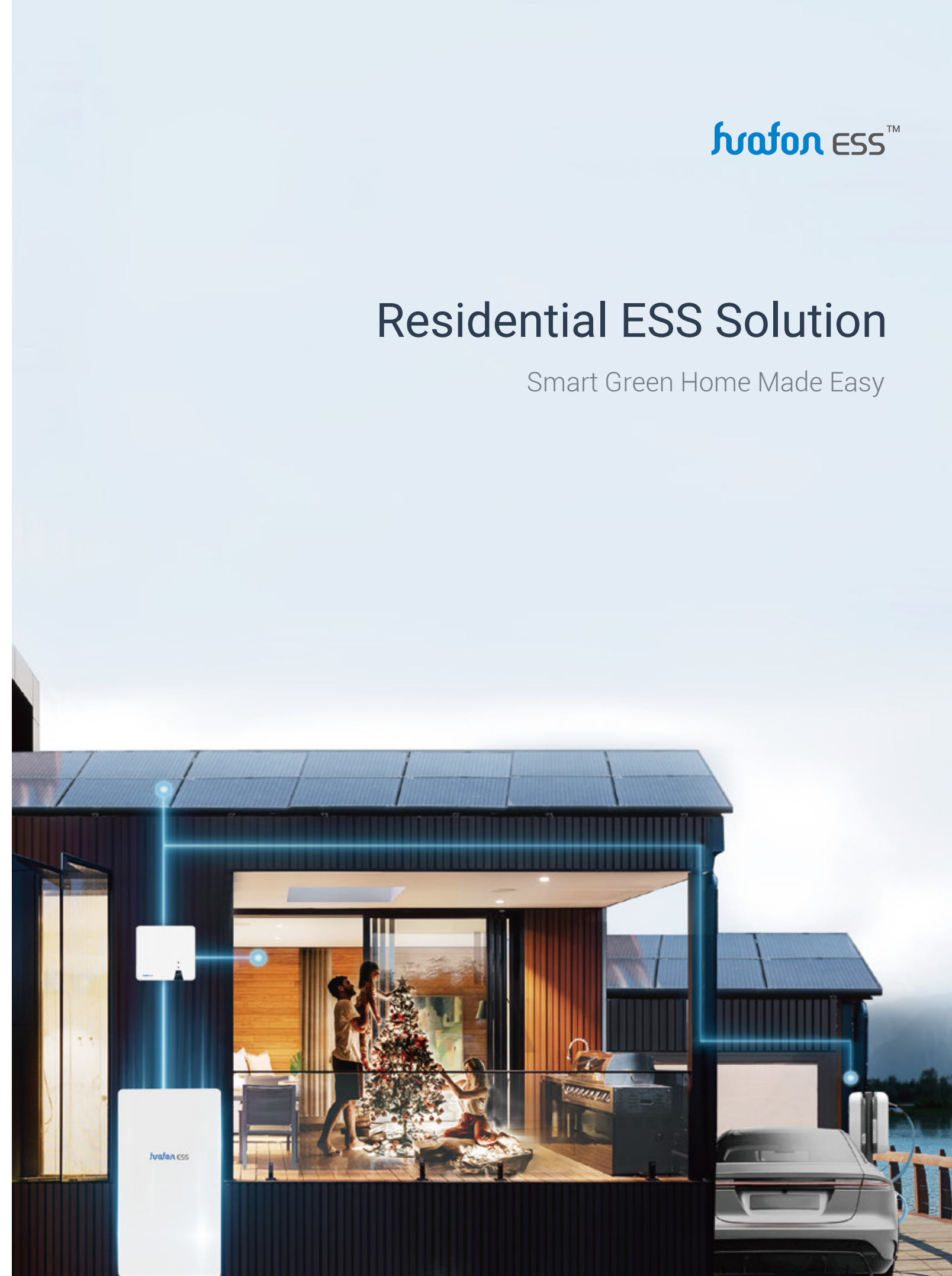




# Residential ESS Solution

Smart Green Home Made Easy



## BUILD AN INTELLIGENT PLATFORM FOR INTEGRATED-ENERGY OPERATION SERVICES

Zhejiang Huaфон ESS Technology Co., Ltd. (hereinafter referred to as “Huaфон ESS”) is primarily supported by Huaфон Group, a notable entity within China's top 500 companies. We operate as an international new energy technology company, focusing on research and development, manufacturing, sales, and service provision across various sectors.

