

Motormate®

DC-DC Isolated 4-step Booster Charger

SDC-1120 • SDC-2210
SDC-1130 • SDC-2215
SDC-1140 • SDC-2220

INSTRUCTION MANUAL

Please read this instruction manual carefully
before operating the device.

⚠ Important Information!

Thank you for purchasing the DC-DC 4 step booster charger.

Please read this instruction manual carefully before operating the device. Keep this manual in a safe place for future reference. This instruction manual is part of the product. It must be handed over along with the device if it is passed on to a third party.

⚠ ⚡ **WARNING! Risk of Electric Shock!**

Do not open the device if it has been connected to the battery or DC power source.

⚠ **Warranty** only covers the cost of parts and labor for the repair service within the warranty period. Warranty will not apply where the device has been misused, altered, neglected, improperly installed, or physically damaged, either internally or externally or damaged from improper use or use in an unsuitable environment. We shall not be liable for damages, whether direct, incidental, special, or consequential, or economic loss even though caused by negligence, or other fault. If the device requires warranty service, please return it to the place of purchase along with a copy of the receipt with purchasing date.

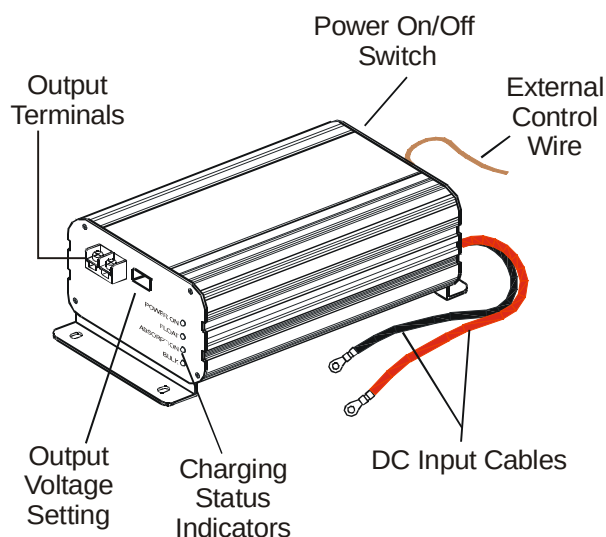
Specification

MODEL	SDC-1120	SDC-1130	SDC-1140
Input Voltage	12VDC (8 ~ 16VDC operative)		
Bulk / Absorption Charging	14.2V / 14.6V / 14.8V		
Float Charging	13.2V / 13.5V / 13.8V		
Power Supply	13.2V / 13.5V / 13.8V		
Max. DC output current	20A	30A	40A
Efficiency up to	90%		
Output short circuit	Yes		
Battery reverse polarity	DC fuse		
Input to output fully isolated.	Yes		
Isolated output terminals	1	1	1
Operation temperature	0°C to 40°C		
Ventilation	Cooling Fan, thermal controlled		
Weight (kg)	1.4	1.9	2.2
Dimensions (mm)	184 x 115 x 70	250 x 115 x 70	280 x 115 x 70

MODEL	SDC-2210	SDC-2215	SDC-2220
Input Voltage	24VDC (10 ~ 32VDC operative)		
Bulk / Absorption Charging	28.4V / 29.2V / 29.6V		
Float Charging	26.4V / 27.0V / 27.6V		
Power Supply	26.4V / 27.0V / 27.6V		
Max. DC output current	10A	15A	20A
Efficiency up to	90%		
Output short circuit	Yes		
Battery reverse polarity	DC fuse		
Input to output fully isolated.	Yes		
Isolated output terminals	1	1	1
Operation temperature	0°C to 40°C		
Ventilation	Cooling Fan, thermal controlled		
Weight (kg)	1.4	1.9	2.2
Dimensions (mm)	184 x 115 x 70	250 x 115 x 70	280 x 115 x 70

Specifications subject to change without notice.

Front View



This device has been CE tested and conforms to the applicable directives and standards.



Disposal

When the device has become unusable, dispose of it in accordance with the applicable disposal regulations.

Introduction

This compact DC - DC Isolated 4 step Booster charger uses the latest switch-mode technology and is designed to meet all modern automobile applications.

Galvanic isolated means you can connect to any load without worrying about interference from the input to the output. The 4 step Booster Charger is designed to charge Lead-acid batteries to its best status, thanks to the first step (Time controlled charge). This helps activate the battery status and wake up a weak or flat battery to a suitable recharging level. This improves the battery life and in turn helps to save the environment.

Since the DC supply from a vehicle's generator is often unstable and this will shorten the life of an electronic device. This DC-DC isolated booster charger can be used as a constant power supply to run accessories that require a stable and clean DC voltage.

