

## V-LFP48100

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

### Overview

The V-LFP48100 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-LFP48100
Nominal Voltage		48 V
Nominal Capacity (@25°C, 0.2C)		100 Ah
Number of cell		15 cell
Battery Weight (Approximate)		42.8±0.3Kg
Dimensions (W*D*H)		Width*Depth* Height 440mm*480mm*177mm
Energy	Normal energy (@25°C, 0.2C)	4800Wh
	Volumetric energy density	128Wh/L
	Gravimetric energy density	112Wh/kg
Cell	Cell model	LFP36130200-100Ah
	Cell Voltage (Nominal)	3.2 V
	Cell Capacity (Nominal)	100 Ah
Internal Impedance (@25°C, 50%SOC)	(Max, at 1000Hz.)	≤20mΩ
Standard Discharge @25°C	Max. constant current	100A
	Cut-off voltage	42V
Standard charge @25°C	Charging Voltage Limited	54V
	Max. constant current	100A
	Recommended charging current and time	20A(0.2C) for 5.2 hours
Round trip efficiency (%)		>96%
Calendar life	25°C	>12 years
Cycle life (@25°C, 0.2C)		80% DOD 4000 cycles
Operating temperature	Charging: 0°C ~ 55°C	
	Discharging: -10°C ~ 55°C	
Storage temperature		Recommended range: 0°C ~ 45°C
Counting function of working time when over temperature		YES
Maintain port		YES
Anti-theft		Customization screw

## BMS Parameters.

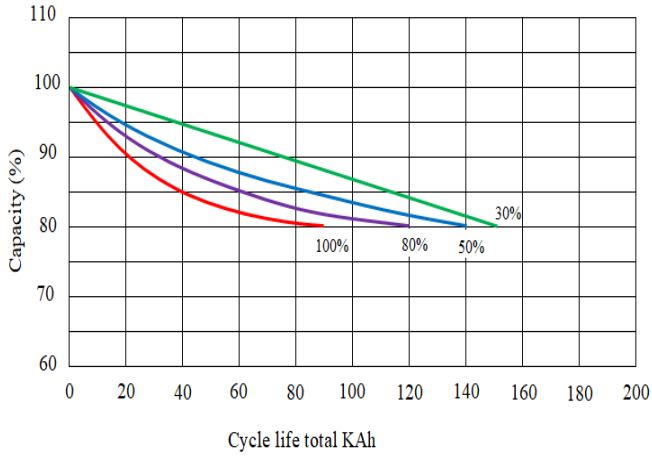
N O.	Type		Function	Setting value	Remarks
				V-LFP48100	
1	Voltage	Charge	Cell Voltage Protection	3.7Alarm/3.8V Protection	Recover at 3.6V
2			Total Voltage Protection	56Alarm/57V Protection	Recover at 54V
3		Discharge	Cell Voltage Protection	2.8Alarm/2.7V Protection	Recover at 3.1V
4			Total Voltage Protection	43.2Alarm/42V Protection	Recover at 45V
5	Current	charge	Normal	$\leq 100A$	
6		Discharge	Normal	$\leq 100A$	
7			Over Current Protection 1	Alarm $> 110A$ / Protection $> 120A$	Delay 20s ,recovery in every 1min
			Over Current Protection 2	$> 150A$ and $< 300A$	Delay 3s ,recovery in every 1min
8			Short Circuit Protection	$\geq 300A$	Delay 300uS
9	Temp	Cell Temp 1	Low temp protection	Charging $< -10^{\circ}C$ Discharging $< -20^{\circ}C$	Delay 1~2S
10		Cell Temp 2	High temp protection	Charging: Alarm $> 65^{\circ}C/70^{\circ}C$ Protection Discharging: Alarm $> 70^{\circ}C/75^{\circ}C$ Protection	Delay 1~2S
11		PCB	High temp protection	Alarm $> 90^{\circ}C / > 115^{\circ}C$ Protection	Recovery at $85^{\circ}C$
12	Cell Balance	Balance	Make all cells be balance during charging process. Current: 150mA	$V_{Max.} \geq 3.40V$ and $V_{Max.} - V_{Min.} \geq 40mV$ , Start balance	All cell voltages $< 3.4V$ or $V_{Max.} - V_{Min.} \leq 40mV$ , or discharge Stop balance

