

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 profile for WET/ AGM/ GEL/ CAL/ LiFePO4 battery. 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 system to charge your 12V auxiliary battery which can be installed at long distance from the starting battery as in trailer / caravan.

Features

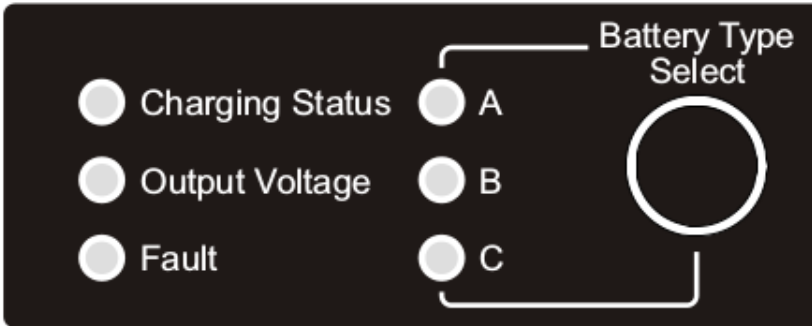
- 3 Stage Charge with selection of 4 types of lead battery.
- 2 Stage charge of LiFePO4 battery.
- Wide (9-32 V) input range designed for any 12 or 24V car, 4WD, lorry, coach, caravan electrical system.
- Auxiliary battery can still be fully charged efficiently at long distance from charger.
- Ignition Control 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 Over Load 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
- Over load 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

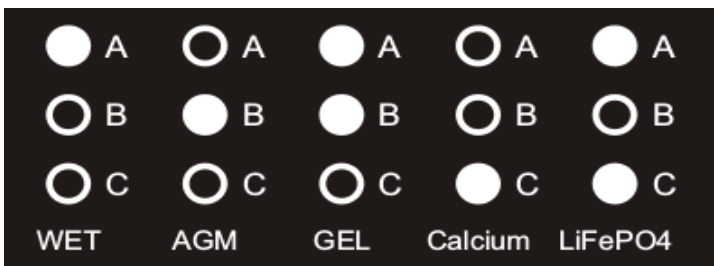
For LiFePO4, it uses 2 stages charging profile

Stage	Charging status LED	Charging stage
1	Fast flashing	Bulk charge or soft-start
2	Slow flashing	Absorption charge

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

LED status	Battery Voltage
Slow Flashing	Battery Voltage < 12.5V
Fast Flashing	12.5V ≤ Battery Voltage ≤ 13.6V
Solid	Battery Voltage > 13.6V

A/B/C Battery type indication:



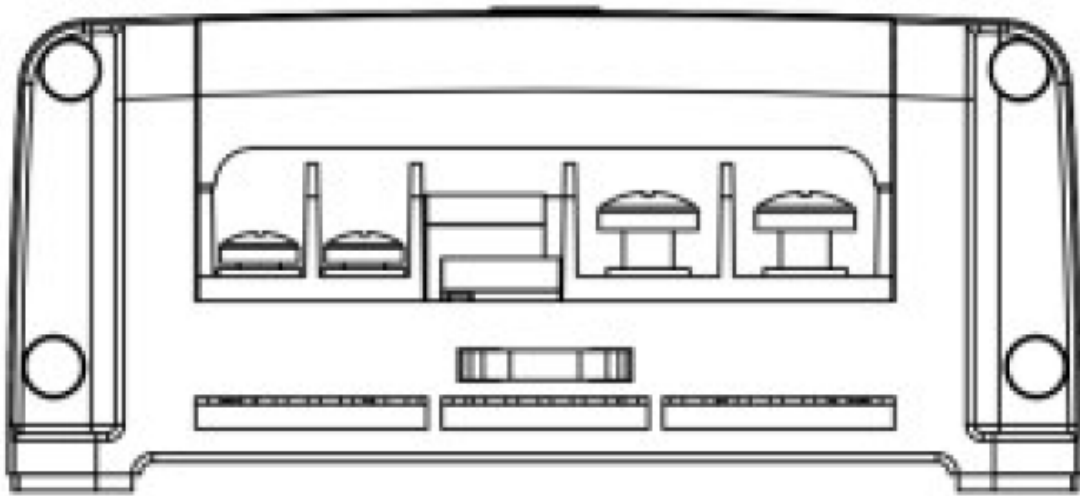
Selection of battery type:

- i) Press and hold button for around 5Sec until LED flash
- ii) Press button to select battery type. The flash LED will move to selected battery type. It is rolling in A → B → A+B → C → A+C → A → B →
- iii) Wait for around 10Sec, the LED stop flash. Then the battery type is being selected.

Fault LED: Indicate fault of fault

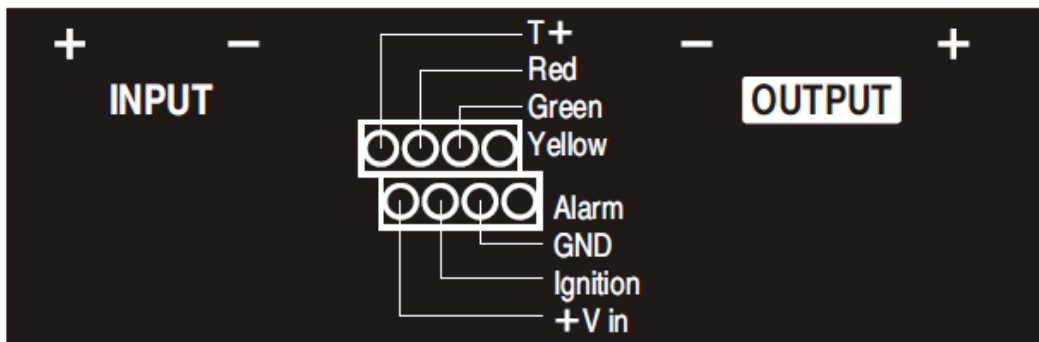
Connection

After both input and output are connected, the charger will have output after 10Sec.



Front View

8PIN connectors



- 1 **+Vin:**
Voltage signal equals to input Voltage. Short this port to Ignition pin to enable ignition control of unit.
- 2 **Ignition:**
Connect this pin to ignition car ignition to make the charger operate in sync with vehicle ignition control.
- 3 **GND:**
Ground bin for remote control. Connect to remote control black wire.
- 4 **Alarm:**
Alarm output pin. Alarm output voltage equals to system input voltage - 1.6V@100mA current.
- 5 **Yellow:**
Connect to remote control yellow wire.
- 6 **Green:**
Connect to remote control green wire.
- 7 **Red:**
Connection to remote control Red wire.
- 8 **T+:**
Not use

Ignition Control

Ignition control uses to control the ON/OFF of the DC-DC charger.

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

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

Cancel Ignition Control

- i) Disconnect Ignition pin.
- ii) Press and hold button for around 15Sec until A, B, C LED flash.
- iii) Release button to finish 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 for over discharge. The following table shows LVD and LVR status.

System	Input Voltage	Output status
12V	Input Voltage < 12.8V	Set to OFF
	Input Voltage > 13.4V	Resume to ON
24V	Input Voltage < 25.6V	Set to OFF
	Input Voltage > 26.8V	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	14.0
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	