Huaфон ESS is guided by a mission to make energy safer, more efficient, and cleaner. We are dedicated to building an integrated-energy intelligent operation service platform. Following a philosophy of "integrated hardware and software," we are deeply committed to innovative energy storage technologies and system solutions. Our product portfolio spans various areas, including commercial and industrial energy storage, residential energy storage, Energy Management System (EMS), and outdoor power solutions. Furthermore, we achieve comprehensive management of new energy's entire lifecycle through our in-house developed intelligent EMS - Moose Platform.

With certifications from multiple countries and regions, including China, the European Union, and Japan, we deliver dependable and secure energy storage system solutions to a wide range of domestic and international projects. Our commitment lies in contributing to a sustainable future through advancements in low-carbon and digital technologies.

### Mission

To make energy safer, more efficient, and cleaner.

### Vision

To build an intelligent integrated-energy operation service platform.

### Value

Passion, Focus, Positivity, Responsibility





## | Smart Green Home Made Easy



### Greener Energy

To create a super low-carbon home with optimized energy structure



### Stable Powering

Supports multiple working modes to enjoy reliable power affordably



### Intelligent App

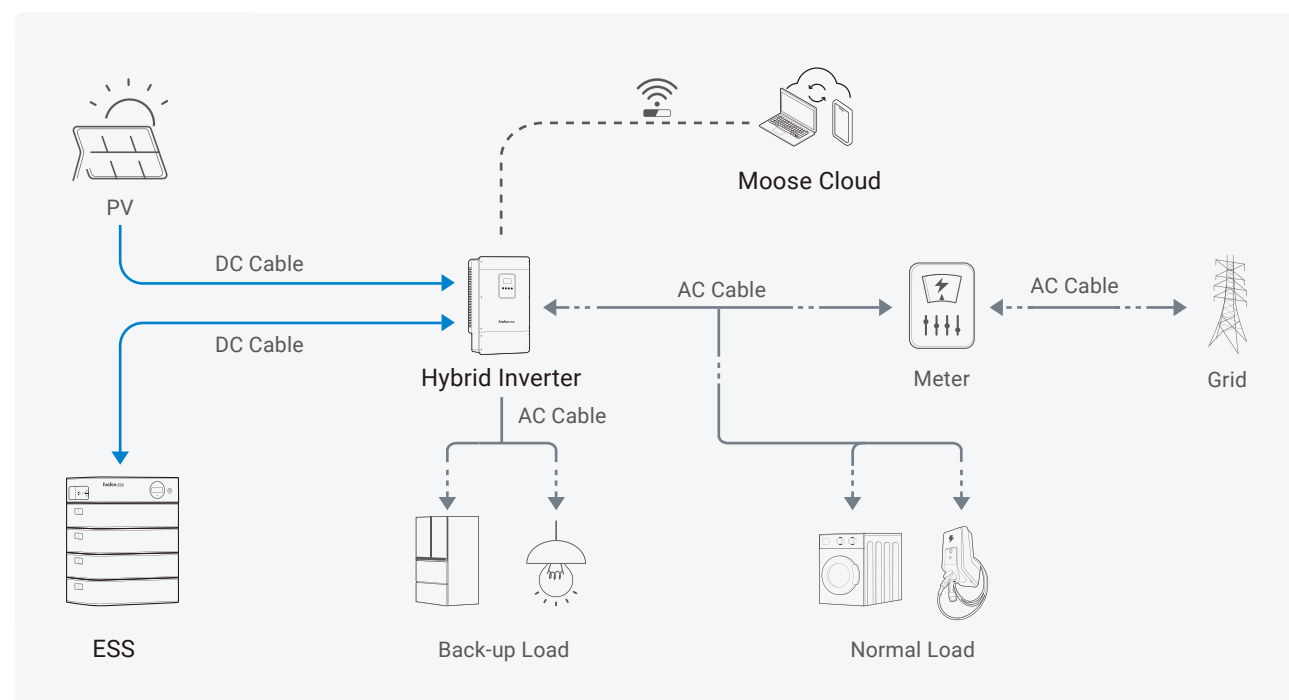
Battery health info at a glance, AI is just at your fingertips



