

# ALLiON

LITHIUM BATTERIES



## USER MANUAL

AL4830-GC2

**48V 30Ah LiFePO<sub>4</sub> BATTERY**

**Included in the package:**

1 x AL4830-GC2 Battery

1 x CAN Communication Cable

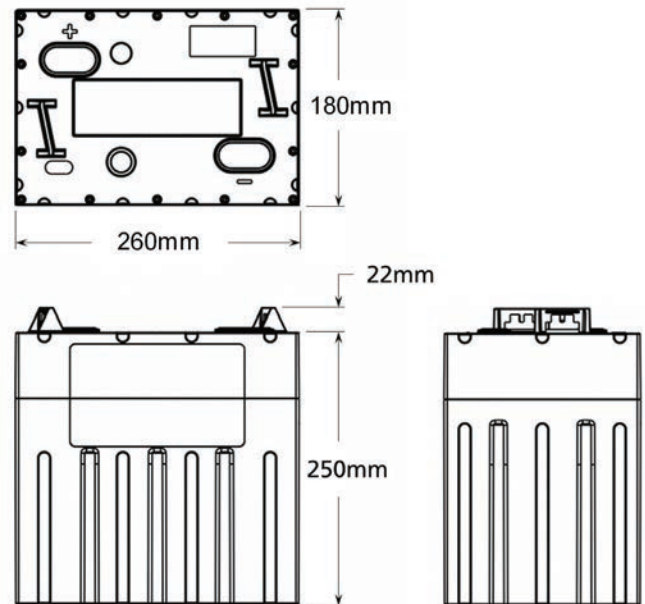
1 x User Manual

## Introduction

The ALLiON AL4830-GC2 is a high performance, 48V deep cycle Lithium Iron Phosphate (LiFePO<sub>4</sub>) battery with a capacity of 30Ah. This battery has been designed as a lightweight, high cycle replacement for deep cycle lead acid batteries used in 48V applications such as electric golf carts, recreational vehicles and commercial equipment.

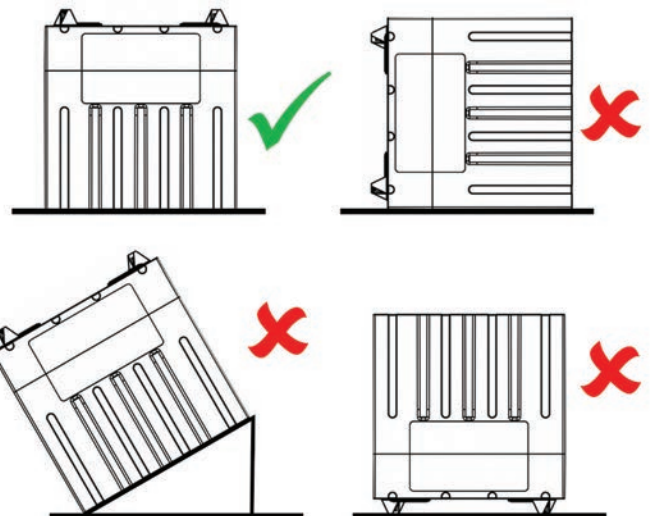
A remote CAN based battery monitor (AL4830-GAUGE) is available as an optional accessory to enable remote monitoring of the battery status. The integrated Battery Management System (BMS) ensures that battery operation is safe and reliable over the life of the battery.

It is important that you read this User Manual before attempting to install the battery to ensure you understand the safe operation of this battery. Failure to do so may void your warranty.



## Warnings & Safety

- Read this manual carefully before installing or using the product
- Keep the manual in a safe place so it can be referred to as required
- Any damage or injury as a result of misuse is the responsibility of the user
- The information in this manual is subject to change without notice
- Do not short circuit the battery
- Do not disassemble the battery
- Do not drop the battery
- Do not store or use battery near a heat source
- Do not connect battery to high voltage
- Do not expose battery to water or fire
- Always check polarity before connecting battery
- Do not use excessive force when attaching wires to battery terminals
- Do not expose the battery to impact or crushing force
- Do not allow the battery to remain discharged
- The battery must be installed in an upright position
- The battery must be positively retained when installed to prevent damage or short circuit
- Ensure the correct battery charger is used for charging
- If battery emits an odour, or the case becomes hot or distorted, stop using the battery
- If eyes or skin are exposed to liquid leaking from battery, wash with water and seek medical advice



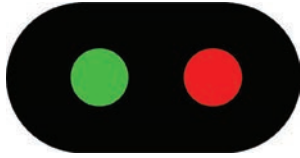
*Note: Battery must be installed in an upright position*

## LED Status Indicator

The LED Status Indicator consists of a red and a green LED.

