S O N E I L

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Revision No.: R01

Specification of Battery Charger

MODEL: 6010SR

60V / 5A LEAD ACID BATTERY CHARGER

1. General

The Soneil 6010SR switch-mode battery charger is a sophisticated fully automatic three-stage battery charger which can be used to charge any gel, sealed and wet lead-acid batteries.

2. Main product specification

Max. output power	Input voltage	Output voltage	Output current range	Voltage tolerance
360W	115Vac/230Vac	+72+/-0.2Vdc	5.0A+/-0.2A	+/-0.2V

3. Environmental condition

No.	Item	Technical specification	Remark
1	Humidity	5~95%	With packing in box.
2	Altitude	≤3000m	Works normally
3	Cooling	The battery charger is cooled by a 12VDC ball-bearing fan.	Working under full load

4. Electrical characteristics

4.1 Input characteristics

No.	Item	Technical specification	Remark
1	Input voltage range	100-240Vac	With Universal Input
2	AC input voltage frequency	47 – 63 Hz.	
3	Max input current	4.5A	Vin = 90Vac, rated load

4.2 Output characteristics

No.	Item	Technical specification	Remark
1	Fast charge voltage	72+/-0.2Vdc	
2	Floating voltage	69.0Vdc	
3	Constant current	5.0A	
4	Switch current	1.0A	
5	Power efficiency	≥80%	At 115Vac & 230Vac rated input voltage

4.3 Protection characteristics

No.	Item	Technical specification	Remark
1	Output over voltage protection	At 10% of rated output voltage.	
2	Reverse battery protection	The charger is electronically protected against reverse polarity.	
3	Thermal protection	N/A	
4	Output over current protection	5.5A	At CC mode
5	Short circuit protection	Short circuit protection shall automatically recover after fault is removed.	

4.4 Charging indicator

No.	Item	Status	Remark
1	Power on	LED1: Red	Constant current
2	Charging	LED2: Red	Constant Voltage
3	Fully charged	LED2: Green	Float Voltage

5. Safety & EMC

No.	Item		Standard(or test condition)	Remark
1	Electric strength test	Input-output	1500Vac/10mA/1min	No breakdown
2	Isolation resistance	Input-ground	≥10Mohm@500Vdc	
		Output-ground	≥10Mohm@500Vdc	
3	Leakage current		< 3.5mA	At Vin 115Vac and 230Vac, 50 – 60 Hz.
4	Safety		CE /UL compliant	
5	EMC		EN55022:1998+A1:2000+A2:2003 EN55024:1998+A1:2001+A2:2003 (EN61000-4-2:1995+A1:1998+A2:2001 EN61000-4-3:2002 EN6100-4-4:1995+A1:2000+A2:2001 EN61000-4-5:1995+A1:2000 EN61000-4-6:2001 EN61000-4-11:2001)	
6	LVD		EN60335-1:2002+EN60335-2-29:2002	

6. Environmental Testing Requirements

No.	Item	Technical specification	Remark
1	High temperature ambient operating	+50℃	Features ok
2	Low temperature ambient operating	-10℃	Features ok
3	High temperature storage	+70℃	Work normally after recovery under normal temperature for 2hours
4	Low temperature storage	-40℃	Work normally after recovery under normal temperature for 2hours
5	Random vibration	20Hz to 2000Hz 3Grms 20hours per axis	
6	Repetitive shock	40g peak 3 orthogonal axes, 3+ and 3- in each axis, 11ms pulse width	
7	Thermal shock	-35℃ to 75℃, < 3min transition,	

		2.5hours dwell, 200cycle.	
8	Drop test	BS EN60068-2-32: 1993 TEST ED: Free fall appendix B.	

7. Mechanical characteristics

Outline dimension: L*W*H=170*90*63mm
Input socket: Meets IEC standard.
Output wire: 12AWG, 2.5mm^2, Brown (+ve) & Blue (-ve), 1.5m length with thick insulation.
Weight: 1.3Kg

8. Package, transportation & storage

8.1 Package:
There is product name, model, name of manufacturer, safety approval, serial number and User/Operation Manual in the packing box.

8.2 Transportation:
Suitable for transportation by truck, ship and plane. The products should be shielded by tent from sunshine, and loaded and unloaded carefully.

8.3 Storage:

Products should be stored in packing box when not used. And warehouse temperature should be -40~70℃, and relative humidity is 5~95%. In the warehouse, there should be no harmful gas, inflammable, explosive products, and corrosive chemical products, and strong mechanical vibration, shock and strong magnetic field. The packing box should be above ground at least 20cm height, and 50cm away from wall, thermal source, and vent.

9. Reliability requirements

MTBF (standard, environmental temperature, load requirement) ≥50K hours; testing condition: 25℃, full load, testing proved value.