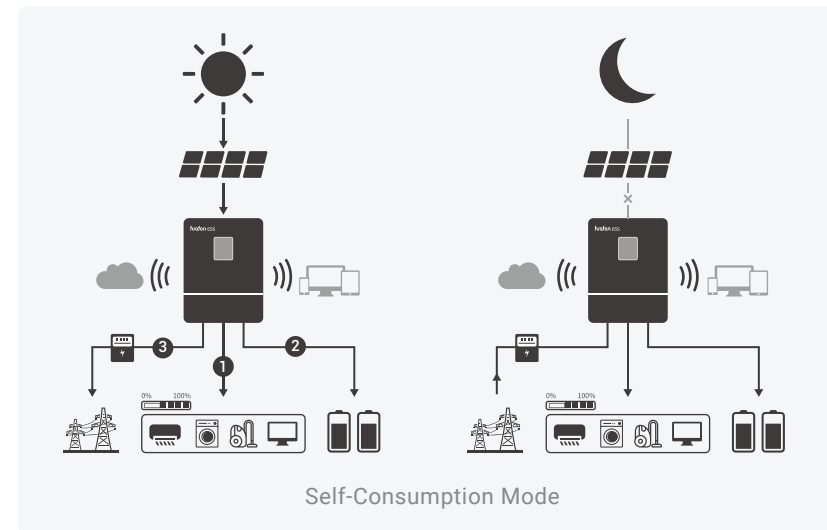
### High Security

LFP battery & self-developed BMS to ensure higher security

## | A Quick View of Solution



## | Flexible Working Modes to Meet Various Situations



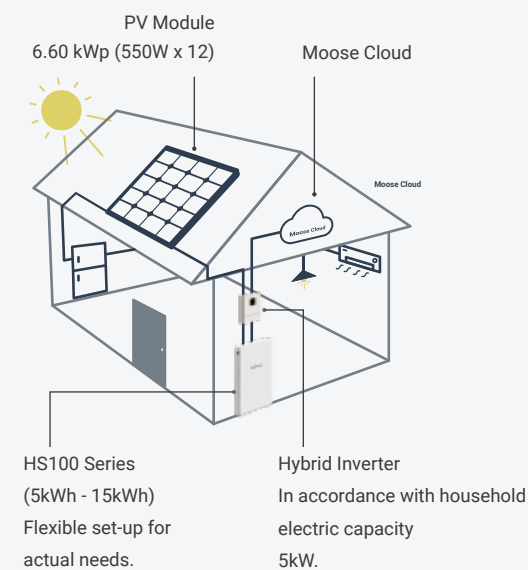
- **Self-Consumption Mode**  
Applicable to areas with high electricity prices.
- **Backup Mode**  
Applicable to areas where power blackout frequently.
- **Off-Grid Mode**  
Applicable to areas without grid power.
- **Custom Mode**  
Applicable to areas where peak-to-valley spread arbitrage.

