LIGHTWAVE

PRODUCT SPECIFICATION SHEET

Model:
LW-LiFe-17.5KW

catalogue

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1. Application scope

This specification sheet is suitable for the LiFePO4 battery pack products designed and developed by the LIGHTWAVE

2. Basic characteristics

Number	project	Common parameters	Remarks
1	Model	17.5KW	Prismatic LFP Cell-350Ah
2	Rated Capacity	350AH	
3	Energy	17.92KW	
4	Rated Voltage	51.2V	
5	Maximum Charging Voltage	58.4V	
6	Discharge cut off Voltage	40V	
7	Max. Charging Current	150A	
	Max. Continuous Discharge Current	150A	
	Standard Charging & Discharge Current	≤135A	
8	Max. Output Power	7500W	
	Standard Output Power	6800W	
9	Battery weight	≈134KG	
10	Internal resistance	≤ 6m Ω	Including internal resistance of testing fixtures

11	Support Inverter Interaction Protocol	RS 485		001-PYLON RS485 LV V3.5-2019.08.07002-GrowattRS485 V2.02-2019.07.24003-Voltronic RS485 Inverter V1.5-2022.01.18036-WOW RS485 Modbus V1.3-2017.06.27012-Luxpowertek RS485 Inverter V0.3-2020.07.06004-LEOCH RS485 Modbus V1.0 2020.01.04(MSL-485)(default)015-Schneider V2.0026-Phocos RS485 2021.04.0(phocos)	
		CAN		01-PYLON CAN Inverter EMS(DEYE02-Growatt CAN LV V1.05-2019.08.28010-Victron CAN 2021.01.07015-Schneider CAN V2.0012-Luxpowertek CAN V1.0-2020.02.11013-Sorotec CAN Inverter V1.0017-SMA CAN V2.0007-GoodWe CAN Inverter LV V1.7-2020.02.28035-STUDER CAN V1.02-2018.06.14005-SofarSolar CAN inverter V2.1.003-2019.12.21030-MUST CAN PV1800F(PV-CAN)(default014-GINLONG CAN LV V1.0-2019.12.28033-TBB CAN V1.05-2021.04.20(TBB)031-MEGAREVO CAN Inverter Ly 1.1028-Senergy CAN V1.1-2022.05.10029-Afore CAN Hybrid Inverter V1.01-2022.07.01	
12	Cycle Life			SOC ⩾80% initial capacity @ room temperature ⩾6000 times 0.5C charging 0.5C discharging DOD 80%		
13	Nominal			⩾51.2V		
14	Charging Method (CC/CV)	Standard	CAN	60A	58.4V cut off	Charge at a constant current and voltage of 60A to 58.4V, then switch to constant voltage charging at 58.4V until the charging current is less than or equal to 0.05C.
			CAN	58.4V	6A cut off	
15	Working Temperature		Charging		0 °C~65 °C	
			Discharge		-20°C~65 °C	
			Storage		-20°C~65 °C	

3.Terminal Definition

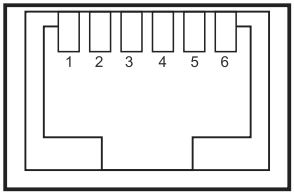
3.1 Terminal functions and definitions

	Wiring Definition	
P +	Battery Positive Pole	
P –	Battery Negative Pole	
RS4851	When using the battery box in parallel, you can also view the PACK information, with a default baud rate of 9600bps	RJ45-8P * 2
RS4852		
CAN/RS485	Used to connect inverters	RJ45-8P
RS232	It can communicate with the upper computer through the RS232 interface, so that various information of the battery can be monitored through the upper computer, including battery voltage, current, temperature, status, and battery production information. The default baud rate is 9600bps	RS232-6P6C
SWITCH	Control battery pack output	
REST	Reset switch controls battery on/off and reset	
ADS	DIP switch, set RS485 address and terminal resistance	
CAPACITIY	Power display	
DO	Dry junction	
ALM	Warning indicator light	

3.2 Communication Interface Definition

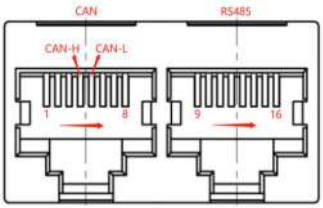
2. Basic 3.2.1 RS232-6P6C vertical RJ11 pins are defined as follows:

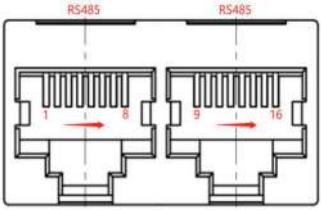
RS232- Using 6P6C vertical RJ11 socket	
RJ11 pin	Definition Description
2	NC
3	TX (Single Board)
4	RX (Single Board)
5	GND



