Solar Power System accessories

User Manual

SF-SOLARKIT-BATT-2560WH-24V

About this manual

The products described in this manual are only for sale and use in mainland China and internationally. Use this manual as a guide. The photos, graphs, charts and illustrations provided in the manual are only for the purpose of explanation and description, and there may be differences with the specific products, please refer to the actual product. Due to product version upgrade or other needs, the company may update this manual. If you need the latest version of the manual, please log in to the company's official website to check.

It is recommended that you use this manual under the guidance of professionals.

Responsibility Statement

To the maximum extent permitted by law, the products described in this manual (including its hardware, software, firmware, etc.) are provided "as is" and may have defects, errors or malfunctions, and the company does not provide any form of express or implied Guarantees, including but not limited to warranties of merchantability, quality satisfaction, fitness for a particular purpose, non-infringement of third-party rights, etc.; and no compensation for any special, incidental, incidental or indirect damages caused by the use of this manual or the use of the company's products, Including but not limited to loss of business profits, loss of data or documents.

If you connect the product to the Internet at your own risk, including but not limited to the product may be subject to network attacks, hacker attacks, virus infection, etc., the company is not responsible for the abnormal operation of the product, information leakage and other problems caused by this, but the company will Provide you with product-related technical support in a timely manner.

When using this product, please strictly follow the applicable laws. The company shall not be held responsible if this product is used for infringement of the rights of third parties or for other improper purposes.

In the event of a conflict between the contents of this manual and applicable law, the law shall prevail.

Chapter 1 Precautions

- **Please do not use gasoline or other organic solvents to clean this product, use a soft and dry cloth**

- **This product does not contain any user maintenance parts. Please do not disassemble or modify the lithium battery circuit without authorization, otherwise the product warranty will be lost. If there are quality or technical problems, please contact the dealer or return the product to our company for maintenance. Our company implements the "Three Guarantees" for the product within one year.**

- **The product installation must be firm and stable to avoid accidents and unnecessary losses.**

- **This product reserves the right to continuously improve, subject to change without notice**

Chapter 2 Product Introduction

2.1 Product overview and features

- This product is a professional solar intelligent power supply system, which consists of three parts: solar panel, lithium battery and mounting bracket. It has the product features of two easy and two high (easy to install, easy to use; long life, high reliability). In the case of not connecting to the mains, it can provide stable and reliable power output for the device, which is widely used in urban construction, road monitoring, new rural reconstruction, environmental governance, water source protection, forest fire prevention and other scenarios.
- -This product is suitable for tower types and monitoring pole installation scenarios. It is installed with brackets or hoops, and it is firmly fixed without loosening.
- -This product achieves large-capacity configuration to supply power to the camera, to meet the needs of different cloudy and rainy environments;
- -This product meets the sunshine angle all over the world, and gives full play to the requirements of the best use of clean energy;
- -This product has a strong wind resistance level, and the equipment still maintains a stable body without loosening in harsh weather environments;
- -The lines of this product are designed with waterproof wire ends, fully considering the outdoor rain and snow weather, equipment failure caused by short circuit, and meet IP67;
- -This product adopts a high-performance controller chip, with lithium battery activation and pre-charging functions, which can monitor and protect the battery in real time, and the circuit conversion efficiency is over 90%;
- -This product supports RS485 communication with the device, and obtains information such as voltage, remaining power, and current in real time.
- -The power generation unit of this product adopts high-efficiency monocrystalline silicon solar panel, and the efficiency of the whole solar panel is over 20%.
- -The energy storage unit of this product adopts lithium battery, which is safe and reliable, with deep cycle, 2000 cycles, and a service life of more than 5 years;
- -This product is made of galvanized steel and is made of precision work, which is stable and reliable without shaking;
- -Working temperature

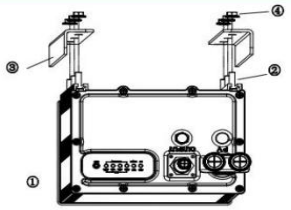
Regular version: discharge temperature: -30~55℃, charging temperature: 0℃~55℃,

