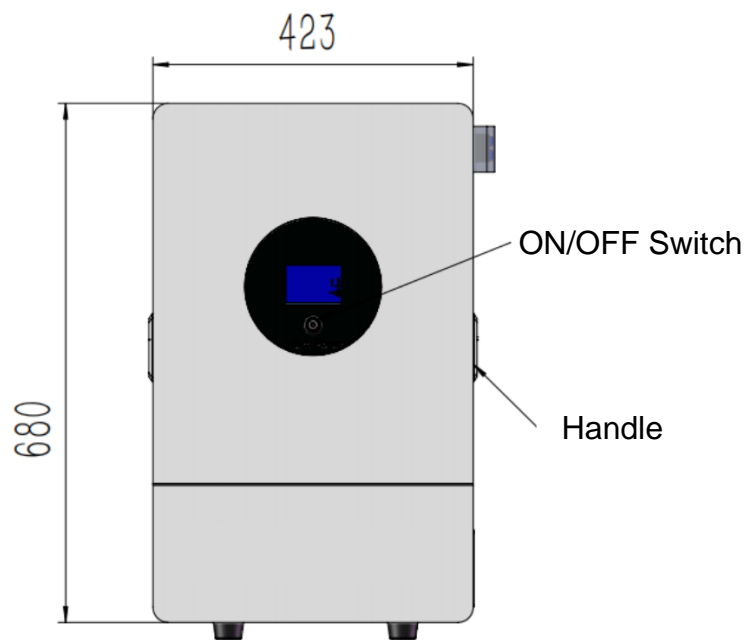


Lithium-Ion Battery Pack

Manual

51.2V280Ah 14.33KWH



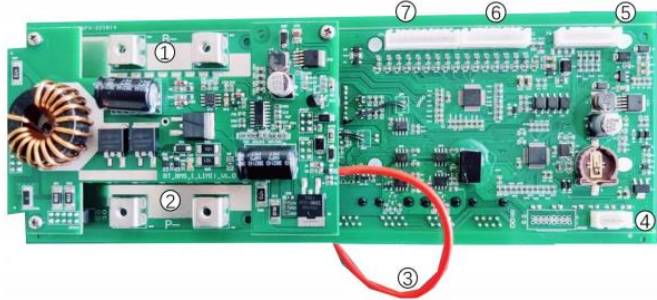
1. SCOPE

This specification describes the technical parameters and requirements of the rechargeable Lithium Ion battery pack designed & manufactured by SUNWAY SOLAR CO., LTD..

2. BATTERY CELL BASIC SPECIFICATION

No.	Item	Standard		Remark
1	Nominal capacity	Rated Capacity	280 Ah	0.5C
2	Internal resistance	Maximum	0.25mΩ	AC 1 KHz
3	Nominal voltage		3.2V	
4	Cell weight		5.56kg	±0.2kg
5	Charge limiting voltage		3.65V	
6	Discharge ending voltage		2.0V	
7	Charge current	Standard	140A	0.5C
		Maximum	280A	1C
8	Discharge current	Standard	140A	0.5C
		Max continuous	280A	1C
9	Operating temperature	Charge	0~60°C	
		Discharge	-20~60°C	
		Storage	-30~45°C	1month
			-20~35°C	6months
10	Cell picture			

