



SBC-5925 12V In-Car Charger

Operation manual

Introduction

This is a DC-DC charger with 9 to 32 Volt input range and 5 selections of charging profiles for WET/ AGM/ GEL/ CAL/ LiFePO4 batteries. The specific charging profile will give your selected battery type a safe, fast and complete charge. The wide input voltage range allows 12V or 24V systems to charge your 12V auxiliary battery which can be installed a long distance from the starting battery as in a trailer / caravan.

Features

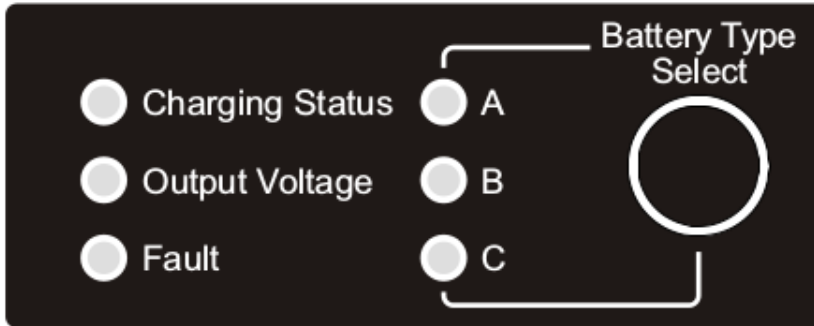
- 3 Stage charge with selection of 4 types of lead batteries.
- 2 Stage charge for LiFePO4 battery.
- Wide (9-32 V) input voltage range designed for use in any 12 or 24V Car, 4WD, Truck, Coach and Caravan electrical system.
- Auxiliary battery can be fully and efficiently charged from a long-distance charging source.
- Ignition Control enables unit to stop charging when ignition is off.
- Low Voltage Cut Off Protection for starting battery.
- Self Recoverable Input Under Voltage Protection.
- Self Recoverable Output Over Voltage Protection.
- Self Recoverable Over Temperature Protection.
- Self Recoverable Overload Protection (C.C.) with constant current at decreased output voltage.
- Supplied accessory Remote LED Indicator Module showing:
 - Battery voltage level (when no load connected to battery) or Output Voltage Level
 - Bulk/ Absorption/ Float Charging Stage for Lead Acid battery types

Protections

- Input under voltage protection
- Output over voltage protection
- Overload protection
- Over temperature protection

Indicators and Controls

LEDs indication



Charging Status LED:

For Wet/AGM/CAL/GEL battery, it uses 3 stages charging profile

Stage	Charging status LED	Charging stage
1	Fast flashing	Bulk charge or Soft-start
2	Slow flashing	Absorption charge
3	Solid	Float charge

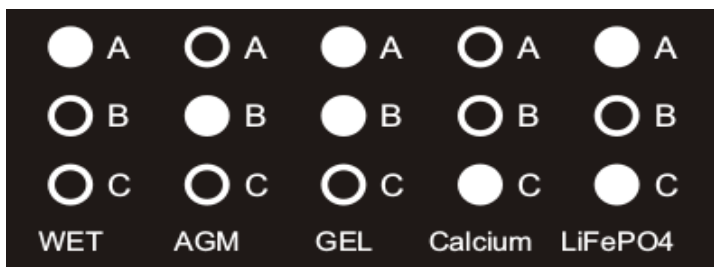
For LiFePO4 battery, it uses 2 stages charging profile

Stage	Charging status LED	Charging stage
1	Fast flashing	Bulk charge or Soft-start
2	OFF	Float charge or Stop charge

Output Voltage LED: This LED is showing the charging battery voltage status.

LED status	Battery Voltage
Fast Flashing	Battery Voltage < 12.5V
Slow Flashing	12.5V ≤ Battery Voltage ≤ 13.5V
Solid	Battery Voltage > 13.5V

A/B/C Battery type indication:



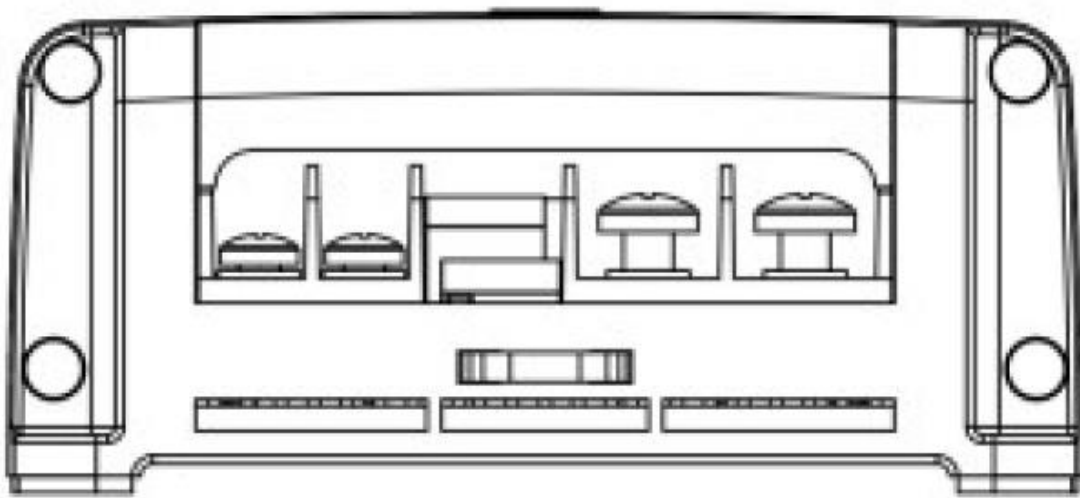
Selection of battery type:

- i) Press and hold button for around 5sec until LED flashes.
- ii) Press button to select battery type. Flashing LED will move to selected battery type. It will scroll from A → B → A+B → C → A+C → A → B → and so on.
- iii) Wait for around 10 seconds and the LED will stop flashing. The battery type is selected.

Fault LED: Indicates that there is no input voltage or there is a fault in the unit.

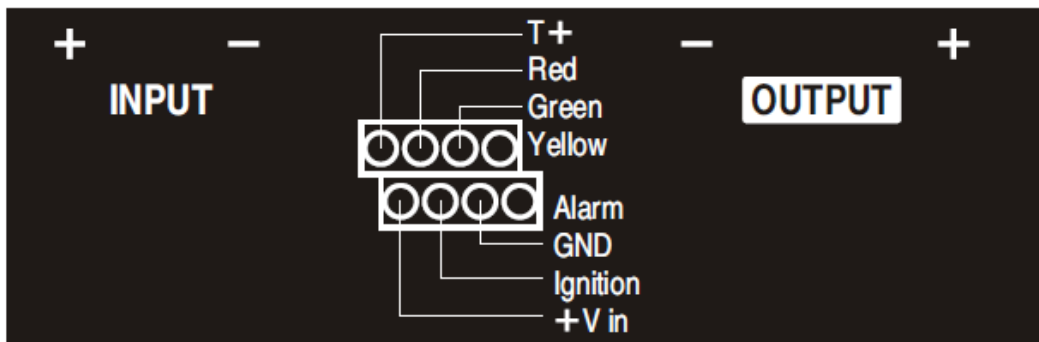
Connection

After both input and output are connected, the charger will produce an output after 10sec.



Front View

8-PIN connectors



- 1 **+V in:**
The voltage of this pin is equal to the input voltage. Installers can wire a switch between this pin and the "Ignition" pin to remotely turn the unit on or off.
- 2 **Ignition:**
Connect this pin to an ignition (+) source to make the charger operate in sync with vehicle ignition switch.
- 3 **GND:**
Ground pin for Remote Display. Connect to the black wire from the display box.
- 4 **Alarm:**
Alarm output pin. Alarm output voltage equals to system input voltage with max 200mA current.
- 5 **Yellow:**
Connect to display yellow wire.
- 6 **Green:**
Connect to display green wire.
- 7 **Red:**
Connection to display red wire.
- 8 **T+:**
Not used.

Ignition Control

Ignition control can be used to control the power ON/OFF function of the DC-DC charger.

In ignition ON mode, the DC-DC charger will only operate when the Ignition control signal is high. In this mode, the DC-DC charger can operation from 9-32V input.

The ignition control mode will set to ON once ignition control pin is applied with 9-32V voltage. The ignition control will remain in ON mode until it is manually reset.

Cancel Ignition Control

- i) Disconnect Ignition pin.
- ii) Press and hold button for around 15sec until A, B, C LED flashes.
- iii) Release the button to finish the reset

Low Voltage Disconnect (LVD) and Recovery (LVR)

In ignition control OFF mode, the DC-DC charger will operate when input and output is connected. In this mode, the DC-DC charger has Low Voltage Disconnect to protect main battery from over discharging. The following table shows LVD and LVR status.

System	Input Voltage	Output status
12V	Input Voltage < 12.2V	Set to OFF
	Input Voltage > 12.8V	Resume to ON
24V	Input Voltage < 24.4V	Set to OFF
	Input Voltage > 25.6V	Resume to ON

Remote Control

The Charging Status, Output Voltage and Fault status on remote control are in sync with the LEDs on unit.

Specification

Rated output power	20A at 13.8VDC	
Efficiency	90%	
Output (Charge) Voltage		
Battery Type	Absorption	Float
Wet	14.4	13.3
AGM	14.3	13.2
GEL	14.0	13.0
CAL	15.1	13.9
LiFePO4	14.8	Stop
Size (L x W x H) mm	130 x 188 x 55mm	
Weight	Approx. 870g	
Recommended Cable Size		
Cable Length	Recommended SAE	
1 – 5 Meters	8AWG	
5 – 9 Meters	6AWG	