Communication interface RS232

3.2.2 The definition of RJ45 pins is as follows:





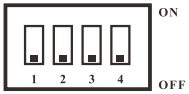
CAN. Using 8P8C vertical RJ45 socket		RS485. Using 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description	RJ45 pin	Definition Description
1、3、6、7、8	NC	9、16	RS485-B1
4	CAN-H	10、15	RS485-A1
5	CAN-H	11、14	GND
2	GND	12、13	NC

CAN and RS485 interfaces

RS485. Using 8P8C vertical RJ45 socket		CAN Using 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description	RJ45 pin	Definition Description
1. 8	RS485-B	9、16	RS485-B
2. 7	RS485-A	10、15	RS485-A
3. 6	GND	11、14	GND
4. 5	NC	12、13	NC

Parallel communication port

DIP switch address setting:



address	DIP switch position			
	# 1	# 2	# 3	# 4
1	0FF	0FF	0FF	0FF
2	ON	0FF	0FF	0FF
3	0FF	ON	0FF	0FF
4	ON	ON	0FF	0FF
5	0FF	0FF	ON	0FF
6	ON	0FF	ON	0FF
7	0FF	ON	ON	0FF
8	ON	ON	ON	0FF
9	0FF	0FF	0FF	ON
10	ON	0FF	0FF	ON
11	0FF	ON	0FF	ON
12	ON	ON	0FF	ON
13	0FF	0FF	ON	ON
14	ON	0FF	ON	ON
15	0FF	ON	ON	ON
16	ON	ON	ON	ON

After the communication parallel line is connected, automatic encoding will be performed when the code is dialed to 0 and the machine is turned on (there is no matter the order of master-slave machine startup, the host will continue to automatically encode after startup). If the encoding fails, all indicator lights of the corresponding single machine will flash together.

When PACKs are used in parallel, different PACKs can be distinguished by setting the address through the dip switch on the BMS. It is necessary to avoid setting the address to the same. The definition of the BMS dip switch refers to the table below. In parallel mode, the default dip address 1 is the host.

4. Explanation of indicator lights:

4.1 Work status indication:

state	Normal/Alarm /Protection	ON/OFF	RUN	ALM	Battery indicator LED							explain
		●	●	●	●	●	●	●	●	●	●	
Shutdown	Dormancy	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Total Off
Shutdown	Normal	Lighting	Flash 1	Off	According to the power indicator							position in readiness
	Alarm	Lighting	Flash 1	Flash 3								Module Low Voltage
Charging	Normal	Lighting	Lighting	Off	According to the power indicator (The highest battery indicator LED flashes 2)							The highest battery LED flashes (flashing 2), and the ALM does not flash when there is an overcharge alarm
	Alarm	Lighting	Lighting	Flash 3								
	Overcharge protection	Lighting	Lighting	Off	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	If there is no UtilityPower, the indicator light will switch to standby mode
	Temperature, overcurrent, and failure protection	Lighting	Off	Lighting	Off	Off	Off	Off	Off	Off	Off	Stop charging
Discharge	Normal	Lighting	Flash 3	Off	According to the power indicator							
	Alarm	Lighting	Flash 3	Flash 3								
	Undervoltage protection	Lighting	Off	Off	Off	Off	Off	Off	Off	Off	Off	Stop discharging
	Temperature, overcurrent, short circuit, reverse connection, failure protection	Lighting	Off	Off	Off	Off	Off	Off	Off	Off	Off	Stop discharging
Invalid		Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Stop charging and discharging

4.2 Work status indication:

State		Charging						Discharge					
Capacity indicator light		L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●	L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●
Electricity consumption (%)	0-16.6%	Off	Off	Off	Off	Off	Flash 2	Off	Off	Off	Off	Off	Lighting
	16.6-33.2%	Off	Off	Off	Off	Flash 2	Lighting	Off	Off	Off	Off	Lighting	Lighting
	33.2-49.8%	Off	Off	Off	Flash 2	Lighting	Lighting	Off	Off	Off	Lighting	Lighting	Lighting
	49.8-66.4%	Off	Off	Flash 2	Lighting	Lighting	Lighting	Off	Off	Lighting	Lighting	Lighting	Lighting
	66.4-83.0%	Off	Flash 2	Lighting	Lighting	Lighting	Lighting	Off	Lighting	Lighting	Lighting	Lighting	Lighting
	83.0-100%	Flash 2	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting	Lighting
Running indicator light ●		Lighting						Flashing (flashing 3)					

4.3 Work status indication:

Flashing mode	On	Off
Flash 1	0.25S	3.75S
Flash 2	0.5S	0.5S
Flash 3	0.5S	1.5S

4.4 Switch button instructions:

When the BMS is in sleep mode, press the button (3-6 seconds) and release it to activate the protection board. The LED indicator lights will light up for 0.5 seconds starting from "RUN".
When the BMS is in an active state, press the button (3-6 seconds) and release it. The protection board will be put into sleep, and the LED indicator lights will light up for 0.5 seconds starting from the lowest battery level.
When the BMS is in an active state, press the button (6-10 seconds) and release it, the protection board is reset, and all LED lights light up simultaneously for 1.5 seconds.