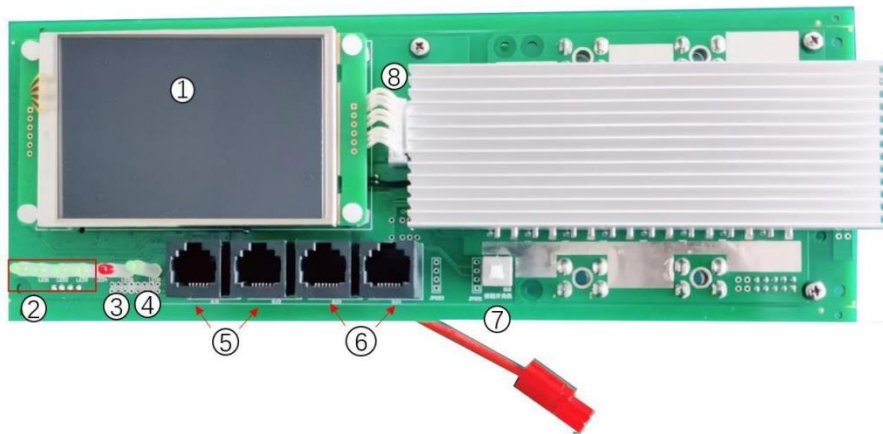
3.BATTERY MANAGEMENT SYSTEM SPECIFICATION

	Item	Default	Error	
Cell	Cell Over-Charge Voltage Protection (COVP)	Protected voltage	3650mV	
	Cell Over-Charge Voltage Protection Release (COVPR)	Release Voltage	3450mV	
	Cell Over-Discharge Voltage Protection (CUVP)	Protected voltage	2600mV	
	Cell Over-Discharge Voltage Protection Release (CUVPR)	Release Voltage	2800mV	
Pack	Over-Charge Voltage Protection (OVP)	Protected voltage	58.4V	
	Over-Charge Voltage Protection Release (OVPR)	Release Voltage	55.2V	
	Over-Discharge Voltage Protection (UVP)	Protected voltage	41.6V	
	Over-Discharge Voltage Protection Release (UVPR)	Release Voltage	44.8V	
	Balance	Charge to balancing		
	Size	250mm*80mm*48mm		
	Picture			

3.2 Functional characteristics

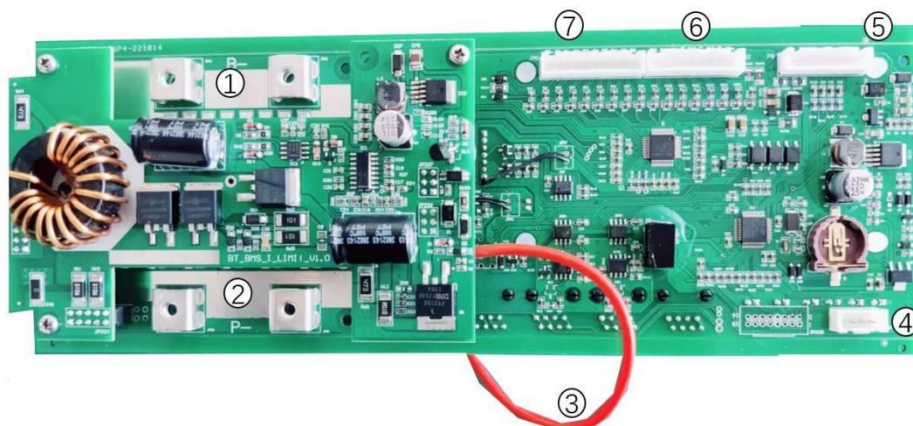
- High integrated analog front-end
- Dual/RS485/CAN Communication
- Multiple wake-up modes
- High voltage accuracy ($\pm 5\text{mV}$)
- Parameter adjustable setting
- High current accuracy ($\leq 1\% @ \text{FS}$)
- Low power consumption
- 7-ways temperature detection ($\leq 1^\circ\text{C}$)
- Active balancing function(Optional)
- SOC estimation function($\pm 1\%$)
- SOH estimation function($\pm 1\%$)
- Short circuit protection
- Current limiting function(10A)
- Support customized inverter protocol
- Data storage
- Port upgrade function
- Touch display
- DIP address setting(optional)
- Alarm record

3.3 BMS picture



- | | | |
|-----------------------|------------------|-----------------------------|
| 1. Touch display | 4. RUN indicator | 7. ON/OFF |
| 2. Capacity indicator | 5. CAN port | 8. Display interface module |
| 3. Alarm LED | 6. RS485 port | |

