

# PST-SSB2180/2280 Solid State Battery Isolator/Protector

## User Manual

### INTRODUCTION AND INTENDED APPLICATIONS

This series of full solid state battery isolators use a micro-processor and FETs to control the On & Off connection between the two voltage sensitive terminal posts according to preset voltage of each terminal.

It has two functions by selections:

- A. As an isolator, it allows charging of the auxiliary battery only when the main battery is fully recharged.
- B. As a battery protector (by shorting the blue wire to ground), a different threshold voltage to prevent over discharge of battery by the load.

There is no moving part in the unit which can stand harsh operating condition from -40 to 50°C.

The MCU constantly scans the voltage level of each of the two terminals for appropriate & timely On or Off connection according to its selected function (A or B).

Hysteresis & time delay programming in the microprocessor prevent or decrease rapid repeated on-off cycles due to large difference in battery capacities & battery state of charge or high initial draw of load current such as motor load. This type of oscillation or chattering as in solenoid switch is quite common in battery isolator.

There is a handy manual over-ride circuit for external switch to connect two terminals in case two batteries are required to be connected in parallel for emergency purpose.

The voltage drop and idle current consumption is much less than the diode type of battery isolator.

The unit has over voltage and short circuit protection by disconnection.

### PRECAUTIONS

Proper and correct connections and safety features must be followed according to local applicable regulations.

Use suitable sized cables and connectors and keep the cable connections as short as possible.

Use reliable terminals and torque the bolts tightly.

### INSTALLATION AS BATTERY ISOLATOR.

1. Remove all other connections to the positive battery terminal.
2. Mount the PST-SSB2180/2280 battery isolator as close as possible to the alternator, on a ventilated location.
3. Connect the black wire to the chassis (ground) of the car.
4. Connect terminal A to the positive post of the main (starting) battery.
5. Connect terminal B to the positive post of the auxiliary (second / house) battery.
6. Double check tightness of all the bolts and blue wire and yellow wire are isolated.

### INSTALLATION AS BATTERY PROTECTOR

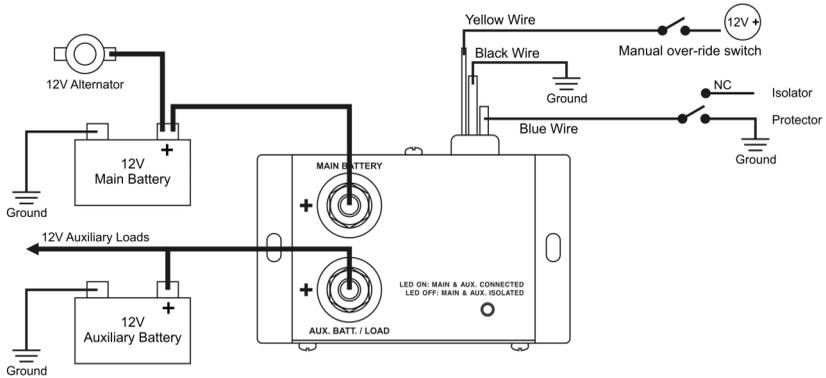
**Warning : Black wire to ground first to prevent damage to unit .**

1. Connect the black wire to ground .
2. Then connect the blue wire to ground for protector mode.
3. Connect terminal A to positive post of battery.
4. Connect terminal B to load.
5. Double check tightness of all terminal bolts and yellow wire is isolated

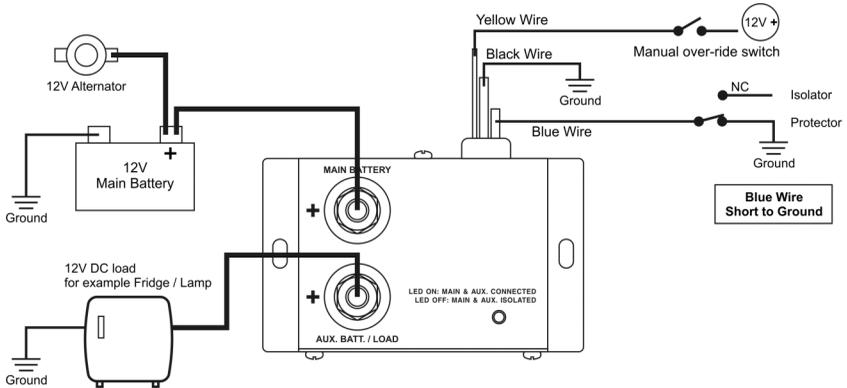
### TO UNINSTALL THE BATTERY ISOLATOR /PROTECTOR

**Warning !** \*REMOVE ALL CONNECTIONS TO TERMINAL A AND B FIRST BEFORE BLUE AND BLACK WIRES.

## TYPICAL WIRING DIAGRAM AS BATTERY ISOLATOR & MANUAL OVER-RIDE SWITCH



## TYPICAL WIRING DIAGRAM AS BATTERY PROTECTOR & MANUAL OVER-RIDE SWITCH



## SPECIFICATIONS:

	<b>SSB-2180</b>	<b>SSB-2280</b>
Battery Voltage (Main and Auxiliary)	12V	24V
Isolator Switch ON (Connect) Voltage	13.2V	26.4V
Isolator Switch OFF (Disconnect) Voltage	12.6V	25.2V
Protector Switch ON (Connect) Voltage	12.5V	25.0V
Protector Switch OFF (Disconnect) Voltage	11.8V	23.5V
Maximum Operating Voltage	15.5V	31V
OVP Voltage	16V	32V
Voltage drop (80A) between main battery and aux. batt. positive terminal	0.22V	
Idle Current Consumption	15mA	
Delay Time For Switch OFF	15 seconds	
Indication of On connection	LED is On	
Continuous Output Current	75A	
Maximum Output Current (30 Minutes)	80A	
Dimension (WxHxD)	87x67x36mm	
Working Temperature Range	-40 ~ +50°C	
Weight (Only Control Box)	200g	