

## SONEIL

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# 12V Shop Charger - 5 Station

## SPECIFICATIONS – Model 1230SBC

### Totally Automatic Switch-Mode Battery Chargers

"Suitable for Gel, Sealed & Wet Lead Acid Batteries"

**Summary:** 12 Volts, 15 Amp Constant Current in total  
(Equivalent to 30A tapered charger in charging time)

**Each of 5 station has 12V, 3A Constant Current**

#### **Input 115VAC (range 90VAC to 132VAC)**

- Suitable for North America, Japan & other 115VAC countries.
- Automatic Cut-off and then true Float. Can be left connected indefinitely without harming the battery.
- **De-sulfation of battery. Increases battery life.**
- **UL listed.**
- Many advance features described in this spec.
- Raised front for better viewing of the charging status lights
- **Compact size and lightweight**

#### **Explanation of the Features:**

The advance technology of the OEM Battery Chargers supplied by Soneil is fundamentally different from other battery chargers. The conventional linear battery charger is an electrical device whereas the 1230SBC is a light weight sophisticated electronic device.

Model 1230RBC is available for 230VAC applications.

#### 1. **Switch-Mode Technology:**

Most of the battery chargers use linear technology, which convert the 115VAC to 12 VDC at 50 Hz. This requires a large transformer, which has the disadvantage of lower

efficiency resulting in higher heat generation, larger size and weight.

Soneil's Battery Charger transforms the 115VAC into 12 VDC at about 100,000 Hz (1667 times faster than conventional charger), which requires a much smaller transformer and this results in a unit of smaller size, low weight and improved efficiency.

The 1230SBC uses sophisticated electronic circuitry with microchips. All present day computers Use switch-mode technology.

2. **International Safety Approvals & Listing:**

UL listed.

3. **Input Requirements:**

- a) 90VAC to 132VAC
- b) 47 - 63 Hz

Input AC tolerance +/- 20%. This means 1230SBC will operate satisfactorily in areas where the input voltage is low.

This charger is also **suitable for every part of the world** where 115VAC is used.

4. **Output: For each of 5 stations**

3 Amps Constant Current @ 12 Volts DC  
(Equivalent to 6 Amps tapered charger in charging time)

- a) Line Regulation @ Full Load 1%
- b) Load Regulation @ 4%
- c) **Ripple Voltage:** Very low 1%

The peak-to-peak ripple voltage into a resistive load is less than 200mV for the output voltage above 12 VDC.

## 5. Charging Cycle: For each of 5 stations

The charging curve is attached. The explanation of the charging cycle is as following.

Stages	Condition	Mode*	Current	Voltage	LED Indication
Stage 1	Charging Pulse mode	Pulse mode	3A Pulsing	0.5V to 5.0V	Flash
Stage 2	Constant Current mode	CC mode	3A	5.0V to 14.5V	Orange
Stage 3	Constant Voltage mode	CV mode	Reduces from 3A***	Holds at 14.5V	Orange
Stage 4	Standby Voltage mode	Standby CV mode	Reduces to zero	Maintains 13.7V	Green
	Recharging mode	CC mode	3A	12.5V	Orange

\* CC mode = Constant current charge

\* CV mode = Constant voltage charge

\*\*\* See Stage 3 description below

### **Stage 1: Deep Discharge Charging Pulse Mode: LED Flash**

The charger starts charging at 0.5V and give Pulse current up to 5V. This has effect of removing loose sulfation formed during deep discharge state of the battery.

### **Stage 2: Constant Current Mode (CC): LED Orange**

The charger changes to constant current 3A. When the battery voltage reaches up to 14.5V, the charging stage changes from CC (Constant Current) to CV (Constant Voltage) mode.

### **Stage 3: Constant Voltage Mode (CV): LED Orange**

The charger holds the battery at 14.5V and the current slowly reduces. When the current reaches at 0.5CC, this point called the Switching Point. The Switching Point is one of the great feature of this battery charger that it can adjust the current automatically according to battery capacity. Other chargers are not capable to adjust the current automatically.

### **Stage 4: Standby Voltage Mode: LED Green**

The charger maintains the battery voltage at 13.7V and current slowly reduces to zero. Charger can be left connected indefinitely without harming the battery.

### **Recharging: LED Orange**

If the battery voltage drops down to 12.5V, the charger changes from any mode to Constant Current mode and restart charging. The charging cycle will go through Stage 2

to Stage 4.

**Soneil charger can charge gel, sealed or wet lead acid batteries without use of any switch.**

6. **Two colours and function in one LED:**

LED is used to show the charging status. When the LED is Orange, the charger is in charging or recharging mode and the current is 3A constant. When the LED Green, the charger is in Standby mode and no current (zero) is flowing.