BMS Back view:



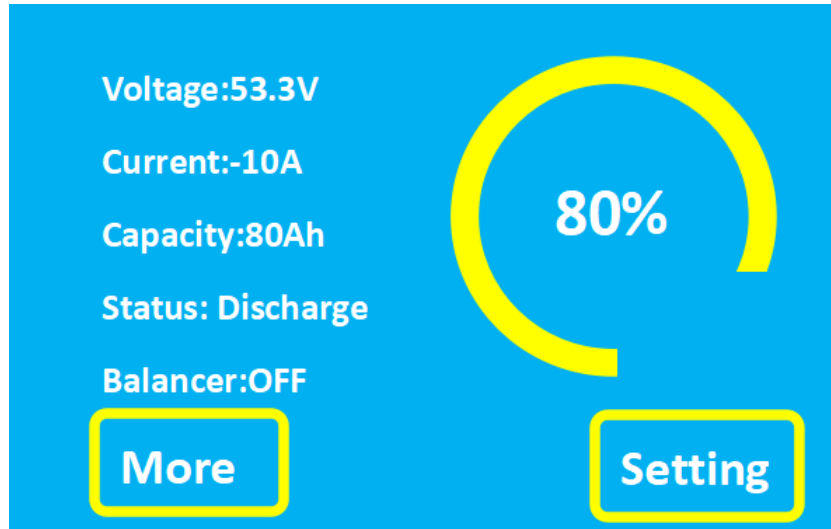
- | | | | |
|-------|-----------------------|-----------|------------|
| 1. B- | 3. B+ connecting wire | 4. 4 pins | 6. 9 pins |
| 2. P- | | 5. 8 pins | 7. 10 pins |

3.4 Touch display setting(Optional):

Turn on the ON/OFF HSitch, the touch display will be ON with a welcome page, and after several seconds, it goes into the front page with basic battery data.

All the pages can be customized.

Home page



String voltages page

The string voltages page has a blue background with white text. It is titled 'Cell voltage' and contains a table of 16 cells. At the bottom, there are two yellow-bordered buttons labeled 'Back' and 'Next'.

Cell voltage	
Cell 1	3330mV
Cell 2	3331mV
Cell 3	3331mV
Cell 4	3331mV
Cell 5	3332mV
Cell 6	3332mV
Cell 7	3332mV
Cell 8	3332mV
Cell 9	3332mV
Cell 10	3331mV
Cell 11	3332mV
Cell 12	3332mV
Cell 13	3331mV
Cell 14	3331mV
Cell 15	3331mV
Cell 16	3331mV