2.2 Packing List

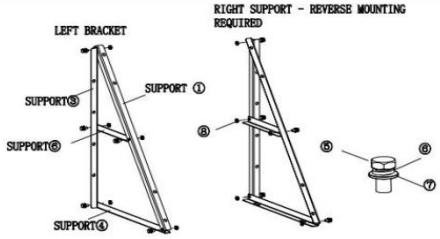
Packing List		
Name	**Specification**	**QTY**
Lithium battery pack	Aluminum Shell, Aviation Plug	1 PC
Screw	M6*20	6 sets
Output cable	Aviation Plug 2.5 meters	1 PC
Solar panel	200W solar panel	2 PCS
Bracket 1	W30mm H30mm T3mm, L972mm	2 PCS
Bracket 2	W30mm H30mm T3mm, L866mm	2 PCS
Bracket 3	W30mm H30mm T3mm, L800.5mm	2 PCS
Bracket 4	W30mm H30mm T3mm, L568mm	2 PCS
Bracket 5	L Shape, W30mm H30mm T3mm, L296mm	2 PCS
Tube	W50mm H30mm T2mm, L800mm	2 PCS
Solar panel bracket	C shape, W41mm H21mm T2mm.L2000mm	2 PCS
铝合金边压块	T3mm Including SUS304 M8*35 screw, and screw nut to match the solar panel,L48mm	8sets
Screw	M10*20	18sets
Screw	M10*50	8sets
U shape bracket	M12*192mm	2 PCS
User manual		1 PC

Chapter 3 Product Installation

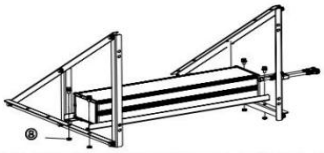
MAKE SURE THAT THE PRODUCT ACCESSORIES AND INSTALLATION TOOLS ARE FULLY SET, AND THE SOLAR PANEL SHOULD BE INSTALLED IN THE DUE SOUTH DIRECTION. IF THE ACTUAL SITUATION CANNOT BE REACHED, INSTALL IT AT THE ANGLE WITH THE MOST SUNLIGHT



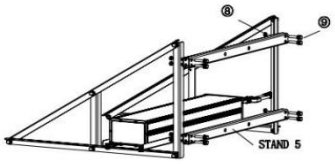
STEP 1: TAKE OUT THE BATTERY PACK (①) UPSIDE DOWN, TAKE OUT 6 M6 EXTERNAL HEXAGONAL SCREWS (②) INTO THE ALUMINUM SHELL SCREW SLOT, TAKE OUT 2 SUPPORT 2(③) AND ALIGN THE 6 SCREWS WITH THE 6 HOLES OF THE SUPPORT FLAT ACCORDING TO THE FIGURE, IT IS BEST TO MOVE THE SUPPORT SO THAT IT IS IN THE MIDDLE POSITION RELATIVE TO THE BATTERY, TAKE OUT 6 M6 SIDE NUTS (④), AND FIX THE SUPPORT AND BATTERY PACK TIGHTLY.



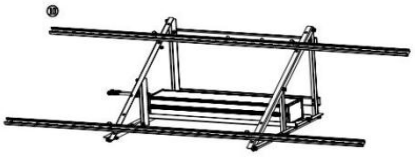
STEP 2: TAKE TWO M10 SHORT SCREWS (⑤) OUT OF SUPPORT 1, SUPPORT 3, SUPPORT 4 AND SUPPORT 6, INSTALL THE SPRING WASHER (⑥) AND FLAT WASHER (⑦) IN TURN, THEN PLACE THE LEFT SUPPORT AND RIGHT SUPPORT (TO BE INSTALLED IN REVERSE) IN THE CONNECTION MODE SHOWN IN THE FIGURE, PLACE THE COMBINATION SCREWS INTO THE SPECIFIED MOUNTING HOLES, AND TIGHTEN THE NUTS (⑧) ONE BY ONE.



