

# AL12105FTBT Product Data Sheet

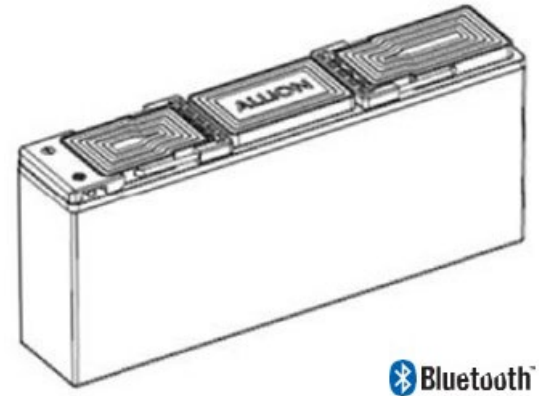
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## Technical Information

The ALLiON AL12105FTBT Lithium Iron Phosphate battery is a high performing 12V Deep Cycle battery with Bluetooth technology. Suitable for RV & leisure applications, the ALLiON range of Lithium batteries are much lighter than comparable lead acid batteries and can last up to 4 times as long. The slim design allows this battery to be installed in spaces with limited width. They are also safe to use thanks to the integrated Battery Management System. The IP54 rating means that these batteries should be protected from direct exposure to water and dust.



## Features and Benefits

- Up to 4x longer life compared to lead acid batteries
- More usable capacity & greater efficiency
- Lightweight
- Faster recharging
- IP54 rated case

Applications
RV, Caravan & Leisure
Industrial Equipment
Solar

Item	Characteristic	Specification	
1.1	Nominal Capacity	105Ah	
1.2	Nominal Energy	1.344 kWh	
1.3	Nominal Voltage	12.8V (LiFePO <sub>4</sub> 4S)	
1.4	Internal Impedance	≤ 30mΩ @ 1kHz AC	
1.5	Nominal Charge Voltage	14.6 ±0.2V	
1.6	Float Charge Voltage (for stand-by use)	13.8 ±0.2V	
1.7	Maximum charge current	80A @ 25°C ±5°C initial temp., 100A for 30 min	
1.8	Recommended charge current	≤50A	
1.9	Maximum discharge current	80A @ 25°C ±5°C initial temp., 100A for 30 min	
1.10	Discharge cut-off voltage	9.5V - 10.5V	
1.11	Dimensions (L x W x H), ±2mm	553mm x 110mm x 239mm	
1.12	Nominal Weight	13kg	
1.13	Bluetooth Connectivity	Yes, via ALLiON App	
1.14	Operation Temperature	Charge	0°C to +45°C
		Discharge	-20°C to +60°C
1.15	Self-discharge	Residual Capacity	≤ 3% /month, ≤ 15% /year
		Recover Capacity	≤ 1.5% /month, ≤ 8% /year
1.16	Storage Environment	≤ 1 month	-20°C to +60°C, 5% to 75% RH
		≤ 3 months	-10°C to +45°C, 5% to 75% RH
		Recommended	+15°C to +35°C, 5% to 75% RH
1.17	Parallel connection of up to 4 batteries is supported by the BMS. For series connection, up to 4 batteries can also be connected but CAUTION must be taken. Individual battery voltages must all be kept within a 0.2V range, and the minimum voltage must be limited to 11.5V. Combinations of parallel and series connection are not supported. Failure to comply may void warranty.		

Item	Characteristic		Specification
2.1	High Voltage ( $V_{max}$ )	High voltage protection	3.75V $\pm$ 0.05V
		Reset voltage	3.60V $\pm$ 0.05V
		Reset trigger	Below reset voltage
2.2	Low Voltage ( $V_{min}$ )	Low voltage protection	2.50V $\pm$ 0.05V
		Reset voltage	2.80V $\pm$ 0.05V
		Reset trigger	Begin charging
2.3	Over-current ( $I_{max}$ )	Maximum charge current protection	110A $\pm$ 10A / 20s
		Charge current protection reset	Discharge or auto reset after 60s
		Maximum discharge current protection	110A $\pm$ 10A / 20s
		Discharge current protection reset	Charge or auto reset after 60s
		Short circuit protection	Do not short circuit.
2.4	Temperature	Over temperature protection	Protect 65 $\pm$ 5 $^{\circ}$ C, Reset 50 $\pm$ 5 $^{\circ}$ C
		Under temperature protection	Protect -10 $\pm$ 5 $^{\circ}$ C, Reset 0 $\pm$ 5 $^{\circ}$ C
		MOSFET over temperature protection	Protect 103 $\pm$ 10 $^{\circ}$ C, Reset 65 $\pm$ 10 $^{\circ}$ C