## | Typical Applications for Reference

### Common household use with 230V single-phase output

**35m<sup>2</sup>**  
Required roof installation area

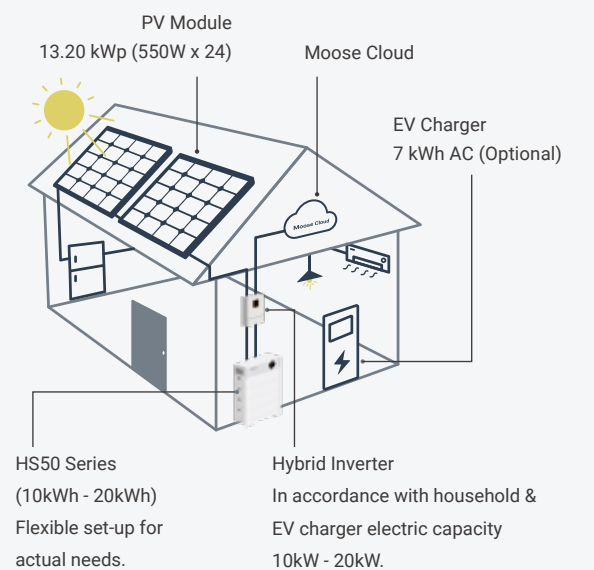
**360kg**  
Required roof installation weight



### Big household use with 400V three-phase output

**70m<sup>2</sup>**  
Required roof installation area

**720kg**  
Required roof installation weight



\* The specific duration depends on total capacity of the connected household appliances.

# Residential ESS

HS50B Series



### Extreme Power

Higher output power to meet the needs of all household appliances.



### Self-With Display

Observe product dynamics in real time.



### Intelligent Operation & Maintenance

Battery health info at a glance, AI is just at your fingertips.

## Specification

Model	HS50B-10kWh	HS50B-12kWh	HS50B-15kWh	HS50B-17kWh	HS50B-20kWh
Basic Specification					
Battery Type	LiFePO4				
Nominal Voltage	204.8V	256V	307.2V	358.4V	409.6V
Operating Voltage Range	179.2V~230.4V	224V~288V	268.8V~345.6V	313.6V~403.2V	358.4V~460.8V
Nominal energy	10.24kWh	12.8kWh	15.36kWh	17.92kWh	20.48kWh
Max. Charge/Discharge Power	10kW	12kW	15kW	18kW	20kW
Rated Charge/Discharge Current	25A				
Max. Continuous Charge/Discharge Current	50A				
Depth of Discharge(DoD)	90%				
Cycle life	6000 Times <sup>1</sup>				
Communication					
Communication Rod (WIFI)	Optional				
Communication	CAN×2/RS485×1				
General Specification					
Dimension (W*D*H)	580*400*845mm	580*400*990mm	580*400*1135mm	580*400*1280mm	580*400*1425mm
Net Weight	158kg	192kg	223kg	258.5kg	292kg
IP Protection	IP65				
Module Connection Method	PDU×1	PDU×1	PDU×1	PDU×1	PDU×1
	PACK×4	PACK×5	PACK×6	PACK×7	PACK×8
	BASE×1	BASE×1	BASE×1	BASE×1	BASE×1
Operating Temperature	Charging: 0~50°C/32°F~122°F; Discharging: -10~50°C/14°F~122°F				
Recommended Storage Temperature	-10°C~40°C/14°F~104°F				
Cooling	Natural Heat Dissipatior				
Relative Humidity	5%RH~95%RH				
Max. Operating Altitude	3000m				
Compatible Inverters	Huafon, Deye, Growatt...				
Standard & Certification					
Transport Testing Requirement	UN38.3,MSDS				
Safety	IEC 62619, IEC 60730-1 Annex H, EN 62477-1, IEC 63056				
EMC	EN 61000-6-1/-3				

\*1@25°C/77°F, 0.5C charging and discharging, 90%DoD.





# Residential ESS

HS100 Series



### Wide Applications

For load shifting, self-consumption, backup power, etc.



### Stable Powering

Supports multiple working conditions to enjoy reliable power affordably.