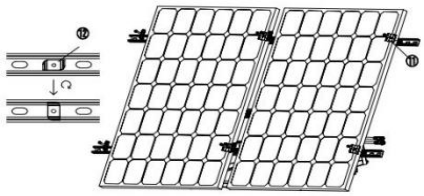
STEP 3: ASSEMBLE THE BATTERY FIXED IN STEP 1 WITH THE LEFT BRACKET AND THE RIGHT BRACKET IN STEP 2 ACCORDING TO THE FIGURE, TAKE OUT FOUR SETS OF M10 SHORT SCREWS, INSTALL THE SPRING WASHER AND FLAT WASHER ACCORDING TO STEP 2, SECURE AND TIGHTEN THE FOUR SCREW HOLES OF THE BATTERY AND BRACKET WITH M10 NUTS (⑧).



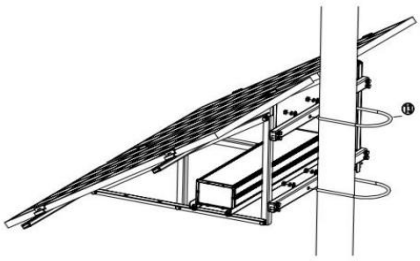
STEP 4: TAKE OUT TWO SUPPORTS (5) AND EIGHT SETS OF M10 LONG SCREWS (⑨), INSERT SPRING WASHERS AND FLAT WASHERS ACCORDING TO STEP 2, SECURE SUPPORT 5 AND SUPPORT KITS IN STEP 3 ACCORDING TO THE FIGURE, THREAD THE M10 LONG SCREWS THROUGH THE MOUNTING HOLES AND TIGHTEN THEM WITH M10 NUTS (⑧). STRAIGHTEN THE SUPPORT TO PREVENT IT FROM SKEWING.



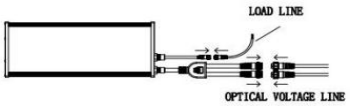
STEP FIVE: TAKE OUT THE PHOTOVOLTAIC BRACKET (⑩), SO THAT THE PHOTOVOLTAIC BRACKET IN THE LEFT AND RIGHT POSITION, TAKE OUT FOUR SETS OF M10 SHORT SCREWS, ACCORDING TO STEP TWO INTO THE SPRING WASHER, FLAT WASHER, ACCORDING TO THE FIGURE OF THE PHOTOVOLTAIC BRACKET AND BRACKET KIT OF FOUR SCREW HOLES FIXED WITH M10 NUTS AND TIGHTEN.



STEP 6: TAKE OUT THE PHOTOVOLTAIC BLOCK (⑪), THE PLASTIC WING NUT (⑫) AND ITS M8 HEXAGON SOCKET SCREW, TURN THE 8 SETS OF PLASTIC WING NUTS 90 DEGREES ACCORDING TO THE FIGURE (TOWARDS THE SIDE WITH THE CIRCULAR ARC), AND PLACE THEM IN THE PHOTOVOLTAIC BRACKET. ANOTHER PERSON ASSISTS IN PLACING THE PHOTOVOLTAIC PANEL TO ENSURE THAT THE PHOTOVOLTAIC PANEL WILL NOT INTERFERE WITH THE POLE, ADJUST THE 8 SET OF PLASTIC WING NUTS TO THE APPROPRIATE POSITION ON THE EDGE OF THE CORRESPONDING PHOTOVOLTAIC PANEL AND PLACE THE PRESSURE BLOCK ON IT. USE THE MATCHING M8 HEX SOCKET SCREW TO PASS THROUGH THE BLOCK AND LOCK.



STEP 7: ADJUST THE PHOTOVOLTAIC PANEL TO FACE DUE SOUTH BY WEST. AFTER ADJUSTING THE INSTALLATION HEIGHT AS NEEDED, TAKE OUT THE U-SHAPED HOOP (IF NECESSARY) AND REMOVE THE SCREWS, SPRING WASHERS, AND FLAT WASHERS. PASS THE HOOP THROUGH THE MOUNTING HOLES IN THE SUPPORT ACCORDING TO THE FIGURE, PLACE THE FLAT WASHERS, SPRING WASHERS, AND NUTS IN TURN, AND TIGHTEN IT.



