

## V-LFP4850

Vision Technology delivers safe lithium iron phosphate Battery solutions for Telecom application.



### Overview

The V-LFP4850 (48V50Ah) back-up lithium iron phosphate battery system is developed for backup of Telecom equipment. Under normal condition, grid AC power supply to rectifier module and the Telecom loads and charge battery pack; When the AC power fail, rectifier module stop power supply, the battery serves for Telecom equipment, to ensure the Telecom equipment runs normally; when the AC power is switched on again, power rectifier module for Telecom equipment recover to while charge the battery pack.

### Features

- RS485 communication output for monitoring
- Built-in BMS with Charging current limitation
- Built-in automatic protection for over-charge, Over-discharge and over-temperature conditions
- State of charge and state of health indication
- Built-in battery control for efficient operation
- Internal cell balancing
- Compatible with standard Telecom rectifiers
- Maintenance free

Specifications		V-LFP4850
Nominal Voltage		48 V
Capacity	Nominal Capacity (@25°C, 0.2C)	50 Ah
	Capacity @25°C, 0.5C	49Ah
	Capacity @25°C, 1.0C	49Ah
Number of cell		15 cell
Cells connection type		Screw/ Laser welding
Battery Weight (Approximate)		29.6 ±1kg
Dimensions (W*D*H)	Width*Depth* Height	(442mm*440mm*134.5mm) ±2
Energy	Normal energy (@25°C , 0.2C)	2400Wh
	Volumetric energy density	92Wh/L
	Gravimetric energy density	82Wh/kg
Cell	Cell model	36130162LFP05
	Cell Voltage (Nominal)	3.2 V
	Cell Capacity (Nominal)	50 Ah
	$\Delta V = V_{\text{cell\_max}} - V_{\text{cell\_min}}$	≤ 0.05V
	The difference between the max. and the min. of cell voltage values, means is range of values of all cells in the battery pack	± 1%
Internal Impedance (@25°C , 50%SOC)	(Max, at 1000Hz.)	≤ 30mΩ
Standard Discharge @25°C	Max. constant current (at 40°C)	50A
	Cut-off voltage	42V
Standard Charge @25°C	Charge Voltage	52.0-54.0V
	Max. constant current (at 40°C)	50A
	Recommended charging current and time	10A(0.2C) about 5.02 - 5.2 hours
Round trip efficiency (%)		≥ 96%
Calendar life @25°C		> 10 years

Specifications	V-LFP4850
Cycle life (@ 25°C, 0.2C)	80% DOD, 4000 cycles
Operating temperature	Charging: 0°C ~ 60°C
	Discharging: -20°C ~ 60°C
Storage temperature	Recommended range: 0°C ~ 45°C
Operating humidity	5 ~ 95% RH, non-condensing
Self-discharge	<2% capacity declined per month at 25°C (average)
Counting function of working time when over temperature	YES
Error between reality and display on the software of SOC (State of Charge), SOH (State of Health)	≤ 5%

## BMS Parameters.

NO.	Type		Function	Setting value V-LFP4850	Remarks
1	Voltage	Charge	Cell Voltage Protection	3.7V Alarm/3.8V Protection	Recover at 3.6V
			Total Voltage Protection	56V Alarm/57V Protection	Recover at 54V
	Discharge	Cell Voltage Protection	2.8V Alarm/2.7V Protection	Recover at 3.1V	
		Total Voltage Protection	43.2V Alarm/42V Protection	Recover at 45V	
2	Current	Charge/ Discharge	Normal	≤50A	
			Over Current Protection 1	Alarm>55A / Protection>60A	Delay 20s, recovery in every 1min
			Over Current Protection 2	>90A and <200A	Delay 3s, recovery in every 1min
			Short Circuit Protection	≥200A	Delay 300uS
3	Temp	Cell Temp	Low temp protection	Charging < -10°C Discharging < -20°C	Delay 1~2S
			High temp protection	Charging: Alarm >65°C/70°C Protection Discharging: Alarm >70°C/75°C Protection	Delay 1~2S
		PCB	High temp protection	Alarm>90°C/>115°C Protection	Recovery at 85°C
		Cell Balance	Balance	Make all cells be balance during charging process. Current: 150mA	V <sub>Max</sub> ≥3.40V and V <sub>Max</sub> - V <sub>Min</sub> ≥40mV, Start balance
Balance					

Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish. All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.

## Battery Status.

- 1. Stop/Transport Mode.** In working mode, press Start/Stop button, Battery will go to STOP mode with low self-discharge. In STOP mode, charging MOS and discharging MOS are open, battery cannot charge, discharge or communicate.
- 2. Working Mode.** In STOP mode, connect the battery to SMPS, press Start/Stop button, battery will go to working mode. In working mode, BMS will monitor battery voltage, current, and temp, and communication is available, charging MOS and discharging MOS are closed, Battery will operate as the settings.
- 3. Sleep Mode.** After turn on the battery, if the battery voltage below low voltage protection, BMS will go to sleep mode in 1 minute. In sleep mode, charging MOS and discharging MOS are closed, BMS will check the current in every 1 min, if there is charging current connecting, battery will turn to working mode.
- 4. Error Mode.** In working mode, if there is: ①. Battery cells,  $\Delta U > 1V$ , or ②. Any cell voltage  $> 3.9V$  or  $< 2.3V$ , or ③. Battery temp is  $< -20^{\circ}C$  or  $+75^{\circ}C$ . BMS will go to error mode, ALM will bright and other LED will shut down, and go to STOP mode, charging MOS and discharging MOS are open. Need to make troubleshoot.

## Performance Curve.

