



H-ES Series (Hybrid Energy Storage System)

Hybrid Energy Storage System with Energy Management System (EMS) is a new kind of power solution. Via an integrated control system with adaptive logic, the EMS can control and optimize the flow of energy so as to realize the maximum rate of PV self-sufficiency. The electricity produced by PV system can supply power to the loads directly and charge the battery as the first priority. The excess solar energy can be fed into the grid. Mean while, the lack of electricity can also be supplemented from the grid.

- Hybrid PV system with high integration
- Backup function in off-grid situation
- Operating as UPS
- Automatic mode switching without delay
- Low noise
- Modular design, convenient to install and dismantle
- Intelligent EMS function
- Battery configured up to 15kWh
- Integrated with reliable BMS
- Support with iOS / Android APPs (to enable remote monitoring)

Technical Data

GW5048H-ES

Solar	
Max. PV power	6000W
Max. PV voltage	580V
MPPT voltage range	125~550V
Max. PV current	11A Per String
No. of PV connectors	2
No. of MPPTs	2(can parallel)
PV connector	SUNCLIX / MC4 /H4(Optional)
Battery	
Battery Type	Lithium Iron Phosphate
Singlemodule capacity	48V 50Ah
Singlemodule energy	2.5KWh
Singlemodule Charging rate	0.5C
Singlemodule Discharging rate	0.5C
DOD	80%
MAX. Module NO.	6 (15KWh)
MAX Discharge power (W)	4600
MAX Charge power (W)	4600
Charging curve	3-stage adaptive with maintenance
Working temperature	0°C ~40°C
Temperature Compensation	Li-Ion integrated
Over current protection	Li-Ion integrated
AC Output (ON-GRID)	
Norminal power(W)	4600
Norminal current(A)	20
AC output range	45~55Hz/55~65Hz; 180~270Vac
THDi	<1.5%
Power factor	0.8 leading~0.8 lagging
Grid connection	Single phase
AC output (Back-up)	
Norminal power(W)	4600
Norminal current(A)	20
Peak power(W)	1.5x Pnom, 10sec
Norminal output	230Vac ±2%, 50Hz (60Hz Optional)±0.2%
THDv	<3%(linear load)
Efficiency	
Max. PV to grid efficiency	97.6%
PV to grid Euro efficiency	>97.0%
MPPT adaptation efficiency	99.9%
Max. PV Charge efficiency	95.5%
Max. Grid Charge efficiency	94.0%
Max. Battery Discharge efficiency	94.0%
Protection	
Residual current monitoring unit	Integrated
Anti-islanding protection	Integrated
DC switch(PV)	Integrated
AC over current protection	Integrated
Insulation monitoring	Integrated
Certifications&Standards	
Grid regulation	VDE4105, VDE 0126-1-1/A1, G83/2, G59/3, AS4777.2/3
Safety	IEC62109-1&-2, AS3100, IEC62040-1
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-3-11, EN61000-3-12
General Data	
Dimensions (WxHxD)	658*1500*602mm
Weight (kg)	150(without battery)
Mounting	NA
Ambient temperature range	-25~60°C (>45°C derating)
Relative humidity	0~95%
Max. operating altitude	2000m
Protection degree	IP21
Topology	Transformerless
Standby losses(W)	<8
Cooling	Fan cooling
Noise emision(dB)	<45
Display	LED light & APP
Communication	USB2.0; WiFi