STEP 8: TAKE OUT THE LOAD CABLE OF THE FITTING, CONNECT THE POSITIVE AND NEGATIVE TERMINALS OF THE LOAD CABLE AND THE COMMUNICATION CABLE TO THE ELECTRICAL DEVICE, INSERT THE LOAD FEMALE CONNECTOR ON THE BATTERY STRING AND TIGHTEN THE NUT, INSERT THE OPTICAL VOLT CABLE CONNECTOR ON THE SOLAR PANEL AND THE PHOTOVOLTAIC FEMALE CONNECTOR ON THE BATTERY STRING AND TIGHTEN THE NUT RESPECTIVELY. THE POWER SUPPLY IS ON, AND ENSURE THAT THE POWER SUPPLY IS NORMAL.

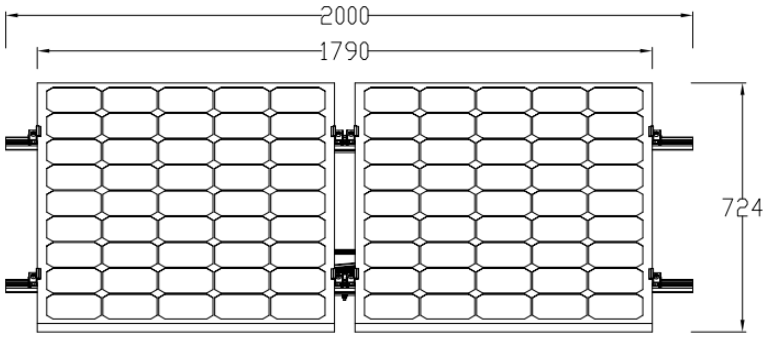
NOTE: INSTALL MULTIPLE SOLAR PANELS OR BATTERIES IN THE SAME WAY

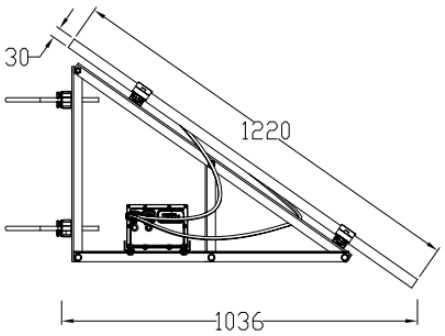
3.2Technical Data

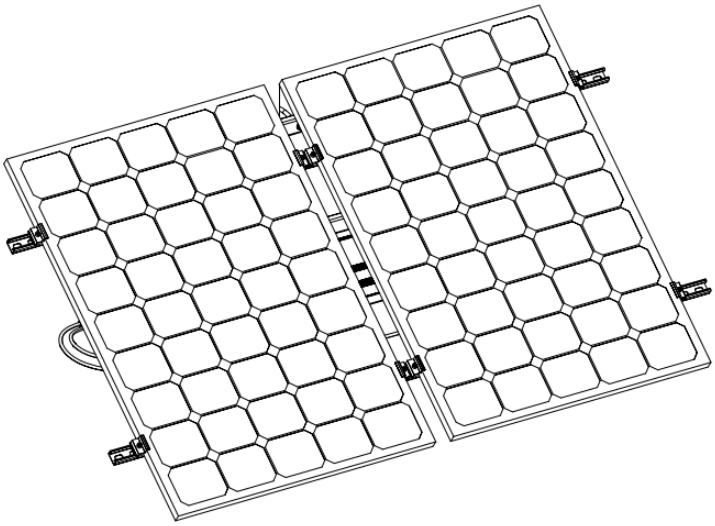
Accessories	Technical Parameters/Specifications	TY-ZF400200-R-12&24
Solar Panel	Solar cell	166 mono（Mono-crystalline silicon）
	Power	200W±3% X2pcs
	Open circuit voltage	22.2V
	Operating voltage	18V
	Max. operating current	22.2A
	Cell conversion rate	21.8%
	Glass specification	3.2mm
	Applicable environment	-40°C ~ 85°C
	Hail impact test	23m/s ,7.53g
Battery	Cell Type	LiFePO4
	Cell Rated capacity	100Ah（0.5C@ RT）
	Cell Rated voltage	3.2V
	Cells in series and parallel	4S2P
	Rated capacity	200Ah（2560Wh）
	Rated voltage	12.8V
	Battery internal resistance	≤100mΩ（AC Tested at 1kH）
	Charging mode	Constant current / constant voltage
	Charging voltage	14.6V
	Load output	12V,24V
	Load output current	12V5A , 24V5A
	Discharge cut-off voltage	10V
	Standard charge current	20A
	Max. Total power	80W
	Max. instantaneous discharge current	/
	Weight	/

