3.5KW SINGLE-PHASE OFF-GRID INVERTER

SmartInver **3.5KW**

Main features

- 3.2-inch segment code screen;
- It can work without batteries;
- It can be paired with lithium iron phosphate battery packs (51.2VDC) and lead-acid batteries (48VDC);
- It supports Plug-and-Play WIFI Stick, and WiFi remote monitoring is optional;
- Pure sine wave output;
- Power factor 1.0; It can be paired with lithium iron phosphate battery packs (51.2VDC) and lead-acid batteries (48VDC);
- It supports multiple output priorities: mains priority (default), SBU priority;
- It is equipped with an internal photovoltaic MPPT controller, which increase the charging efficiency by more than 20%, and the maximum photovoltaic input is 500Vdc;
- It has overcharge protection and over-discharge protection functions, which can safely ensure a longer battery life;
- It features intelligent exhaust and heat dissipation, intelligent overload protection, short-circuit protection and automatic alarm;
- It has a detachable dust cover and can be used in harsh environments;

Technical parameters

Model	SP-3K5-EP1
Product Whole Part	
Rated Output Power	3500W/3500VA
Rated Output Voltage	230VAC±5%
Rated Output Frequency	50Hz/60Hz±1%
Off-grid/Grid Connected	Off-grid(NOT support grid-connected)
Operating Modes	Two modes: mains power mode(prior by default) and SBU mode.
Parallel Operation Function (Inverter)	Up to 9 units can be connected in parallel, and they can be connected in single phase or three-phase
Parallel Interface	YES(DB15 Interface)
Diesel Power Generation	Supported
Diesel Generator Dry Contacts	Diesel generator dry contacts: 2 paths reserved(1NC，1NO)
Inverter Part	
Inverter Technical Route	High-frequency solution
Unidirectional/Bidirectional(Inverter)	Bidirectional
Rated Output Power	3500W/3500VA Continuous
Peak Power	7000VA，Duration：240ms
Overload Capacity	≥150%load@5s;110%~150%load@10s
Rated Output Voltage	In inverter mode：**230VAC±5%** In the bypass mode of mains power: consistent with the input mains power
Output Frequency	In inverter mode：50Hz/60Hz±1% In the bypass mode of mains power: consistent with the input mains power
AC Output Interface	Through-the-Wall terminal: 1 Set, 3P（L、N、PE）
Maximum Inverter Efficiency	93%
THDv	<3%
Empty Load Power Consumption	<40W
Stand-by Power Consumption	<20W
Inverter Over-Temperature Output Derating	When the inverter NTC temperature exceeds 75 degrees, the AC output voltage begins to drop. For every 1 degree increase in NTC temperature, the AC output voltage decreases by 2%
AC Input Part	
AC Input Rated Voltage	230Vac
AC Input Voltage Range	APL:90Vac～280Vac±7V UPS:170Vac~280Vac±7V
Under-Voltage Protection Point of AC Input	APL：88Vac　　UPS：168Vac
Under-Voltage Recovery Point of AC Input	APL：100Vac　　UPS：180Vac
Overvoltage Protection Point of AC Input	280Vac

Overvoltage Recovery Point of AC Input	270Vac		
Rated frequency of AC Input	50/60Hz（Automatic detection）		
Frequency Range of AC Input	40～65Hz±1Hz		
Under-frequency protection point of AC Input	40Hz		
Under-frequency Recovery point of AC Input	42Hz		
Over-frequency protection point of AC Input	65Hz		
Over-frequency Recovery point of AC Input	63Hz		
AC Input Interface	Through-the-Wall terminal: 1 Set, 3P（L、N、PE）		
AC Charging Derating	When the AC charging current is below 230Vac, it decreases linearly		
Maximum Charging Current of AC	60A		
Maximum Bypass Overload Current	30A		
Fast Charging	Not supported(But the charging current can be set)		
Battery Part			
Battery Voltage Platform	48VDC		
Voltage Points for Battery Pack Charging/Discharging (Configurable)			
	Lithium iron phosphate battery (16 strings)	Lithium iron phosphate battery (15 strings)	Lead-acid battery (24 strings)
Battery Charging Cut-off voltage	58.4VDC	54.8VDC	63VDC
Battery Charging Alarm Voltage	57.6VDC	54VDC	63VDC
Battery Discharge Recovery Voltage	45VDC	42.2VDC	41.1VDC
Battery Discharging Cut-off voltage	42VDC	39.4VDC	40.6VDC
Battery Shutdown Voltage	40VDC	37.5VDC	39.6VDC
Battery pack Voltage Accuracy	±0.3%		
Maximum Current for Hybrid Charging	AC+PV(60A)		
Battery Charging Derating Due to Over-Temperature	When the battery NTC temperature is above 80 degrees, the maximum charging current decreases by 20A. When the battery NTC temperature is below 80 degrees or above 73 degrees, the maximum charging current decreases by 10A.		
Maximum Discharge Current	80A		
PV Input Part			
Maximum Power of PV charging	4000W		
Maximum PV Open-Circuit Voltage	500V		
MPPT Voltage Range	100-450VDC		
PV Voltage Accuracy	±0.1%		
MPPT Channel	1 Channel		
MPPT Currency Range	0~16A		
Maximum MPPT Efficiency	>99%		
PV Input Interface	Through-the-Wall terminal		
The Rated Voltage for PV Charging the	Configurable: Lithium iron phosphate battery (16 strings)		

