# Spartan Power Dual Battery Smart Isolator

Part Number: SP-SBI12V140A




*Thank you for purchasing our dual battery smart isolator*
*Please read these instructions*

## INTRODUCTION AND INTENDED APPLICATIONS

Automatic separation and connection of the main (starting) battery in parallel with auxiliary battery according to the voltage of level of the main battery. This isolator will constantly scan the main battery voltage level for connection and charging of the auxiliary battery to the main battery for charging.

**Intended Applications**:
RV's, vans, truck campers, marine, any vehicle with second battery.

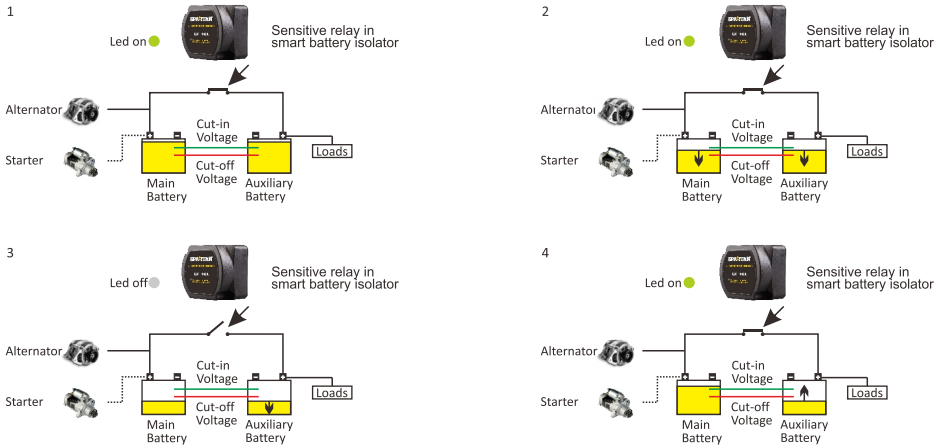
## WARNING

Never use the battery isolator in a location with possibility of gas or dust explosions.
Proper and correct connections and safety features must be followed according to local applicable regulations.
Use suitable sized cables and connectors. Use reliable terminals and torque the bolts tightly.

## FEATURES

- Designed for dual battery systems
- Suitable for most 12V charging systems
- Surge protect
- Easy to install
- Automatically sensing voltage level of main battery

## HOW DOES IT WORK




## SPECIFICATIONS

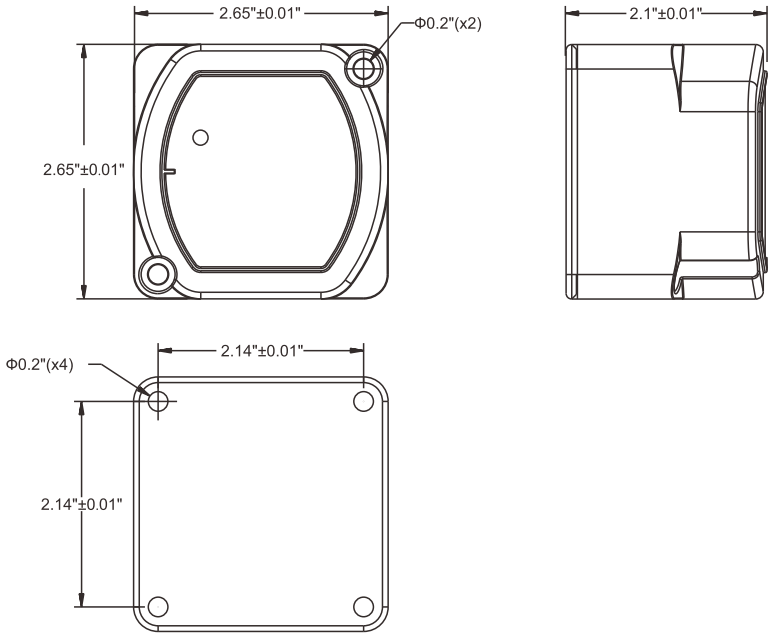
| P/N | Rating Voltage | Continuous Current | Intermittent Current | Cut-in Voltage | Cut-out Voltage |
|---|---|---|---|---|---|
| SP-SBI12V140A | 12V | 140A | 170A | 13.3V | 12.8V |
| Delay Timer | 5 seconds | | | | |
| Function | Fully Automatic Module | | | | |
| Operating Temperature Range | -22°F~221°F | | | | |
| Storage TemperatureRange | -40°F~257°F | | | | |
| Dimensions (L x W x H) | 2.65 x 2.65 x 2.1" | | | | |
| Weight | 7.05oz | | | | |

1. When the engine is started and the voltage of start battery is higher than cut-in volts, the smart battery isolator(SBI) keeps engaging, two batteries (startand house) are charged simultaneously. Unit Indicator (LED) is on.
2. When the engine is stopped, the batteries no longer have a charge from the alternator, and the loads connected with the batteries begin to deplite them. Unit Indicator(LED) is on.
3. When the voltage drops below cut-out volts for 5 seconds, the SBI senses it and disengages, separating both batteries. This can save power of your start battery from being drained by over loads on house battery. Unit Indicator(LED) is off.
4. When the vehicle restarted, the start battery has enough power to crank the engine, and the engine is powering the alternator, when the start battery has reached the cut-in volts, the SBI engaged again. Unit Indicator(LED) is on.

