SJSU

Robotics

Ryobi 40V 4Ah Lithium Ion Battery Power Supply for Rover Drive and Arm

Data Sheet	SJSU-IB2022

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Features

On Board Protections (BMS):

- Over voltage
- Under voltage
- Over current
- Over temperature

On Board Battery Level Indicator

Applications

This battery will be used as a power supply for the rover drive and arm assemblies instead of LiPo batteries.

General Description

2 separate solo batteries will be used for the arm and drive. Each battery is more than capable of running each assembly on its own(voltage, current, and capacity wise).

The advantage of using this system is that it is easily detachable and mountable, has all the needed safety features built-in and is easy to obtain. Storage, charging and operation is easier and safer than the LiPo battery.

Charging is being taken care of by a proprietary Ryobi charger.

A breakout board or wires can be connected to the positive and negative terminals of this unit. Most preferably, a 3D printed base will be used as a base for quick attach/detach.
Example: Pre-fabbed part.
Modifications might have to be made to the rover power system before using this unit as power.

Overview Pictures

Figure 1: Front of battery

Figure 2: Back side of battery

Block Diagram

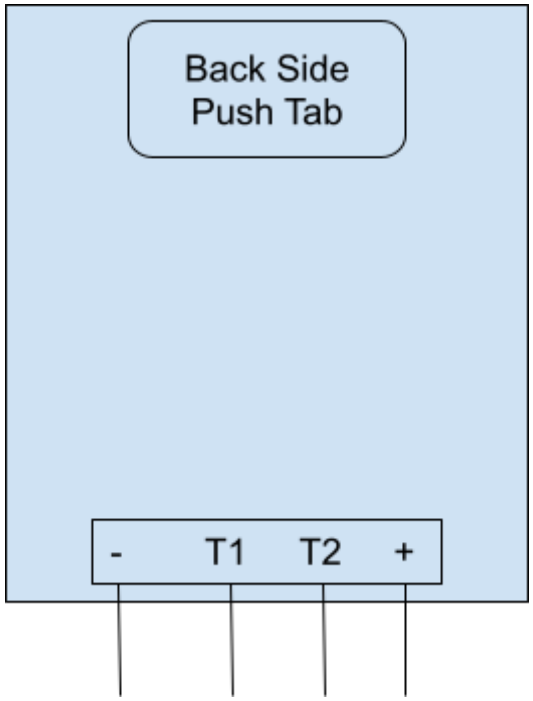

Figure 3: General Use Block Diagram

- : Negative terminal.
T1: Data/temperature I/O for proprietary charger/tool.
T2: Data/temperature I/O for proprietary charger/tool.
+ : Positive terminal.

Note: There is little to no information online on what T1 and T2 are exactly used for. Most probably, they are used for charging management. One of them might be a thermistor (for charging temperature control) and the other might be data i/o for the charger. This is not an issue; all we need are the positive and negative terminals which are labeled and accessible by us.

Specifications

Nominal Voltage: 40V
Capacity: 144Wh - 4Ah
Current Range: 30A
Internal battery configuration:
10S2P
Cell info: LGDAHA11865