Battery	mode: 58.4V Configurable: Lithium iron phosphate battery (15 strings) mode: 54.75V Configurable: Lead-acid battery (24 strings) mode: 57.6V
Rated Maximum Charging Current for the Battery	60A
PV Full Power (4kW) Voltage Range	250Vdc~450Vdc
Over-Temperature Derating of PV	If the PV voltage is higher than 250V and the PV NTC temperature is higher than 90 degrees, the maximum output power of PV drops to 2500W. If the PV NTC temperature is lower than 90 degrees or higher than 85 degrees, the maximum output power of PV drops to 3000W. If the PV voltage does not exceed 250V and the PV NTC temperature is higher than 90 degrees, the maximum output current of PV drops to 10A. If the PV NTC temperature is lower than 90 degrees or higher than 85 degrees, the maximum output current of PV drops to 12A.
Protective Function	
For fault/alarm function, please refer to the fault code and alarm code	AC input over-voltage protection, AC input under-voltage protection, AC input over-frequency protection, AC input under-frequency protection, AC input over-current protection, AC output over-voltage protection, AC output under-voltage protection, AC output short circuit protection, AC output overload protection, battery over-voltage protection, battery under-voltage protection, battery discharge over-current protection, PV over-voltage protection, PV over-current protection PV overload protection, PV reverse connection protection, PV reverse injection protection, over-temperature protection, fan fault detection.
Display Screen	
Display Screen Size	3.2 inches
Display Screen Type	Ordinary segment code screen
Button + Indicator Light	
Inverter On/Fff Button	Rocker switch
Reset Button	Non-optional
Screen Buttons	4(ESC、DOWN、UP、ENTER)
Indicator Light	3(AC OUT、CHARGE、FAULT)
Communication Function	
Communication Interface	（1）1 RJ45 interface: including RS485 protocol (BMS communication), CAN protocol (BMS communication) （2）1 DB15 interfaces, 1 male and 1 female: CAN+ synchronization signal, used for parallel communication （3）2 Current-sharing interfaces: used for current-sharing

	detection during parallel operation （4）1 USB interface: RS232 protocol, used for WIFI stick communication interface （5）2 Dry contacts: used for connecting diesel generators
WIFI Communication Function (optional)	Supported
WIFI Stick（optional）	External WIFI stick (USB interface, RS232 protocol, 5VDC power supply)
APP Functions (optional)	It can be connected to the mobile phone APP to check the working status of the inverter and control its on and off
Other Parameters	
Noise	≤55dB
IP Rating	IP21
Shell Material	Sheet metal
Wiring Compartment	YES
Operating Ambient Temperature	-10℃～+50℃
Storage Ambient Temperature	-15℃～+60℃
Relative Humidity	5%~95%（No condensation）
Heat Dissipation Method	Forced air cooling
Altitude	4000m（＞3000m Start derating）
Product Dimensions:Width*Depth*Height（mm）	420x325x138 mm
Packaging Size：Width*Depth*Height（mm）	to be confirmed
Weight	10.9kG
Installation Method	Wall-mounted
Other Descriptions	
Positioning	Mid-to-low range market
Certification	For now, it's not necessary. If certification is required, we can purchase the certificate or make another prototype that can pass the certification.
Warranty	2 Years
Grounding Point	YES

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