The red LED is used to indicate a fault, and is not illuminated during normal operation.

The green LED is used to indicate the State of Charge (SoC) of the battery:



SoC	Indicator
0% - 20%	On 0.3s / Off 0.7s
20% - 90%	On 1s / Off 1s
90% - 100%	On constant

## Charging

It is important that the battery is kept within the nominated temperature when being charged. A suitable charger with specific lithium battery settings must be used to ensure safe and reliable charging.

Maximum Charge Voltage	57.6V
Float Voltage	54.4V
Recommended Charge Current	0.3C (9A)
Maximum Charge Current	1C (30A)
Battery Temperature (Charging)	0°C – 45°C

## Connecting Multiple Batteries in Parallel

Up to ten AL4830-GC2 batteries can be connected in parallel. When connecting batteries in parallel, ensure the voltage of all batteries is within 2V. The wire used to connect the batteries must be sized correctly to ensure it will support the maximum current flow of the device. It is good practise to use wire which one size larger than required to minimize any voltage drop.

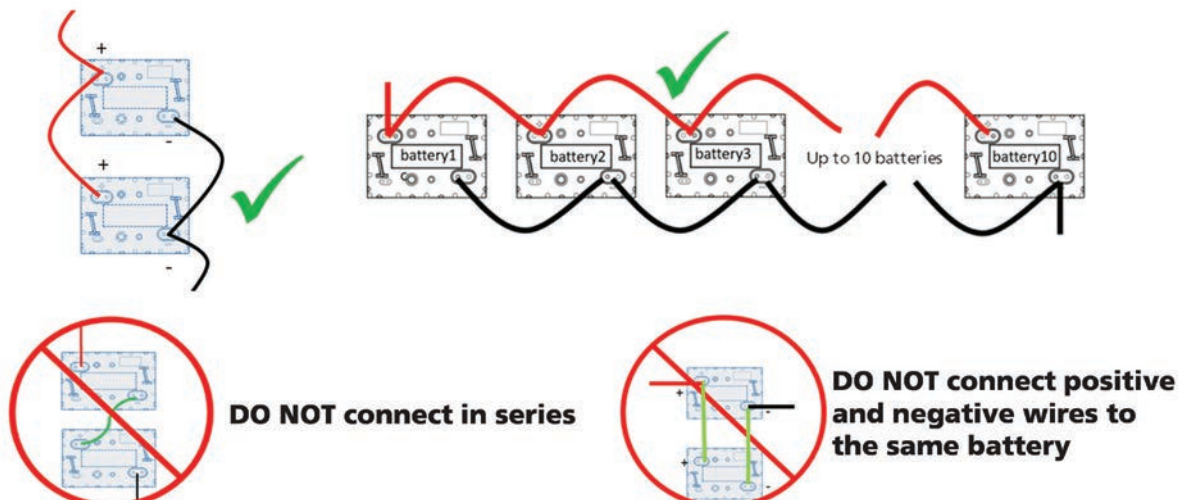
Do not connect the batteries in series.

The charging leads and power connection to the device must be connected at opposite ends of the parallel network. This ensures any voltage drop from the connecting wires is balanced, and ensures that power delivery and charging current is balanced across all batteries.

## Power Switch

The ALLiON AL4830-GC2 is equipped with a power switch on the top of the battery.

When the batteries are not being used for an extended period of time, it is recommended that the batteries be switched off to eliminate any quiescent drain which may discharge the battery.



Characteristic		Specification
Nominal Capacity		30Ah
Nominal Energy		1.536kWh
Nominal Voltage		51.2V
Internal Impedance		≤ 50mΩ @ 1kHz AC
Nominal Charge Voltage		55.2 – 57.6V
Float Charge Voltage		54.4V
Maximum Charge Current		30A (1C)
Recommended Charge Current		9A (0.3C)
Maximum Continuous Discharge Current		60A (2C)
Maximum Peak Discharge Current		65A for 30 seconds, 100A for 10 seconds
Discharge Cut-Off Voltage		44.8V
Cycle Life		6000 cycles @ 80% DoD (25°C)
Dimensions (L x W x H), ±2mm		260mm x 180mm x 272mm
IP Rating		IP67
Case Material		ABS = PC / UL94-V0
Nominal Weight		15.5kg
Communication		CAN / RS485
Bluetooth Connectivity		External module, available Q4, 2023
Operating Temperature	Charge	0°C to +45°C
	Discharge	-20°C to +65°C
Self Discharge		≤ 3% /month, ≤ 15% /year
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

Product Features	
1	Pressure Relief Valve
2	Positive Terminal
3	LED Indicators
4	CAN Port
5	Negative Terminal
6	CAN Port
7	Power Switch