## Product Safety

### 1. Storage & Transport

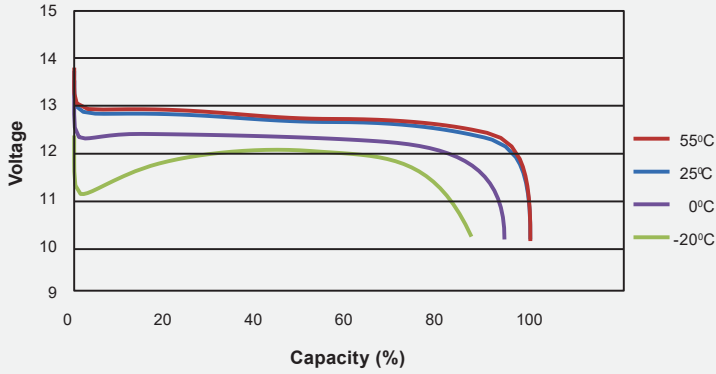
The battery must be charged using the Standard Charge Process every 6 months if not in use.  
 Do not drop the battery.  
 Maximum stacking quantity (height) is 6 batteries.  
 The battery must be kept upright at all times.

### 2. Product Warnings

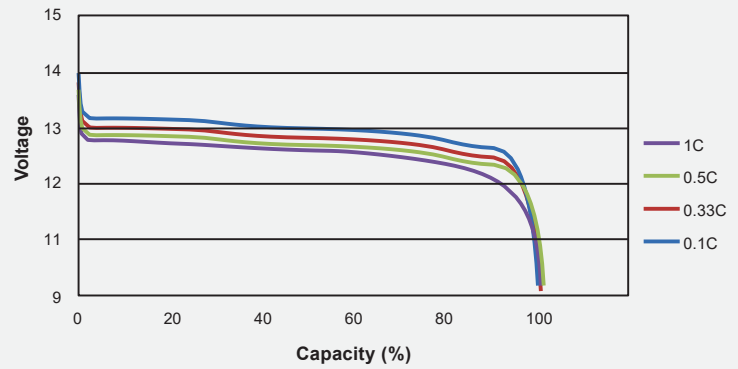
Please read and follow the handling instructions before use. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery. The manufacturer is not responsible for any accidents caused by misuse or poor maintenance.

- Do not store or use battery near heat source.
- Do not install in vehicle engine bay.
- Do not expose battery to direct sunlight for extended periods.
- Do not connect battery to high voltage.
- Do not place battery in water or fire.
- Always check polarity before connecting the battery.
- Do not short circuit battery.
- Do not expose the battery to impact or crushing force.
- Do not disassemble the battery.
- Do not install or connect this battery with different battery types.
- Protect battery from high temperatures. High temperatures may result in fire or loss of battery function and service life.
- Do not allow the battery to remain discharged. Re-charge battery when discharged.
- Use the correct battery charger for this battery.
- If battery emits an unusual odor, becomes hot or the case has distorted, stop using the battery immediately
- If eyes or skin are exposed to liquid leaking from the battery, rinse it with clean water and seek medical advice immediately.

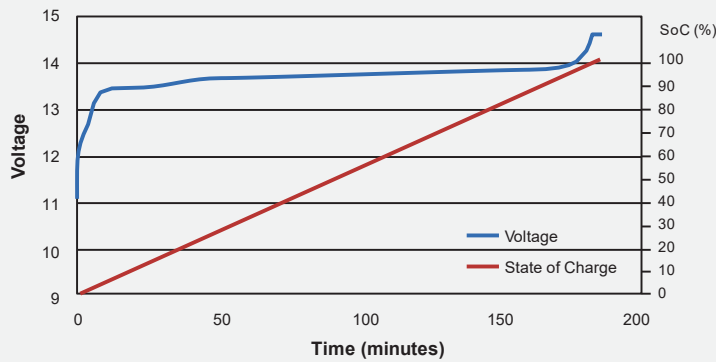
Discharge voltage at various temperatures @ 0.5C



Discharge voltage at different rates



Voltage & State of Charge (SoC) @ 0.33C charge rate



Cycle Life vs Depth of Discharge (DoD) @ 0.2C discharge

