S10 Sleeve Technical Description

SK - 9/18/2019

Introduction

This document is meant to describe the inner working of the S10 sleeve module.

Purpose

The JUMP battery pack can be inserted into the S10 sleeve, which will act as the housing mechanism to charge the battery.

The purpose of the LED on the front of the S10 sleeve is to indicate the charge SoC status of the JUMP pack.

The purpose of the hall effect switch which is activated by a magnet built into the latch assembly, is to gracefully stop charging and turn off the battery before it is removed from the sleeve.

The purpose of the two connectors are 1) accepts the output of the charger power 2) other connector transfers signals + power to the rear holster PCBA.

Hardware

The S10 Sleeve contains two PCBA's. The first PCB assembly (LED board) is located at the front of the sleeve and primarily contains an LED, power and signal connectors, and hall effect sensor – used as a switch. The second PCB assembly (Holster board) is located at the back of S10 and is the wireless NFC link between the batteries internal BMS and the logic on the holster board.

LED communicated via CLK, DATA, 5V and GND which comes from the holster board.

The switch sends a logic low transition when the latch is pressed. Hall sensor sends out a logic low signal when latch is depressed (magnet over the hall sensor). Switch GPIO pin is pulled up to 3V3 inside the holster board.

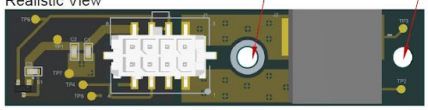
Two pin barrel jack, 2.1mm (ID) x 5.5mm (OD) is the 41V5 input of the charger at 3.6A max.

The wire harness from the front LED board to the back holster board consist of 7 wires.

41V5, RTN, 5V, GND, CLK, DATA, SWITCH_GPIO

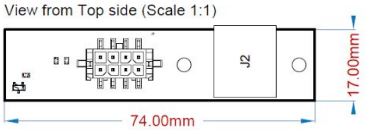
S10 EVT LED PCB - REVA

Realistic View

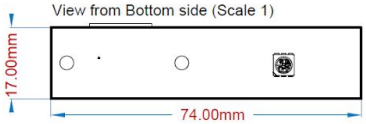


Realistic View

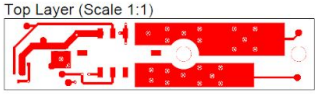
View from Top side (Scale 1:1)



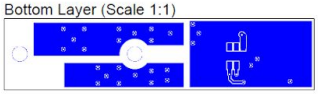
View from Bottom side (Scale 1)



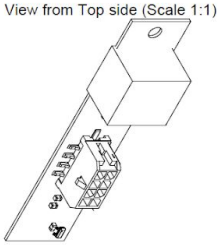
Top Layer (Scale 1:1)



Bottom Layer (Scale 1:1)



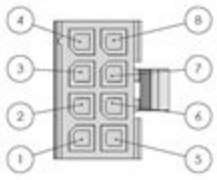
View from Top side (Scale 1:1)

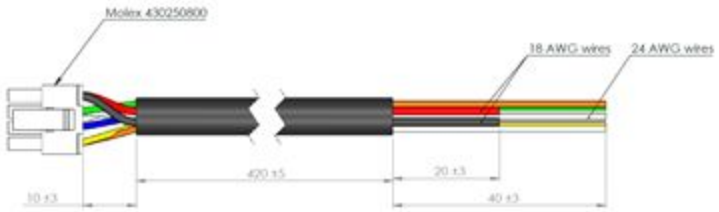


Bill Of Materials

Line #	Designator	Comment	Quantity
1	C1	1UF 16V	1
2	C2, C3	0.1UF 16V	2
3	D1	5x5mm LED	1
4	J1	Molex MicroFit	1
5	J2	2.5x5.5mm Barrel Jack	1
6	S1	DRV5033AJ(6.9/3.5mT)	1

REV	DESCRIPTION
A	INITIAL RELEASE
B	FIXED PART NUMBER





Connector pin	Wire gauge (AWG)	Wire color
1	18	Red
2	Empty	
3	24	White
4	24	Orange
5	18	Black
6	24	Green
7	24	Blue
8	24	Yellow

NOTES:
DRAWING IS NOT TO SCALE
Do not strip ends of wires
Wires need to be UL rated