## Battery Status.

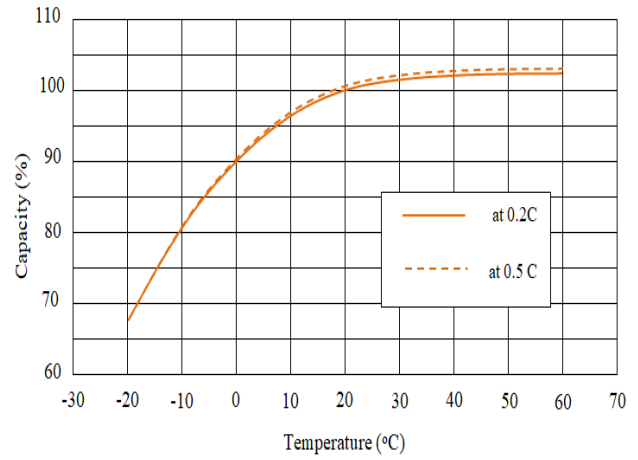
- Stop/Transport Mode.** In working mode, press Start/Stop button, Battery will go to STOP mode with low self-discharge. In STOP mode, charging MOS and discharging MOS are open, battery cannot charge, discharge or communicate.
- Working Mode.** In STOP mode, connect the battery to SMPS, press Start/Stop 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.
- 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.
- 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.

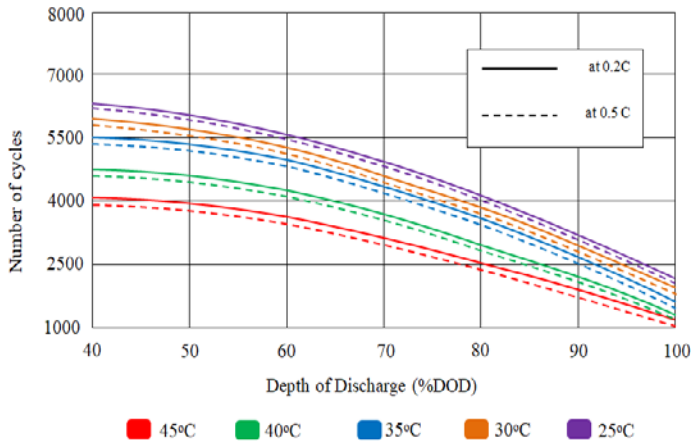
Cycle life total capacity with DOD at 25°C