### Intelligent Operation & Maintenance

Battery health info at a glance, AI is just at your fingertips.

## Specification

Model	BM512	HS1005	HS10010	HS10015
Basic Specification				
Battery Type	LFP			
Nominal Voltage	51.2V			
Operating Voltage Range	44.8V~57.6V			
Nominal Energy	5.12kWh	5.12kWh	10.24kWh	15.36kWh
Rated Charging/Discharging Current	50A	50A	100A	100A
Max. Charging/Discharging Current	100A	100A	120A	120A
Max. Charging/Discharging Power	3kW	3kW	5kW	5kW
Depth of Discharge (DoD)	90%			
Cycle Life	6000 Times			
General Specification				
Dimension (W*D*H)	468*429*190mm	600*250.5*615mm	600*250.5*1095mm	600*250.5*1580mm
Net Weight	49kg	69kg	132kg	195kg
IP Protection	IP20	IP65	IP65	IP65
Installation	/	Floor Stand (Standard) Wall Mounted (Optional)	Floor Stand (Standard) Wall Mounted (Optional)	Floor Stand (Standard)
Operating Temperature	Charging: 0°C~50°C / 32°F~122°F; Discharging: -10°C~50°C / 14°F~122°F <sup>1</sup>			
Storage Temperature	-20°C~55°C / -4°F~131°F			
Cooling	Natural Heat Dissipation			
Relative Humidity	0%~95% RH			
Max. Operating Altitude	3000m			
Communication	CAN, RS485			
Compatible Inverters	Huafon, Growatt, Deye, Solis... <sup>2</sup>			
AI Platform	Moose Cloud (Web), Huafon ESS App (Mobile)			
Standard & Certification				
Transport Testing Requirement	UN38.3			
Safety	IEC62619, IEC60730-1 Annex1-1			
EMC	EN61000-6-1/-3			


<sup>1</sup> Battery performance decreases when the temperature is below 0°C/32°F or above 40°C/104°F.

<sup>2</sup> Product adapts to multiple brands of inverters, feel free to contact sales if any.




# Residential ESS

HS100B Series




### Innovative In-House BMS

Safety elevated through proprietary BMS.



### Self-With Display

Observe product dynamics in real time.



### Intelligent Operation & Maintenance

Battery health info at a glance, AI is just at your fingertips.

## Specification

Model	BM512B	HS1005B	HS10010B	HS10015B
Basic Specification				
Battery Type	LFP			
Nominal Voltage	51.2V			
Operating Voltage Range	44.8V~57.6V			
Nominal Energy	5.12kWh	5.12kWh	10.24kWh	15.36kWh
Rated Charging/Discharging Current	50A	50A	100A	150A
Max. Continuous Charge/Discharge Current	100A	100A	180A	180A
Max. Charging/Discharging Power	5kW	5kW	8kW	8kW
Depth of Discharge (DoD)	90%			
Cycle Life	6000 Times <sup>1</sup>			
Communication				
Communication Rod (WIFI)	Optional			
Communication	CAN, RS485			
General Specification				
Dimension (W*D*H)	433*460*190mm	620*235*600mm	620*235*1090mm	620*235*1580mm
Net Weight	47kg	80.3kg	142.2kg	203.6kg
IP Protection	IP20	IP65	IP65	IP65
Installation	/	Floor Stand (Standard) Wall Mounted (Optional)	Floor Stand (Standard) Wall Mounted (Optional)	Floor Stand (Standard)
Operating Temperature	Charging: 0°C~50°C / 32°F~122°F; Discharging: -10°C~50°C / 14°F~122°F			
Storage Temperature	-20°C~55°C / -4°F~131°F			
Cooling	Natural Heat Dissipation			
Relative Humidity	0%~95% RH			
Max. Operating Altitude	3000m			
Compatible Inverters	Huafon, Deye, Growatt...			
AI Platform	Moose Cloud (Web), Huafon ESS App (Mobile)			
Standard & Certification				
Transport Testing Requirement	UN38.3			
Safety	IEC62619, IEC60730-1 Annex1-1			
EMC	EN61000-6-1/-3			

<sup>1</sup>\*1 @25°C/77°F, 0.5C charging and discharging, 90%DoD.



