

# PV Charge Controller

## SBC - 7108 / 7112 / 7120

### Description

The SBC-7100 Series PV charge controller is designed for use with all types of photovoltaic panels and different types of batteries, such as wet or sealed lead acid, lead calcium, lead antimony battery, NiCad or NiFe alkaline battery.

The MCU (Microprocessor controller) is programmed with 3 stage charging algorithms and with 0~100% PWM (Pulse Width Modulation) duty cycles to provide the fastest, optimal charging current and voltages from PV panels according to the actual state of charge and type of battery.

The 3-stage (Bulk, Absorption, Float) and \*Equalization\* charging cycles ensure complete charging cycles and maintenance of lead acid battery automatically.

Bulk and Float threshold charge voltage levels are user adjustable to meet specific battery manufacturer's recommendation.

\*Equalization Charging is only for Wet type lead acid Battery, automatically cycles once a month for 2 hours.

Equalization Charging can be de-activated or re-activated manually.

Hence, maximum PV charging efficiency and longer the service life span of the battery are ensured.

Ampere Hour logging read outs in three sets, today and last two days are shown on the LCD. This is useful to check the condition of PV data for efficiency and actual capacity of your system.

Electronic Blocking of back current to PV and overcharging battery protection are standard.

### Optional Accessories

1. There is an optional Remote Signal Terminal which can:

A. This signal is synchronized with the DC output status. It controls the ON/OFF operation of equipment such as inverter hooked up to the battery bank to operate along with the night-light mode program and share the safeguard function such as low battery disconnect and reconnect.

B. It makes extension connection of the battery status LED to allow remote monitoring battery bank status.

2. Temperature sensor (1.8m wire length) for the compensated bulk and float charging voltages according to the temperature at the battery.

### Specifications

	<i>SBC - 7108</i>	<i>SBC - 7112</i>	<i>SBC - 7120</i>
Battery Voltage	12VDC		
Maximum PV Panel Open Circuit Voltage	26VDC		
Continuous Load / Charge Current	8A	12A	20A
Maximum Charge Current (5 min.)	10A	15A	25A
Maximum Load Current (5 min.)	10A	20A	25A
Operation Current (no load and no PV)	30mA		
Voltage Across Terminal (PV to Battery)	0.6V	0.6V	0.8V
Voltage Across Terminal (Battery to Load)	0.3V	0.3V	0.4V
Electronic Blocking	Yes		
<i>(To protect against reverse polarity connection of PV panel and to block current from battery to PV panel when voltage of battery is higher than PV panel)</i>			
Battery Reverse Polarity Protection	Yes		
Over Charge & Over-Discharge Protection	Yes		
Battery Status LED Indication	5 State LED Indications		
Charging Status LCD Indication	3 State LCD Display (Bulk, Absorb, Float)		
Recommended Wire Size	#12AWG		
Dimensions (WxHxD)	150 x 85 x 45mm (5.9 x 3.3 x 1.8inch)		
Weight	470g (16.5oz.)		
Fuse	15A	20A	30A
Operating Ambient Temperature	-10 to 50°C		
Over Temperature Protection	Yes		
Battery Charging Float Voltage Setting	Factory Preset 12 - 15VDC		
Battery Charging Bulk Voltage Setting	Factory Preset 12 - 16VDC		
DC Load Control Mode (for DC load terminal):			
Low Voltage Disconnect (LVD)	Factory Preset 8 - 16VDC		
Low Voltage Reconnect (LVR)	Factory Preset 8 - 16VDC		

### DC Output (for small DC load)

The DC output terminal has many value added night-light mode programs, please see user manual at our website for detail descriptions.

The DC output has dusk to dawn automatic on-off operations.

There are 10 selectable multiple on-off programs, each with different power-on durations for various needs or lighting schedules.

The battery low voltage level disconnect and reconnect settings are user adjustable.

### Features

- User adjustable charging voltages
- Suitable for most types of heavy duty 12V battery.
- Microprocessor control PWM and 3 stage charging algorithms.
- Bulk, Absorption & Float Charge status on LCD Display.
- Ampere Hour logging read outs in 3 sets, today and last 2 days.
- 5 State LED Indications of battery levels.
- Electronic Overcharge Protection & Back Current Blocking to PV panel.
- Over Temperature Protection of PV Charge Controller's electronic circuit.
- Dusk to Dawn automatic ON-Off with 10 selectable on-off programs.
- Adjustable battery low voltage level disconnect and reconnect for DC output.
- Optional Temperature Sensor for compensated battery charging.
- Optional Remote Signal Terminal.