Max insulation Diameters:
24 AWG = 1.4mm
18 AWG = 1.6 - 2.1mm

Molex Crimp (18 AWG): pn: 430300038

Molex Crimp (20-24 AWG): pn: 430300001

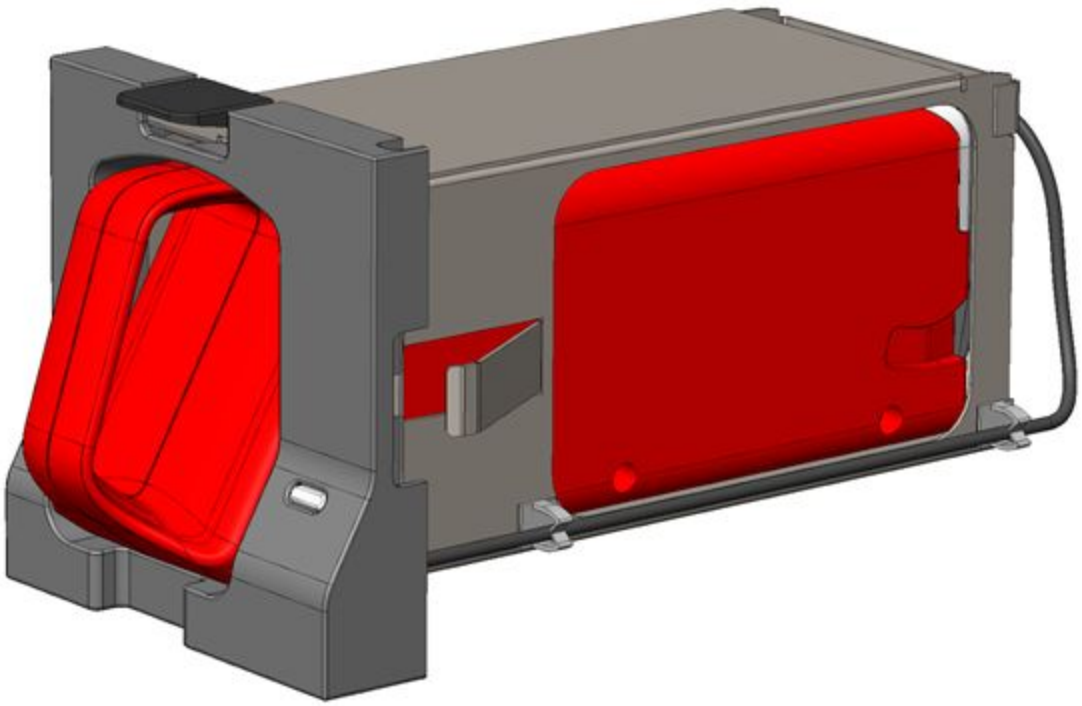
JUMP

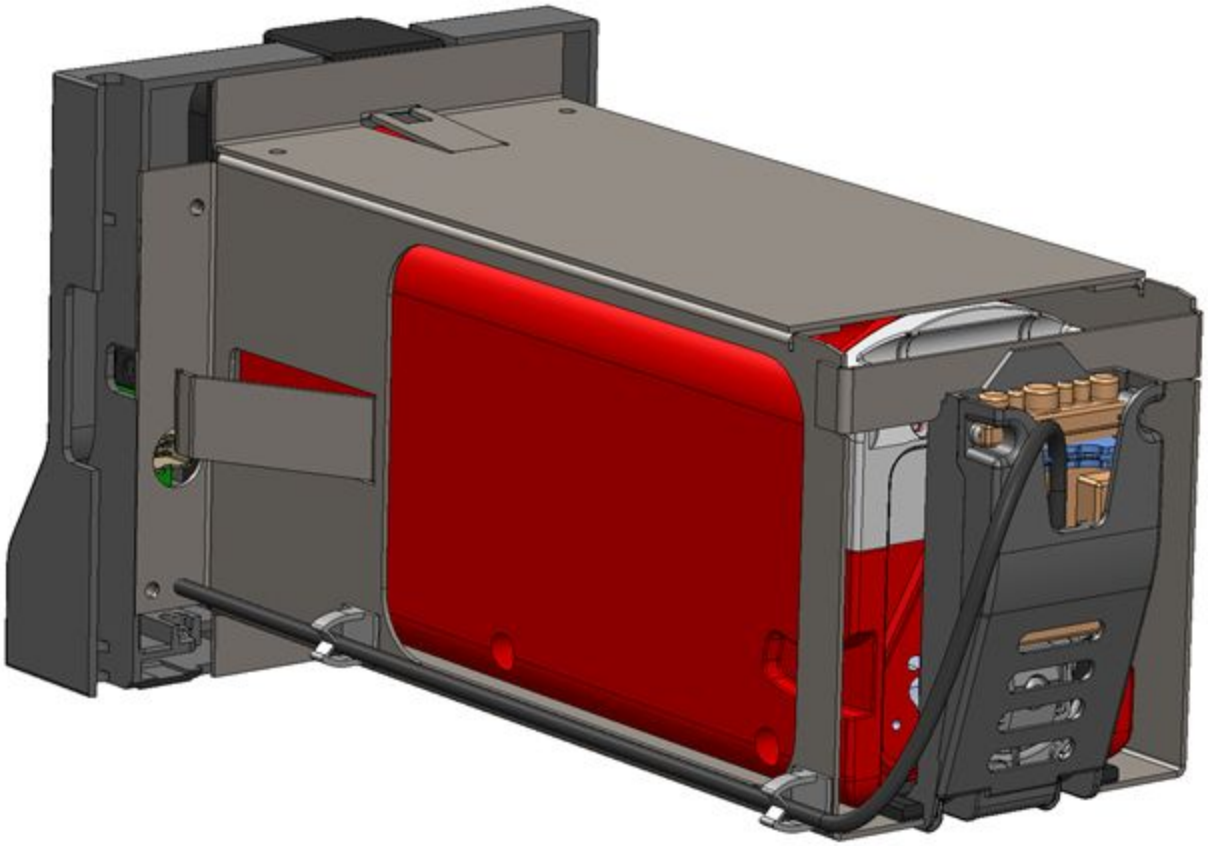
SIZE	PART NUMBER	REV
B	2007842	B

DO NOT SCALE

SHEET 1 OF 1

Pictures





FCC Statement

15.19

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

15.21

Note: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

15.105(b)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help