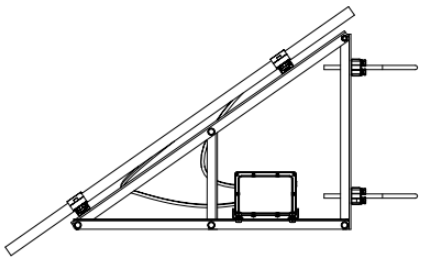
	Dimensions (L x W x H)	781x177x133mm
	Storage temperature	Charge capacity 40~50%, no more than 6 months (0℃～ +35℃)
	Operating temperature	Charging: 0℃～60℃,
		Discharge: -30℃～60℃,
	Cycle life	≥2000 times （@0.5C 25℃）
	Communication function	RS485 baud rate 9600/115200 (MODBUS), OSD
	Heating function	/
Controller boards	Max. continuous charge current	20A
	Max. continuous discharge current	10A
	Charging voltage	<30V
	Protection function	Overcharge protection,Over-discharge protection,Overvoltage protection, Overcurrent protection, Short circuit protection
Other parameters	Environmental reliability indicators	0 ℃ ~60 ℃ Humidity less than 90%; Waterproof: IP67
	Wind resistance rating	Level 12
	Cargo transport condition qualification	Dangerous goods, MSDS, UN38.3
	Power generation system installation methods	Corner mount bracket or monitor pole hoop fixing
	Camera mounting method	Hoop + gun bracket or other means
	Equipment size	2000×724×1036 mm
	Package size	Solar panel：1223x878x38 mm*2 pieces
		Battery: 1101x227x188mm
		Brackets:2130x76x76mm
	Gross weight	67.3 kg
	Net weight	63.9 kg

