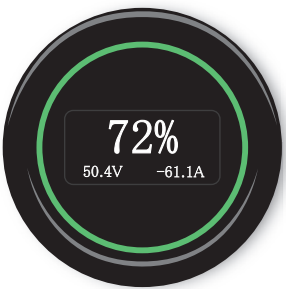
ALLiON
LITHIUM BATTERIES



USER MANUAL

AL4830-GAUGE

ALLiON BATTERY MONITOR

Included in the package:

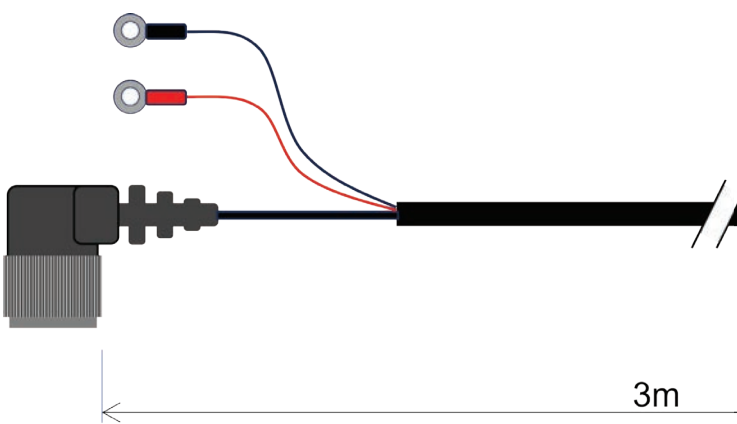
1 x Battery Monitor
1 x CAN Communication & Power Cable (3m)
1 x CAN Termination Connector

Introduction

The ALLiON AL4830-GAUGE Battery Monitor communicates directly with the Battery Management System via the CAN (Controller Area Network) to display battery status information for the ALLiON AL4830BT.

The information displayed is as follows:

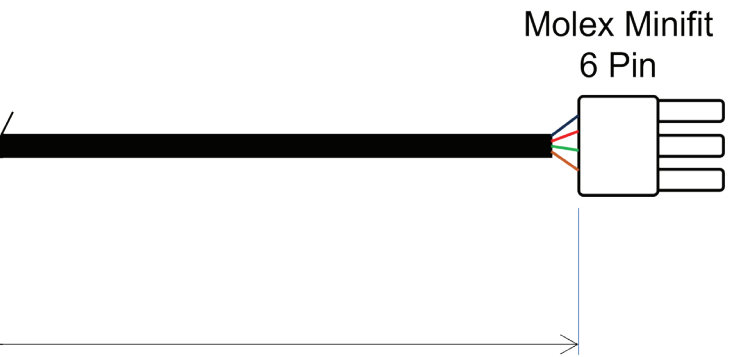
- State of Charge (%)
- Battery Voltage (V)
- Current Flow (A)



CAN Communicati

AL4830-GAUGE Specifications

Voltage Range	9-72V DC
Power Consumption	0.3W
Baudrate	125Kbits/s
Display Size	1.3 inch OEL display
Display Resolution	128 x 64
Operating Temperature	-40°C to 85°C
IP Rating	IP65

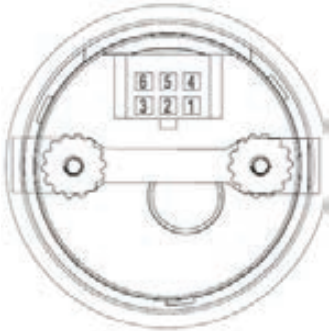


on & Power Cable

Rear Connector Pins

The battery monitor uses a Molex Minifit 6 pin connector on the rear of the case to connect to the battery.

The pins are defined as follows:



Pin	Name	Description
1	+B	Positive Power Supply (9-72V DC)
2	Ground	Negative Power Supply
3	CAN L	CAN communication - low signal
4	CAN H	CAN communication – high signal
5	CAN T	Terminator (120Ω resistor)
6	CAN HT	Terminator (120Ω resistor)

Operation

The battery monitor will display the battery status information with a green or red ring around the bezel. Green indicates that the battery operation is normal. As the battery discharges a number of low voltage alarms may be triggered. When an alarm is triggered, the green ring will change to red, and the alarm code(s) will display.

