temperature, residual current monitoring unit, output over-current,insulation resistance, anti-islanding, surge protection		
Surge protection	DC Type II/AC Type III		
Dimensions(WxHxD)(mm)	650x640x270mm		
Net weight(kg)	45		
Parallel operation	Supports 6 units in parallel connection		
Topology	Non-isolated		
IP rating	IP66		
Operating temperature	-25°C ~ +60°C		
Cooling mode	Natural cooling	Smart cooling	
Altitude	3000m		
Noise level at 1m	≤25dB	≤45dB	≤50dB
Standards			
Grid connection	NC RFG+PTPiREE, VDE 0126, EN50549-1/10, DIN VDE V 0124-100:2020, VDE-AR-N 4105:2018, PPDS, CEI 0-21		
EMC	IEC/EN 62109-1/-2, IEC62040-1, IEC62477, IEC62619:2022, EN 61000-6-1/-2/-3/-4		

Battery Distribution Box Specification

MODEL	PDU-SH-Y/PDU-SH-F
Parameter	
Maximum current	60A
Voltage range	300~1000Vdc
Display method	LED
Dimensions(WxHxD)(mm)	650x150x270
Net weight(kg)	12
IP rating	IP66
Others	
Fixed base size(WxHxD)(mm)	650x80x270

Enfficiency Curve And Derating Cure

