

Introduction

Emus BMS Top/Bot Isolators are cell communication adapters that provide optical isolation in applications where the main controller communicates directly to EMUS BMS Cell Modules. The Bot isolator connects between the main controller and the first cell of series-connected battery pack, while the Top Isolator provides isolating barrier between the last cell of series-connected battery pick and the main controller.



Applications

- Any lithium chemistry, series connected battery pack up to 80 cells

Features

- Reliable serial communication between cell modules
- TOP isolator code CCA010D
- BOT isolator code CCA020D

Mechanical Information

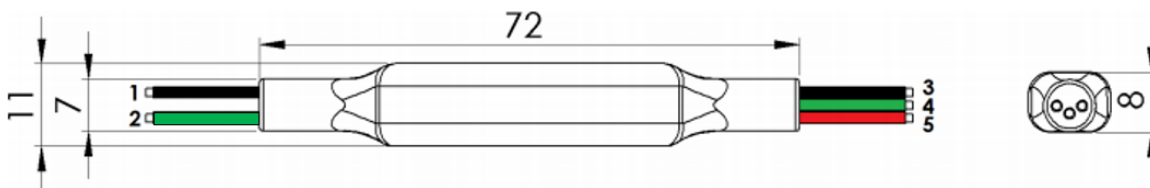


Table 1. Top Isolator wire assignment

Pin No.	Wire Color	Assignment
1	Black	CELL TX-
2	Brown	CELL TX+
3	Black	TOP CELL -
4	Green	UP
5	Red	TOP CELL+

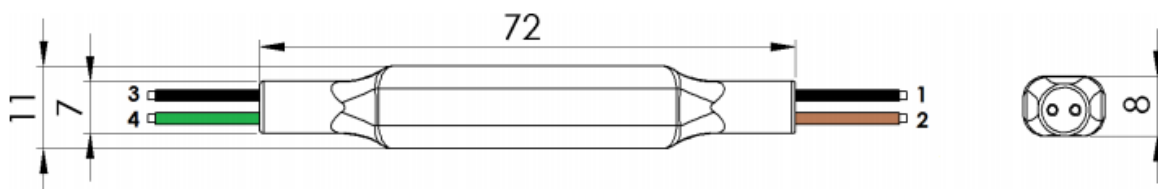


Table 2. Bottom Isolator wire assignment

Pin No.	Wire Color	Assignment
1	Black	CELL TX-
2	Brown	CELL TX+
3	Black	TOP CELL -



TOP/BOT Isolators

Product Code: CCA010D & CCA020D

Pin No.	Wire Color	Assignment
4	Green	UP
5	Red	TOP CELL+

Electrical Characteristics

Table 3. Top Isolator electrical characteristics

Assignment	Value
Isolation voltage	2.0 kV
Transient/overvoltage protection between GND and OUT	6.2 VDC
Reverse polarity protection between GND and OUT	-0.7 VDC
Transient/overvoltage protection between TOP CELL – and UP	5.6 VDC
Reverse polarity protection between TOP CELL – and UP	-0.7 VDC
Transient/overvoltage protection between TOP CELL – and TOP CELL +	5.6 VDC
Reverse polarity protection between TOP CELL – and TOP CELL +	-0.7 VDC

Table 4. Bottom Isolator electrical characteristics

Assignment	Value
Isolation voltage	2.0 kV
Transient/overvoltage protection between GND and OUT	6.2 VDC
Reverse polarity protection between GND and OUT	-0.7 VDC
Transient/overvoltage protection between TOP CELL – and UP	5.6 VDC
Reverse polarity protection between TOP CELL – and UP	-0.7 VDC
Transient/overvoltage protection between TOP CELL – and TOP CELL +	5.6 VDC
Reverse polarity protection between TOP CELL – and TOP CELL +	-0.7 VDC

Other Specifications

Table 5 Top/Bottom Isolators other specifications

Item	Value	
	CCA010D	CCA020D
Operating temperature	-40 to +85 °C	
IP rating	IP64	
Weight	13.6 g	10.5g
Wire length	0.2 m	
Wire ring terminal type	Molex 19323-0011 (recommended crimp tool Molex 64003-0100 or PRESSMASTER KWB0325S)	