Alarm Codes

The ALLiON AL4830-GC2 lithium battery is equipped with an intelligent BMS which can effectively protect the battery cells to ensure optimum performance and safety. The BMS will report some alarms via the CAN Battery Monitor however many of these are associated with a low State of Charge or charging issues. The alarm information does not necessarily indicate a battery malfunction. The table below provides additional information for the alarm codes which can be displayed.

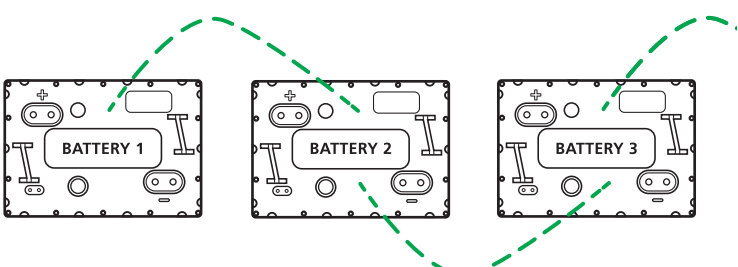
Alarm #	Description	Explanation / Action
Alarm 1	High Voltage – Single Cell	Charging almost completed
Alarm 2	Low Voltage – Single Cell	Battery requires charging
Alarm 3	High Battery Voltage	Charging almost completed
Alarm 4	Low Battery Voltage	Battery requires charging
Alarm 5	Large Cell Voltage Difference	Charge battery at less than 0.5C
Alarm 6	Overcurrent – Discharge	Reduce load
Alarm 7	Overcurrent – Charge	Reduce charging current
Alarm 8	High Temperature	Reduce load or move from heat source
Alarm 9	Low Temperature	Battery must be above 0°C
Alarm 10	Large Cell Temperature Difference	Check battery connections
Alarm 11	Low State of Charge	Battery requires charging
Err	Abnormal Communication	Check battery CANBUS connectors

Connection

The schematic diagram below shows the connector configuration required for the Battery Monitor to function.

Note:

- Before installation, turn off all batteries in the network.
- Connect the CAN Communication & Power Cable to the first battery in the network
- Connect the positive (red) and negative (black) power wires directly to a battery in the network.
- Connect the CAN Termination connector (supplied) to the last battery in the network.
- Ensure correct alignment of multipin CAN connectors. Do not force the connectors as this may damage them.

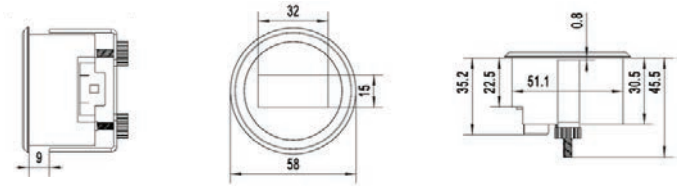


Battery Monitor Conn

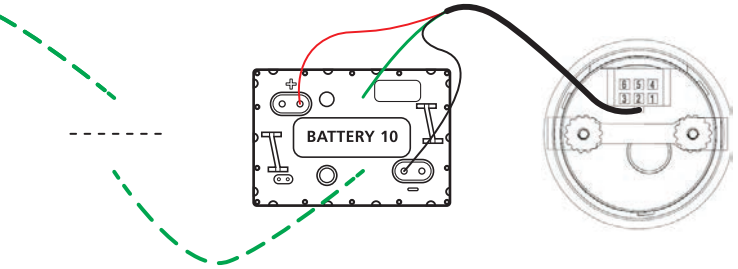
Mounting the Controller

The ALLiON Battery Monitor is designed to be installed in a flat plate with a thickness of 1-9mm.

The recommended hole diameter for mounting is 52-55mm.



AL4830-GAUGE Battery Monitor Dimensions (mm)



nection Configuration

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 use input voltages which are outside of the specified range.
- The device should be installed by a professional technician.
- Do not disassemble the battery monitor.

For any product questions, please contact your nearest R&J Batteries branch.

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