Battery temperature page

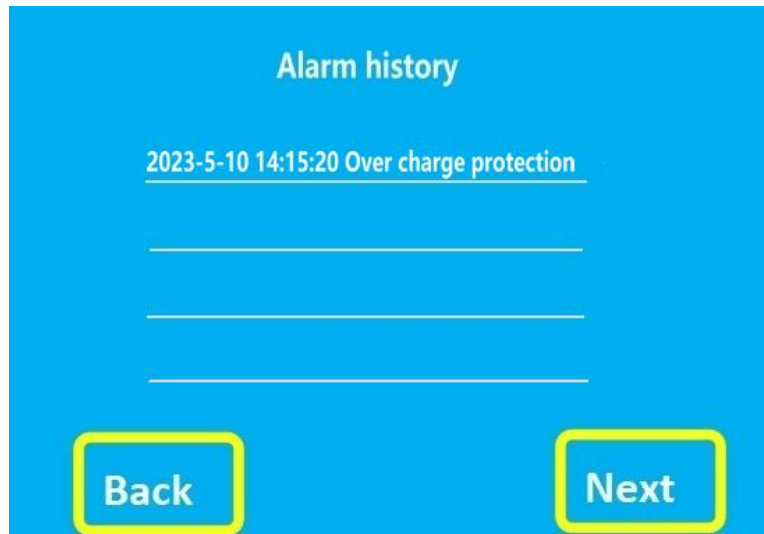


Alarm page

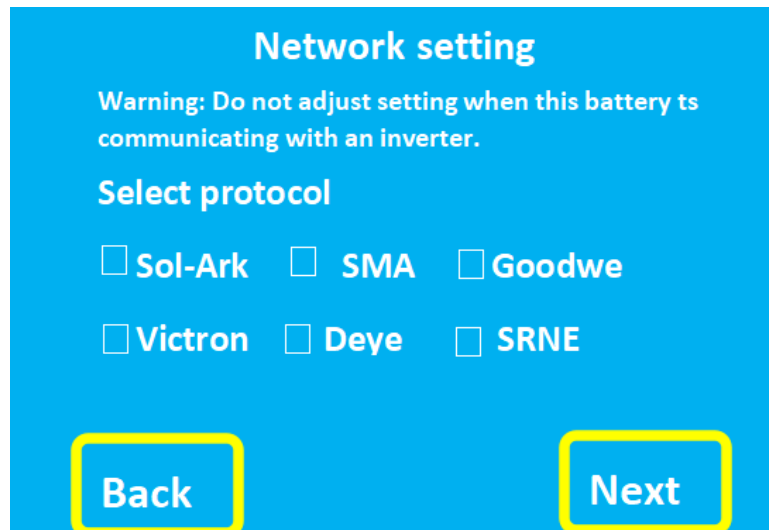


File name: HS51B300TW2

Alarm record page



Inverter selecting page(Protocol can be customized)



DIP setting page

Select the battery to inverter , type 1 and make it as master battery, then all other batteries can be set from 2,3,4 .



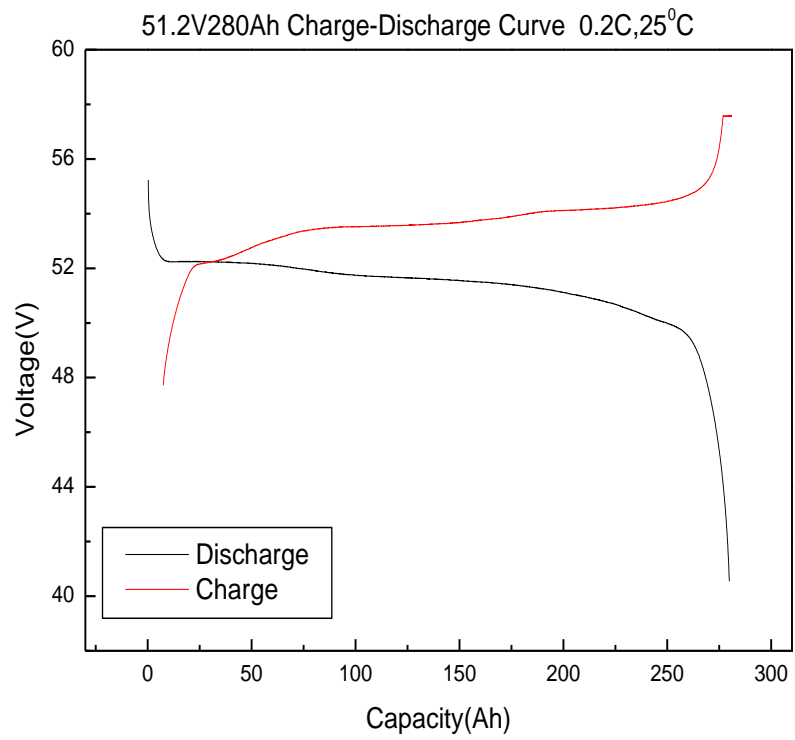
Compatible inverter and protocol brands

		
		
		
		