# Single Phase Hybrid Inverter

HF01LP1-5K-EU



Colorful touch LCD, IP65 protection degree



DC couple and AC couple to retrofit existing solar system



Max. 16 pcs parallel for on-grid and off-grid operation; Support multiple batteries parallel



Max. charging/discharging current of 120A



6 time periods for battery charging/discharging



Support storing energy from diesel generator

## Technical Data

Model	HF01LP1-5K-EU
<strong>Battery Input Data</strong>	
Battery Type	Lead-acid or Lithium-ion
Battery Voltage Range (V)	40-60
Max. Charging Current (A)	120
Max. Discharging Current (A)	120
External Temperature Sensor	Yes
Charging Curve	3 Stages / Equalization
Charging Strategy for Li-Ion Battery	Self-adaption to BMS
<strong>PV String Input Data</strong>	
Max. DC Input Power (W)	6500
Rated PV Input Voltage (V)	370 (125-500)
Start-up Voltage (V)	125
MPPT Voltage Range (V)	150-425
Full Load DC Voltage Range (V)	300-425
PV Input Current (A)	13+13
Max. PV I <sub>sc</sub> (A)	17+17
No.of MPP Trackers	2
No.of Strings per MPP Tracker	1+1
<strong>AC Output Data</strong>	
Rated AC Output Active Power (W)	5000
Max AC Output Active Power (W)	5500
AC Output Rated Current (A)	22.7/21.7
Max AC Output Current (A)	25/23.9
Max. Continuous AC Passthrough (A)	35
Peak Power (off grid)	2 time of rated power, 10 S
Power Factor Adjustment Range	0.8 leading to 0.8 lagging
Power Factor	1
Output Frequency and Voltage	50/60Hz; L/N/PE 220/230Vac
Grid Type	Single Phase
Total Harmonic Distortion (THD)	<3% (of nominal power)
DC Current Injection	<0.5% I <sub>n</sub>
<strong>Efficiency</strong>	
Max. Efficiency	97.60%
Euro Efficiency	96.50%
MPPT Efficiency	99.90%
<strong>Protection</strong>	
Integrated	PV Input Lightning Protection, Anti-islanding Protection, PV String Input Reverse Polarity Protection, Insulation Resistor Detection, Residual Current Monitoring Unit, Output Over Current Protection, Output Shorted Protection, Surge protection
Output Over Voltage Protection	DC Type II/AC Type III
<strong>Certifications and Standards</strong>	
Grid Regulation	VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150
Safety EMC / Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2
<strong>General Data</strong>	
Operating Temperature Range	-40-60°C/-40-140°F, >45°C/113°F derating
Cooling	Smart Cooling
Noise	≤30 dB
Communication with BMS	RS485; CAN
Weight (kg)	20.5
Size (mm)	330W x 580H x232D
Protection Degree	IP65
Installation Style	Wall-mounted
Warranty	5 Years

# Three Phase Hybrid Inverter

HF01LP3-5/8/10/12K-EU



- 100

100% unbalanced output, each phase; Max. output up to 50% rated power
- DC couple and AC couple to retrofit existing solar system
- 10

Max. 10 pcs parallel for on-grid and off-grid operation; Support multiple batteries parallel
- 240

Max. charging/discharging current of 240A
- 48

48V low voltage battery, transformer isolation design
- 6

6 time periods for battery charging/discharging
- Support storing energy from diesel generator