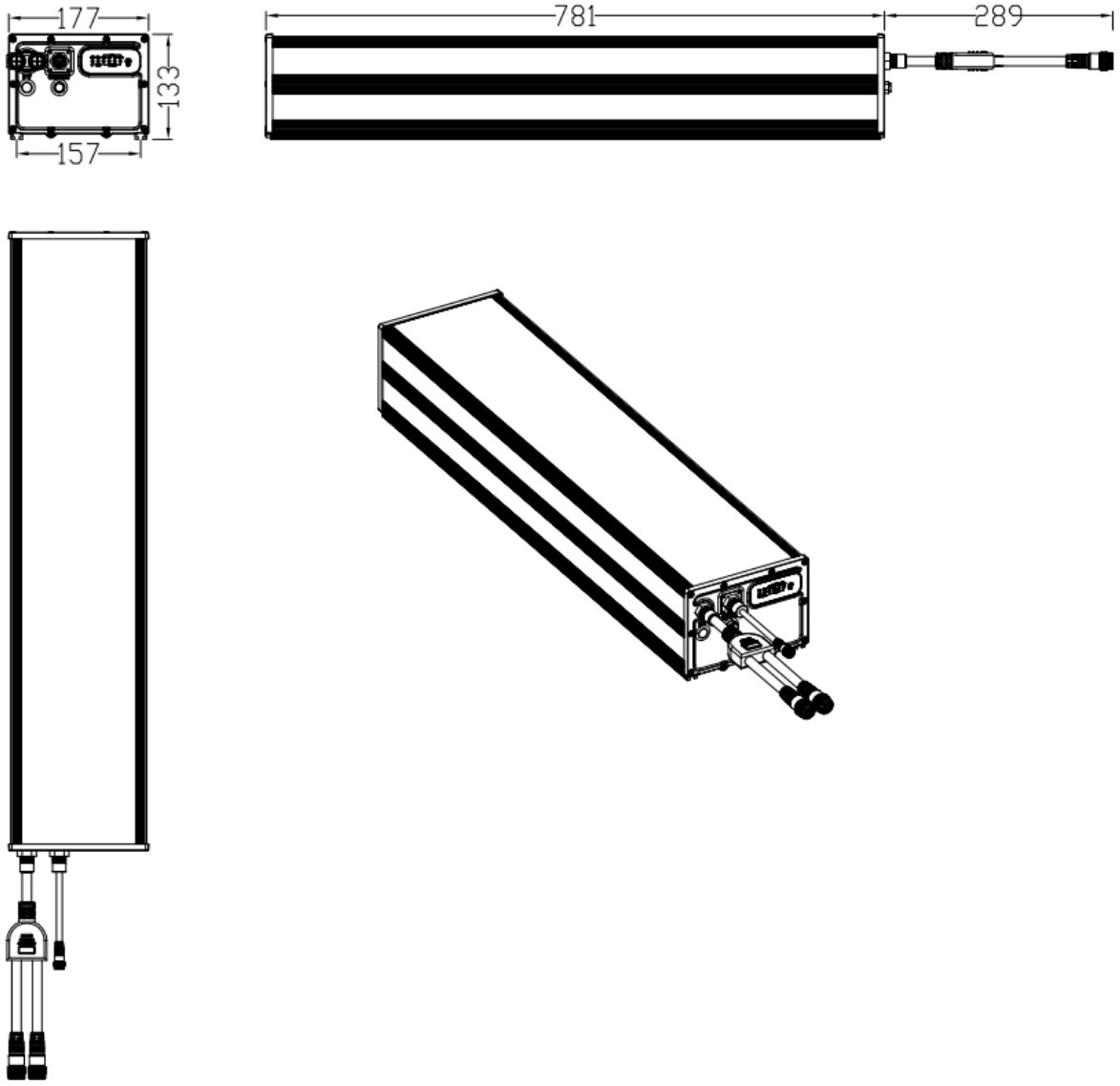
3.3 Dismension











3.4 Product maintenance instructions

- The installation angle is generally 5-10° to the south and west of the solar panel; facing the affected area of the installation environment, it is not necessary to follow this rule and install it in the direction of the sun as much as possible.
- The male and female connectors of the monitor and the solar panel should not be hard inserted, and the corresponding holes should be connected properly.
- Please avoid the shadow of obstacles such as houses and trees during installation, otherwise the power generation efficiency of the solar panel will be reduced, resulting in lower monitoring efficiency.
- The power generation efficiency of solar panels with clean surfaces is high, so the surface (ash layer, leaves, oil stains, etc.) needs to be cleaned up. In winter, the snow on solar panels needs to be removed in time.
- Monitor the battery indicator, the green light is always on, it belongs to the charging state, and the red light is always on, it is in a state of power loss. (See Figure 1-3 for details)
- Plug in the male and female plugs of the solar panel, monitor the power supply activation, charge status during the day, and output 24 hours a day.
- We shall not be liable for any loss caused by the failure caused by the combined use of equipment unrelated to this product and the modification of the circuit.

Phenomenon	problem	Approach
Short output time	Low battery	Check that the battery plate is charging properly and that the battery plate is correctly configured
	Excessive output power	Check the power consumption of the device, if the power consumption is too high replace the solar specification
Output only works for one night	Battery plate not connected	Check if the battery plate connection is correct, if the wiring is reliable and if the solar panel is covered
	Battery plate connected backwards	Reverse the wiring of the battery board during the day and observe if the battery board indicator does not light up
Camera is not online	No power supply to the camera	Check if there is voltage output from the power supply line of the power generation system
	Flow is exhausted	Check if the traffic card is running out and needs to be topped up
	The camera antenna is not connected properly	Check that the antenna is not loose and tightened and secured
	The local communication base station does not support the network service provider of the service	Change the appropriate network service provider for the installation site
	SIM card is not inserted properly	Check if the SIM card is installed correctly from new, chip position to PCB board orientation.
Dome does not rotate	Adjustment device using PTZ control, not rotating. Dome communication signal is unstable, signal is not strong and there is a delay	Re-apply power for inspection, if not rotate the camera has a fault. Change the installation place suitable network service provider.