7. **Protection:**

- a) **Reverse polarity protection** - provided
- b) **Short circuit protection** - provided
- c) **Over-Voltage Protection** - provided
- d) **Over current protection** - provided
- e) **AC Surge Protection** - provided
- f) **Soft start and stop:** Starts and stops gradually.  
No sudden in-rush of current. This protects both the batteries and any other circuits connected to the charger.

8. **De-sulfation of battery:** The charger will remove loose sulfation and increase the battery life. (Hard sulfation cannot be reversed).

9. **Electromagnetic Interference (EMI):**

The charger will not generate excessive radiated or conducted emissions. No interference with TV, radio, computer or other equipment.

10. **Size & weight: Small**

Width - 12.5" (320 mm)  
Height - 5" (120 mm)  
Depth - 14" (350 mm)

Weight: 9.5 lbs (4300 grams)

Ref: SPEC1230SBC(Rev00).061804

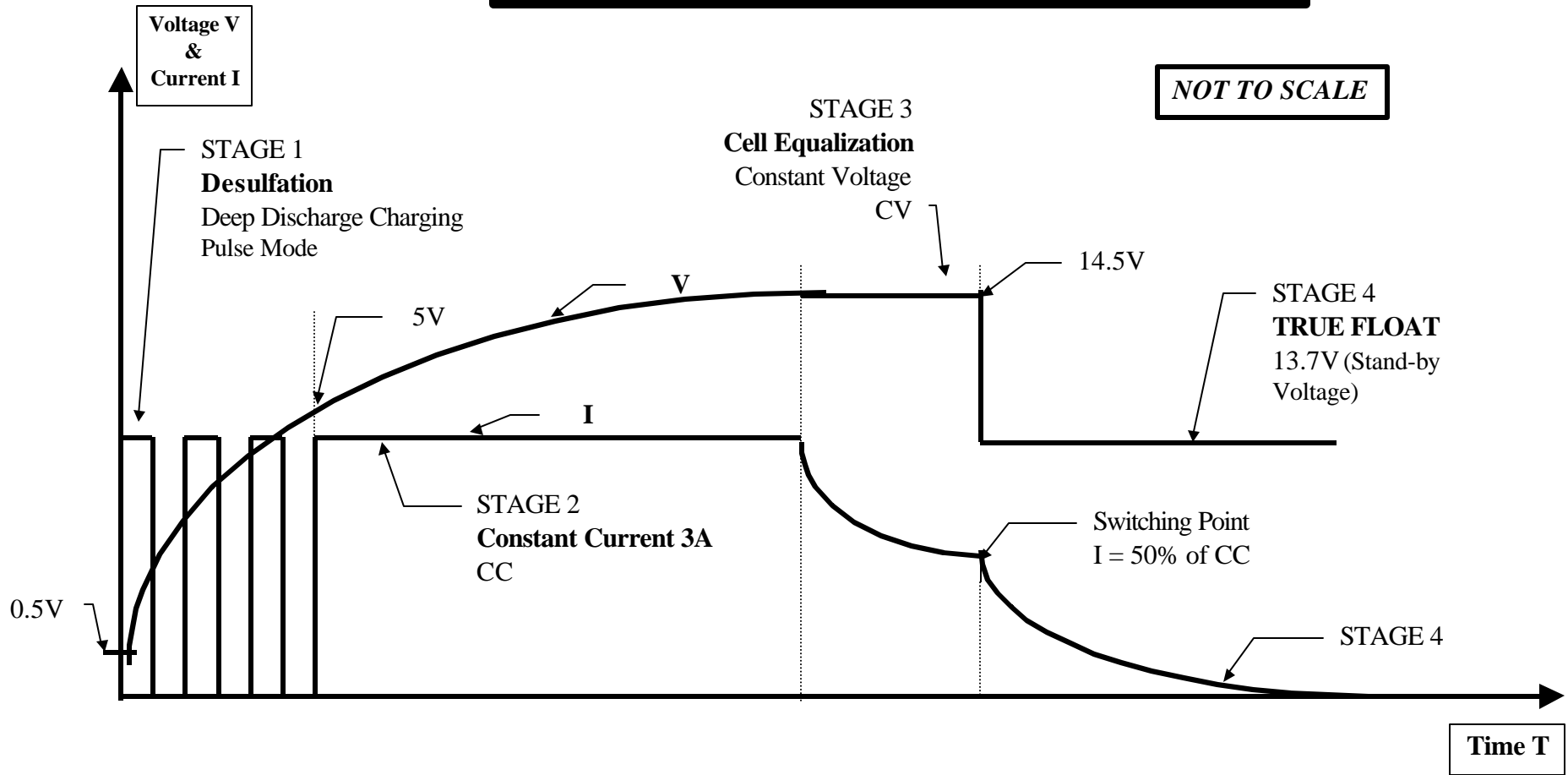
# CHARGING CURVE

## MODEL 1230SBC

For each of 5 stations

SONEIL 12V/30A CHARGER

(15A CONSTANT CURRENT)



Ref: Curve1230SBC.061804