## Technical Data



Model	HF01LP3-5K-EU	HF01LP3-8K-EU	HF01LP3-10K-EU	HF01LP3-12K-EU
Battery Input Data				
Battery Type	Lead-acid or Lithium-ion			
Battery Voltage Range (V)	40-60			
Max. Charging Current (A)	120	190	210	240
Max. Discharging Current (A)	120	190	210	240
External Temperature Sensor	Yes			
Charging Curve	3 Stages / Equalization			
Charging Strategy for Li-Ion Battery	Self-adaption to BMS			
PV String Input Data				
Max. DC Input Power (W)	6500	10400	13000	15600
Rated PV Input Voltage (V)	550 (160-800)			
Start-up Voltage (V)	160			
MPPT Voltage Range (V)	200-650			
Full Load DC Voltage Range (V)	350-650			
PV Input Current (A)	13+13	13+13	26+13	26+13
Max. PV I <sub>sc</sub> (A)	17+17	17+17	34+17	34+17
No.of MPP Trackers	2			
No.of Strings per MPP Tracker	1+1	1+1	2+1	2+1
AC Output Data				
Rated AC Output Active Power (W)	5000	8000	10000	12000
Max AC Output Active Power (W)	5500	8800	11000	13200
AC Output Rated Current (A)	7.6/7.2	12.1/11.6	15.2/14.5	18.2/17.4
Max AC Output Current (A)	8.4/8	13.4/12.8	16.7/15.9	20/19.1
Max. Three-phase Unbalanced Output Current (A)	11.4/10.9	18.2/17.4	22.7/21.7	27.3/26.1
Max Output short circuit current (A)	75			
Max. Continuous AC Passthrough (A)	45			
Peak Power (off grid)	2 time of rated power, 10 S			
Power Factor	0.8 leading to 0.8 lagging			
Output Frequency and Voltage	50/60Hz; 3L/N/PE 220/380, 230/400Vac			
Grid Type	Three Phase			
Total Harmonic Distortion (THD)	<3% (of nominal power)			
DC Current Injection	<0.5% I <sub>n</sub>			
Efficiency				
Max. Efficiency	97.60%			
Euro Efficiency	97.00%			
MPPT Efficiency	99.90%			
Protection				
Integrated	PV Input Lightning Protection, Anti-islanding Protection, PV String Input Reverse Polarity Protection, Insulation Resistor Detection, Residual Current Monitoring Unit, Output Over Current Protection, Output Shorted Protection, Surge Protection			
Output Over Voltage Protection	DC Type II/AC Type III			
Certifications and Standards				
Grid Regulation	VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150			
Safety EMC / Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2			
General Data				
Operating Temperature Range	-40-60°C/-40-140°F, >45°C/113°F derating			
Cooling	Smart Cooling			
Noise	≤45 dB			
Communication with BMS	RS485; CAN			
Weight (kg)	33.6			
Size (mm)	422W x 702H x281D			
Protection Degree	IP65			
Installation Style	Wall-mounted			
Warranty	5 Years			



# Three Phase Hybrid Inverter

HF01HP3-5/6/8/10/12/15/20/25K-EU

A modern two-story house with a light blue facade and a dark roof. The roof is covered with solar panels. The house has large glass windows and doors, some of which are illuminated from within, showing a dining area and a living area. In the foreground, there is a green lawn and a white outdoor furniture set. The sky is a clear blue.

- 100** 100% unbalanced output, each phase; Max. output up to 50% rated power
-  DC couple and AC couple to retrofit existing solar system
- 10** Max. 10 pcs parallel for on-grid and off-grid operation; Support multiple batteries parallel
- 50** Max. charging/discharging current of 50A
- H** High voltage battery, higher efficiency
- 6** 6 time periods for battery charging/discharging
-  Support storing energy from diesel generator