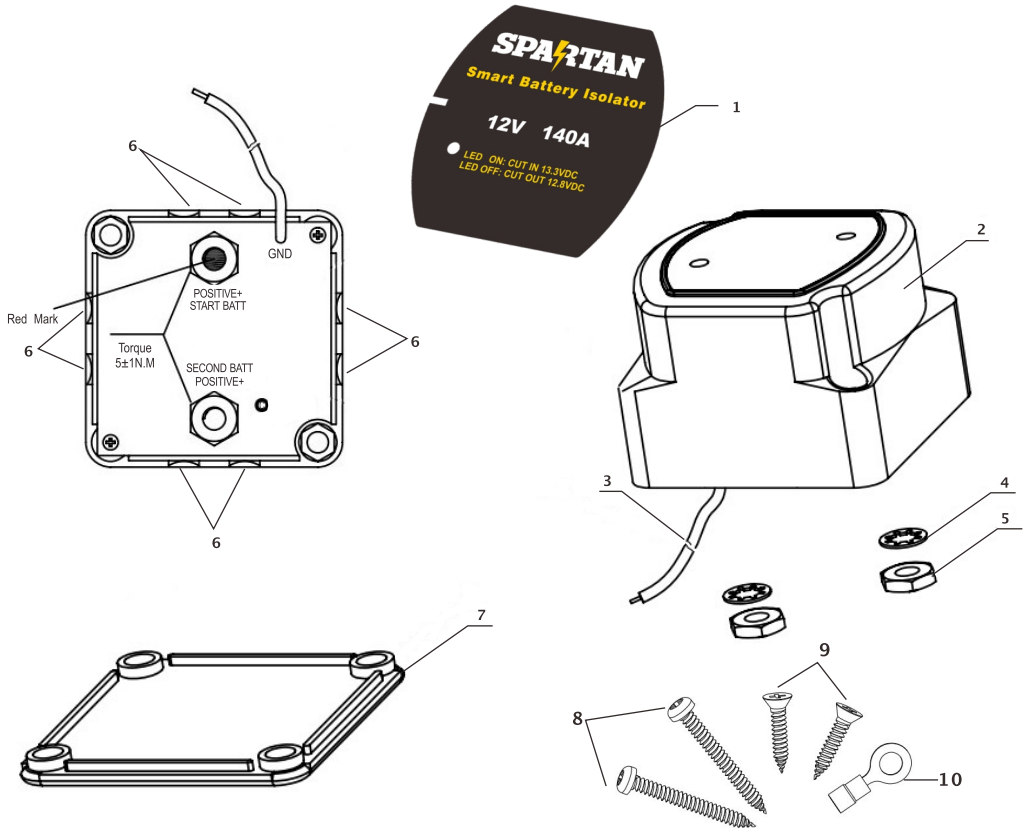
# Battery Isolator

## DIMENSIONS

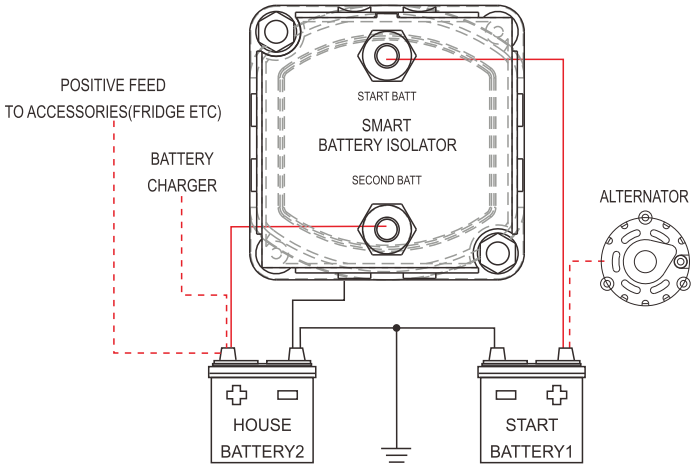
2.65 X 2.65 X 2.1"




## INSTALLATION




## WIRING DIAGRAM




Be sure to select the correct size cable refer to the voltage drop chart.

| VOLTAGE DROP CHART | | | | | |
|---|---|---|---|---|---|
| Total Cable Length (m) | Total Cable Length (ft) | amps | Voltage Drop (%) | mm² | AWG |
| 1<br>1 | 3<br>3 | 50<br>100 | 2. 30%<br>3. 0% | 4<br>6 | 11<br>10 |
| 2<br>2 | 6<br>6 | 50<br>100 | 3. 0%<br>3. 50% | 6<br>10 | 10<br>7 |
| 3<br>3 | 9<br>9 | 50<br>100 | 2. 70%<br>3. 40% | 10<br>16 | 7<br>5 |
| 4<br>4 | 12<br>12 | 50<br>100 | 3. 60%<br>2. 60% | 10<br>25 | 7<br>3 |
| 5<br>5 | 15<br>15 | 50<br>100 | 2. 80%<br>3. 30% | 10<br>25 | 5<br>3 |
| 6<br>6 | 18<br>18 | 50<br>100 | 3. 40%<br>3. 90% | 16<br>25 | 5<br>3 |
| 7<br>7 | 21<br>21 | 50<br>100 | 3. 90%<br>4. 60% | 16<br>25 | 5<br>3 |
| 8<br>8 | 24<br>24 | 50<br>100 | 2. 60% | 25 | 3 |

| ITEM | QTY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Spartan Power SP-SBI12V140A faceplate |
| 2 | 1 | House, GE material |
| 3 | 1 | Wire cable, 20AWG, black, be connected with ground |
| 4 | 2 | Internal teeth serated lock washers |
| 5 | 2 | Hexagonal nut, Brass H62 |
| 6 | 8 | Cable outlet hole which can be broken |
| 7 | 1 | Base |
| 8 | 2 | Cross screws, 1.5" length |
| 9 | 2 | Cross screws, 0.75" length |
| 10 | 1 | Ring-terminal |