No.	Item	Parameter
		
Customized protocol supported		

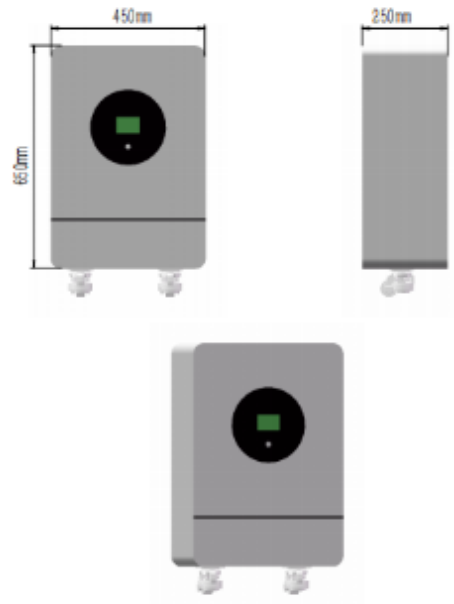
4. B
AT
TE
RY
PA
CK
BA
SI
C
SP
EC
IFI
CA
TI
ON

1	Rated Voltage		51.2V
2	Rated Capacity		280Ah (0.2C Discharge rate)
3	Cell configuration		16S1P
4	Energy		14336Wh
5	Discharge	current	140A
		Max continuous current	200A
		Cut off voltage	About 40V
6	Charge	Voltage	57.6±0.2V
		Current	≤140A
7	Resistance	Discharge connectors	≤30mΩ
8	Working Environment	Charging	0°C~+45°C
		Discharging	-20°C~+60°C
		Humidity	RH≤85%
9	Storage Environment	Temperature	0°C~40°C
		Humidity	RH≤50%,
10	Packing	Metal shell	
11	weight	≤120kg	
12	Size	(550*450*250) ±2mm	
13	Other function	RS485/CAN	
14	Defensive function	Overcharge protection, overdischarge protection, temperature protection, balancing function, short circuit protection	
15	Other functions	Current limiting 10A	
16	LCD	3.5 inch touch screen	
17	Cycle times	0.2C 6000 times continuously. (Capacity retention rate ≥70%)	

5. CHARGE AND DISCHARGE CURVE



6.DIMENSIONS AND PHYSICAL DRAWINGS



7.CAUTION IN USE

To ensure proper use of the battery please read the manual carefully before using it

7.1 CHARGE AND DISCHARGE

- Charge the battery with Lithium battery charger, standard voltage(57.6V), with CC/CV mode to charge the battery until current is 0.02C;
- Discharge the battery with standard current 0.2C , continuous discharge to 40V or battery cut off;
- Never use a modified or damaged charger;
- Recharge the battery within 12 hours after using;
- Do not leave battery in charger over 24 hours.

7.2 STORAGE

- Store the battery in a cool, dry and well-ventilated area;
- Store the battery in a 60% - 80% SOC;
- The batteries shall be charged every 2 months during storage.

7.3 HAZARD WARNINGS

- Do not expose to, dispose of the battery in fire, heating source;
- Do not reverse charge the battery;
- Avoid excessive physical shock or vibration;
- Do not disassemble or deform the battery;
- Do not immerse in water;
- Do not use battery mixed with different manufacturers, type or model batteries;
- Keep out of the reach of children;
- Do not connect the batteries in serial and parallel.

7.4 DISPOSAL

- Dispose of in accordance with local regulation.

8 .PRODUCT LIABILITY

8.1. Our company guarantees that all indicators of the products will be strictly inspected before leaving the factory to ensure that the product qualification rate reaches 100%.

8.2. Our company guarantees that after the installation, and acceptance of the product, our company is responsible for free maintenance.

8.3. Under any of the following circumstances, free warranty will not be given, but reasonable paid services can be provided.

- The warranty period has expired or the purchase certificate cannot be provided;
- Damage caused by improper use and maintenance(especially water, falling);
- Repairs or disassembles the product without authorization;
- Product failure or damage due to irresistible disasters such as flood, fire, lightning strike and earthquake;
- Other faults or damages not caused by the product itself.