## Technical Data

Model	HF01HP3-5K-EU	HF01HP3-6K-EU	HF01HP3-8K-EU	HF01HP3-10K-EU	HF01HP3-12K-EU	HF01HP3-15K-EU	HF01HP3-20K-EU	HF01HP3-25K-EU
<b>Battery Input Data</b>								
Battery Type	Lithium-ion							
Battery Voltage Range (V)	160~700							
Max. Charging Current (A)	37							50
Max. Discharging Current (A)	37							50
Number of battery input	1							
Charging Strategy for Li-Ion Battery	Self-adaption to BMS							
<b>PV String Input Data</b>								
Max. DC Input Power (W)	6500	7800	10400	13000	15600	19500	26000	32500
Max. DC Input Voltage (V)	1000							
Start-up Voltage (V)	180							
MPPT Range (V)	150-850							
Full Load DC Voltage Range (V)	195-850	195-850	260-850	325-850	340-850	420-850	500-850	625-850
Rated DC Input Voltage (V)	600							
PV Input Current (A)	20+20				26+20		26+26	
Max. PV I <sub>sc</sub> (A)	30+30				39+30		39+39	
No.of MPP Trackers	2							
No.of Strings per MPP Tracker	1+1				2+1		2+2	
<b>AC Output Data</b>								
Rated AC Output and UPS Power (W)	5000	6000	8000	10000	12000	15000	20000	25000
Max. AC Output Power (W)	5500	6600	8800	11000	13200	16500	22000	27500
AC Output Rated Current (A)	7.6/7.3	9.1/8.7	12.2/11.6	15.2/14.5	18.2/17.4	22.8/21.8	30.4/29	37.9/36.3
Max. AC Output Rated Current (A)	8.4/8	10/9.6	13.4/12.8	16.7/16	20/19.2	25/24	33.4/31.9	41.7/39.9
Max. Three-phase Unbalanced Output Current (A)	13	13	18	22	25	30	35	40
Max. Continuous AC Passthrough (A)	40				80			
Peak Power (off grid)	1.5 time of rated power, 10 S							
Generator input/Smart load /AC couple current (A)	7.6/40/7.6	9.1/40/9.1	12.2/40/12.2	15.2/40/15.2	18.2/80/18.2	22.8/80/22.8	30.4/80/30.4	37.9/80/37.9
Power Factor	0.8 leading to 0.8 lagging							
Output Frequency and Voltage	50/60Hz; 3L/N/PE 220/380, 230/400Vac							
Grid Type	Three Phase							
Total Harmonic Distortion (THD)	<3% (of nominal power)							
DC Current Injection	<0.5% In							
<b>Efficiency</b>								
Max. Efficiency	97.60%							
Euro Efficiency	97.00%							
MPPT Efficiency	99.90%							
<b>Protection</b>								
Integrated	PV Input Lightning Protection, Anti-islanding Protection, PV String Input Reverse Polarity Protection, Insulation Resistor Detection, Residual Current Monitoring Unit, Output Over Current Protection, Output Shorted Protection, Surge protection							
Output Over Voltage Protection	DC Type II/AC Type III							
<b>Certifications and Standards</b>								
Grid Regulation	VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150							
Safety EMC / Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2							
<b>General Data</b>								
Operating Temperature Range	-40-60°C/-40-140°F, >45°C/113°F derating							
Cooling	Smart Cooling							
Noise	≤55 dB							
Communication with BMS	RS485; CAN							
Weight (kg)	30.5							
Size (mm)	408W×638H×237D							
Protection Degree	IP65							
Installation Style	Wall-mounted							
Warranty	5 years							



# 「Huafon ESS」 APP



## ► Self-consumption

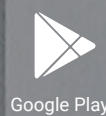
It stores electricity easily and provides power at night, to double the green energy usage in your house, which is also the most effective way to reduce carbon emission and gain energy independence.

## ► Time-of-use

By time-based, the BESS will charge and discharge intelligently, that is, it will charge in off-peak hours, and discharge in peak hours seamlessly. We ensure users the most cost efficient control.

## ► Backup Power

There is much less anxiety when your house experiences an electrical blackout. BESS will be turned on and provide you safe and reliable stored power, giving peace of mind.



**Huafon ESS**

Cloud/App modes offer intelligent and optimized control policy