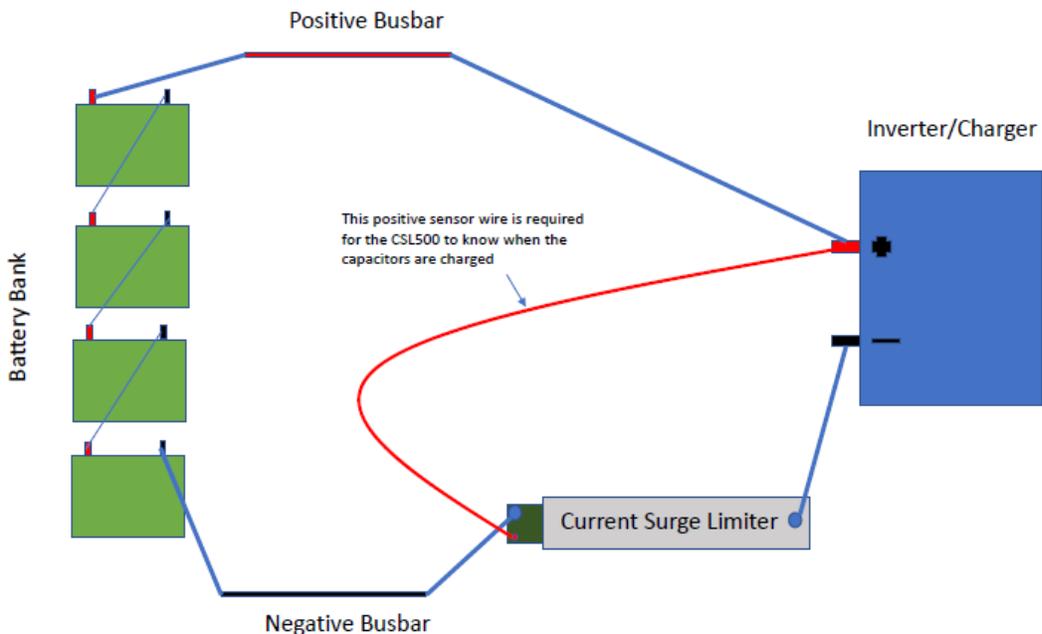


## Current Surge Limiter (CSL500) -INSTRUCTIONS

The CSL500 Current Surge Limiter is FET-based current limiting device that is to be used with Battle Born Batteries or Dragonfly Energy LiFePO4 battery packs when they are used in conjunction with large (greater than 4kW) inverter/chargers. The device is mounted permanently in series between the negative pole of the battery bank and the negative DC input terminal of the inverter/charger. The device protects the battery management system (BMS) from damage caused by the initial current spike that is created when connecting directly to the large capacitors (> 5 milliFarads) that are typically on the DC input side of the inverter/chargers. The device allows the batteries to slowly charge the capacitors (within 1 ms). This soft start avoids the high-current shutoff inherent to the BMS of the batteries.

- First, the negative battery terminal is connected to the brass bolt mounted on the thin Aluminum plate that is in contact with the circuit board on the device.
- Second, the DC input to the inverter/charger is connected to the brass bolt directly connected to the large Aluminum heat sink on the opposite side of the device. Note that both of these connections will pass the full current of the system, and therefore the cable and lug sizes must be selected accordingly. The CSL500 is designed to accommodate a continuous current of 160A.
- Finally, the third connection is made between the positive DC input of the inverter/charger to the smaller stainless steel terminal located on the thin Aluminum plate. This connection is only meant as a power source for the FETs on the circuit board and the connection cable can be smaller (16 awg is fine).

### 48V Wiring diagram:



Note: Either the negative battery terminal OR the negative DC input to the inverter/charger should be connected to an earth or chassis ground. NOT BOTH! Connecting both to ground will bypass the device.