For example: LCD TV, Digital Hi-Fi system, Wireless telephone systems, refrigeration systems, LED lighting, games, mobile computer and more....

The booster charger is designed with overload and short circuit protection. It will automatically switch off the unit and re-start if the overload or short circuit problem is corrected.

The cooling fan is thermal controlled. It will switch on and off automatically to control the internal temperature of the unit.

Remote on/off controls

The external lead wire on the rear panel is used for remote switching with on-board voltage (e.g. ignition from the vehicle engine or external switch). Note: The device power on/off switch must be switched off after the external lead wire is connected.



CAUTION!

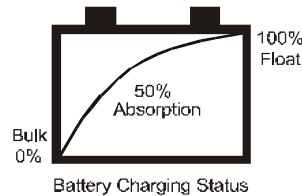
To prevent malfunction of the device, keep the external lead wire insulated if it is not in use.

Instruction and normal responses

Operation as booster charger

Connect the input cable to the DC source. Turn On the Power switch, the "POWER ON" LED lights up. This indicates the device is ready for charging. The "BULK" LED lights up. This means the battery charger is beginning at the 1st stage of charging. According to the battery type, adjust the charge setting dip switch to get the optimum charge.

Connect battery to the DC output terminal. The smart booster charger will perform the four stage charge automatically.



The 1st stage is to ensure battery is always charged at the maximum charging condition. This is to boost up the charging cycle and particularly wake up a weak battery to absorb energy.

In about 30 mins, the charger will switch to 2nd stage, the "BULK" LED remains ON, the battery is charged at the maximum charging voltage. The voltage level can be adjusted by the switch No. 1,2 and 3.

At the 3rd stage, the charger will switch to "ABSORPTION" mode, the red LED goes out and the yellow LED lights up. The device is delivering maximum current to the battery.

At the 4th stage, the battery has been charged to about 85% of its rated capacity. The "ABSORPTION" LED goes out and the "FLOAT" LED lights up. Battery is now under "FLOAT" constant charging. The charging voltage can be adjusted by the switch No. 4 and 5.

Operation as power supply

The device can be used as a Power Supply. Set the switch No. 6 to ON position. The device now operates as a power supply unit. The bulk and absorption LED goes out. Switch No. 1,2 and 3 are now disabled. The POWER ON and FLOAT LED light up. The output voltage can be adjusted by the switch No. 4 and No.5.



CAUTION!

1. Do not use the device near flammable materials or in any location that may accumulate flammable fumes or gasses.
2. Hot surface when operating, especially at full load condition.
3. Make sure the polarity is correct
4. Do not locate the device on the top of the battery. Especially Flooded, Wet type battery. It may generate gas vapor while charging.
5. Do not charge non-rechargeable batteries.
6. Use the appliance only in the described manner.
7. Do not expose the device to a heat source, such as direct sunlight or heating.
8. Store the device in a dry and cool place



Safety Operation!

- A. If cables have to be fed through walls with sharp edges, always use tubes or ducts to prevent damage.
- B. Do not pull on the cable, fasten the device and cable securely. Lay the cable so that it cannot be tripped over..
- C. Use the device only in the described manner.
- D. Children should be supervised to ensure that they do not play with the device.
- E. Do not allow water to drip or splash on the device.
- F. Make sure the air inlets and outlets of the device are not covered.
- G. Operate the device only if you are certain that the housing and the connection cables are undamaged.

Output Voltage Setting Table

SW No.	Battery Selector			Float Voltage			Power Supply		
1	ON	OFF	OFF						
2	*	ON	OFF						
3	*	*	ON						
4				ON	OFF	OFF	ON	OFF	OFF
5				OFF	ON	OFF	OFF	ON	OFF
6	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
12V Output	14.8	14.6	14.2	13.8	13.5	13.2	13.8	13.5	13.2
24V Output	29.6	29.2	28.4	27.6	27.0	26.4	27.6	27.0	26.4

Note: Dip-SW No. 1, 2 and 3 are switched off automatically (regardless it is on/off), when Dip-SW No. 6 is switched on.

Battery Type	Dip Switch Setting	Float Volt		Bulk / Absorption Volt	
		12V	24V	12V	24V
SLA / GEL	SW 3 ON, SW 1,2,4,5,6 OFF	13.2V	26.4V	14.2V	28.4V
AGM	SW 2,5 ON, SW 1,3,4,6 OFF	13.5V	27.0V	14.6V	29.2V
FLOODED	SW 1,4 ON, SW 2,3,5,6 OFF	13.8V	27.6V	14.8V	29.6V