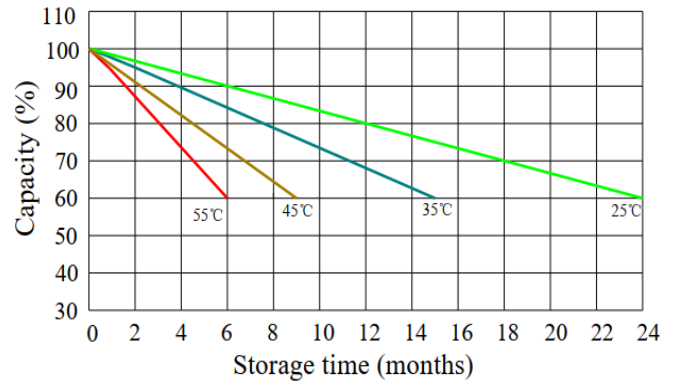
Temperature effects on capacity



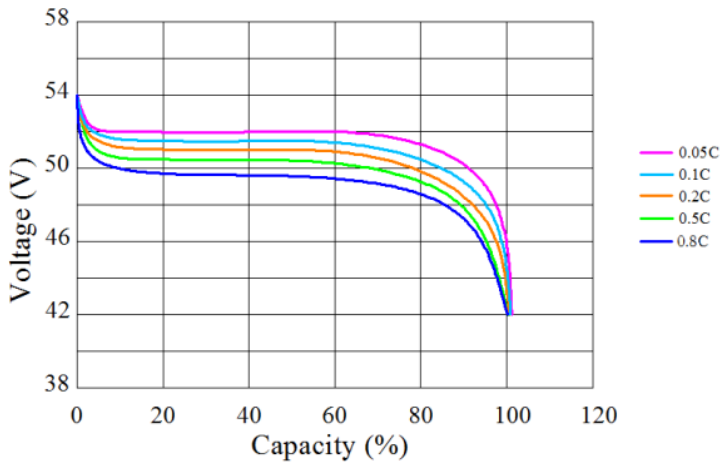
Cycle life versus depth of discharge and temperature



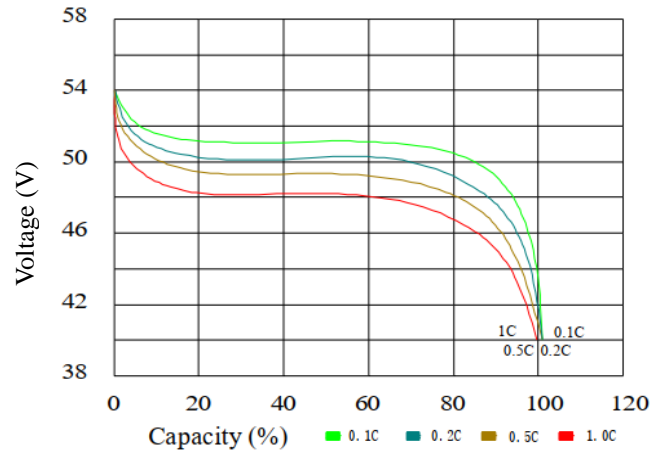
Self-discharge at different temperature



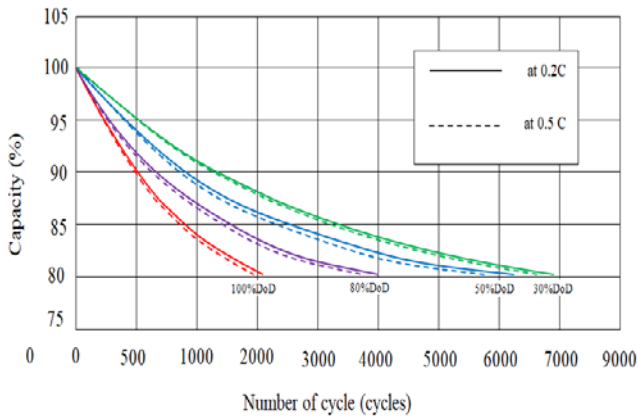
Discharge Performance at 25°C



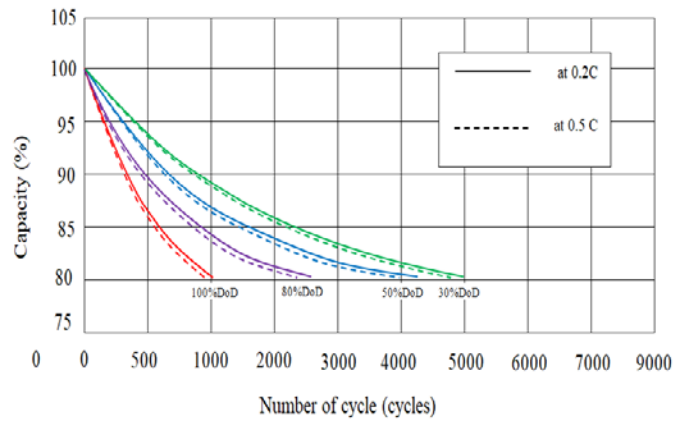
Discharge Performance at 45°C



Cycle life with DOD at 25°C



Cycle life with DOD at 45°C



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.