4.5 Sleep and wake-up:

4.5.1 Sleep

When any of the following conditions are met, the system enters low-power mode:

1）Individual or overall over discharge protection has not been released for 30 seconds.
2）Press the button (3-6S) and release it.
3）The minimum individual voltage is lower than the sleep voltage and the duration reaches the sleep delay time (while meeting the requirements of no communication, no protection, no balance, and no current).
4）The standby time exceeds 24 hours (no communication, no charging or discharging, no Utility power).
5）Force shutdown through upper computer software.

Before entering sleep mode, it is necessary to ensure that the input terminal is not connected to external voltage, otherwise it will not be able to enter low-power mode.

4.5.2 Wake up

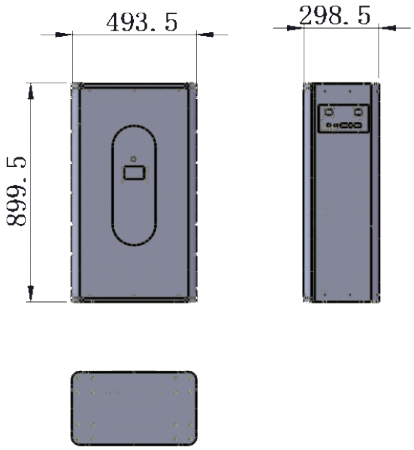
When the system is in low-power mode and meets any of the following conditions, the system will exit low-power mode and enter normal operating mode:

1）Connect the charger, and the output voltage of the charger should be greater than 48V.
2）Press the button (3-6S) and release it.
3）Activate RS232.

Note: After individual or overall over discharge protection, enter low-power mode, wake up regularly every 4 hours, and turn on the charging and discharging MOS. If charging is possible, it will exit sleep mode and enter normal charging mode; If automatic wake-up fails to charge for 10 consecutive times, it will no longer automatically wake up.
When the system is defined as after the end of charging, if the recovery voltage is not reached after 2 days of standby (set value of standby time), the charging will be forcibly restored until the end of recharging.

5. Outline drawing Physical image

Unit mm tolerance ± 2mm



6.Packaging diagram

7. Instructions for use

7.1. Before using the battery, please carefully read the user manual and the surface markings on the battery.
7.2. During use, keep away from heat sources and high voltage, avoid children playing with the battery, and do not fall on the battery.
7.3. Do not short circuit the positive and negative terminals of the battery, do not disassemble the battery yourself, and do not place the battery in a damp place to avoid danger.
7.4. Please dispose of discarded batteries safely and properly, and do not throw them into fire or water.
7.5. The battery pack should be stored at room temperature and charged to 40% -60% of its capacity. To prevent over discharge of the battery, it is recommended to charge it every 3 months.
7.6. The battery pack should be used under specified conditions, and performance is not guaranteed for batteries stored for more than one year.
7.7. Batteries must meet corresponding regulations during transportation, such as packaging, documentation, labeling, etc.

8. Installation and debugging

8.1 List of Goods

Number	Name	Quantity
1	Battery pack	1 PCS
2	Screw	2PCS
3	communication line	3PCS
4	Power harness	2 PCS

8.2 Choose a suitable installation location

- Do not place the battery on flammable building materials
- Recommend hanging the battery on a vertical wall
- The temperature should be between 10 ℃ and 30 ℃ to maintain optimal operating conditions.
- There should be some free space around the battery for heat dissipation, suitable for installation on concrete surfaces or other non flammable surfaces.

9. Disclaimer

Before using the product, please read the product specifications, user manual, and usage precautions carefully to understand the usage method and application scope of the product; If there are errors in the use of the product, incorrect circuit connections, or discrepancies between the input power supply, load functional parameters, and performance parameters marked in the product specifications, it is considered improper use. Our company does not assume any responsibility for damage to the product, load, and surrounding connectors caused by improper use.

Any matters not mentioned in this specification shall be determined through consultation between both parties. The final interpretation right of this specification belongs to the LIGHTWAVE .