10. Charger wiring

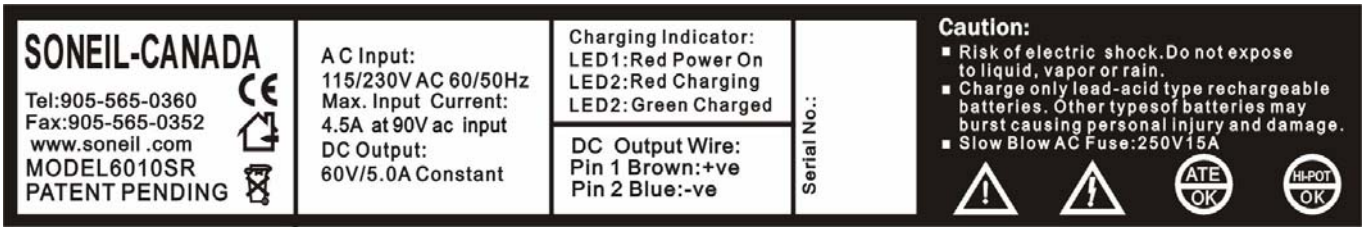
Brown DC output wire: +ve
Blue DC output wire: -ve

10.1 A spark is often seen on first connection of the charger to the battery terminals due to charging of the internal output capacitors. This is normal and should not lead to undue concern, care should be taken to ensure the battery

vent caps are closed and there are no flammable object in the vicinity of where the connection will be made

10.2 The charger has been calibrated to take account of the voltage drop in the DC output cables during operation. To prevent the possibility of over or under charging of the battery it is recommended the DC output cable is connected directly to the battery without modification. We are able to customize cable length and connections for volume customers with specific requirements.

11. Label



12. Charging Curve

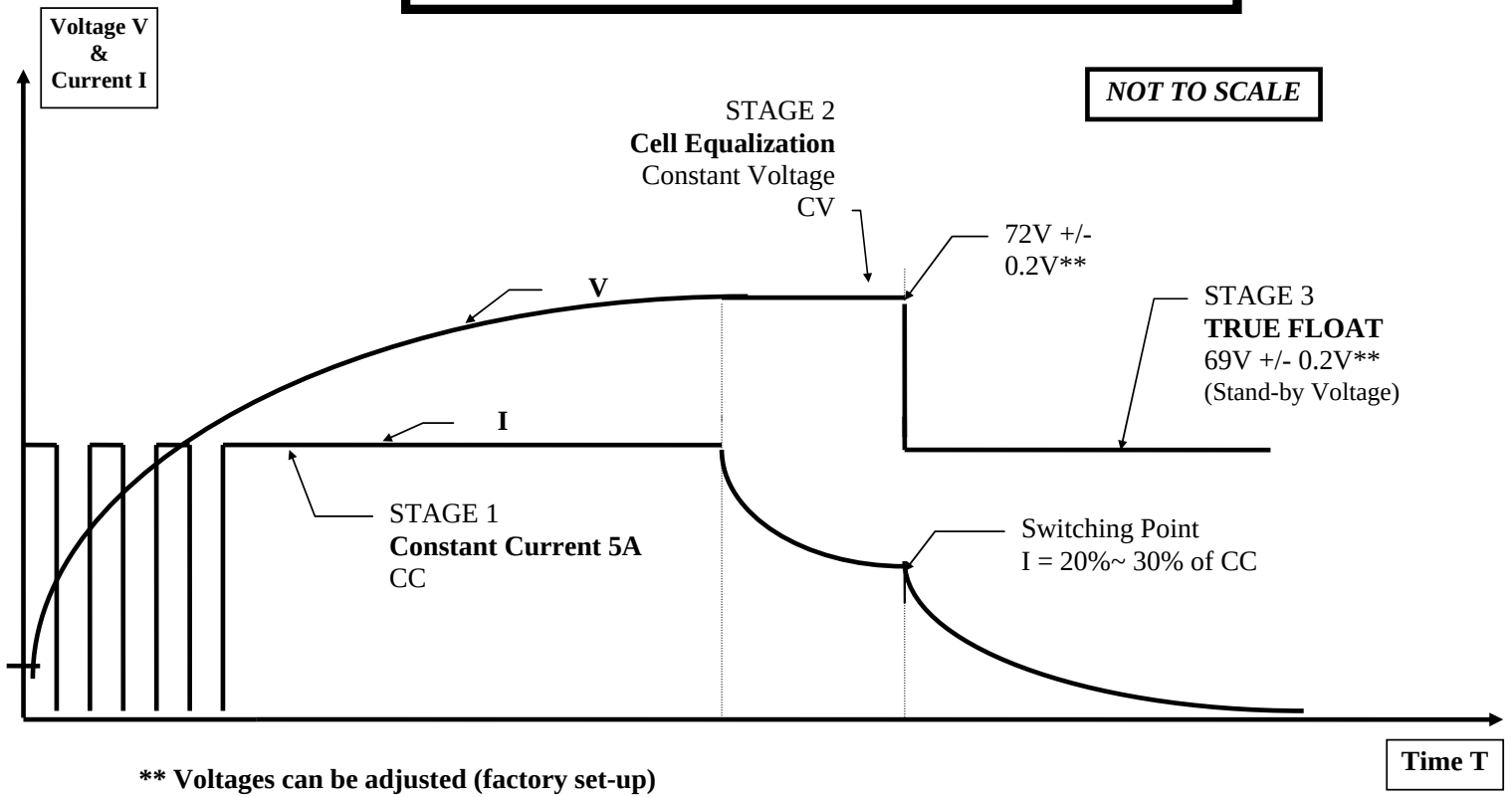
Refer to separate attachment.

Note: This Specification is subject to change without notice.

For more detail and accurate information on the charger contact Soneil by email or call via phone.

CHARGING CURVE
MODEL 6010SR

SONEIL 60V/5A LEAD ACID CHARGER



**** Voltages can be adjusted (factory set-up)**

Ref: Curve6010SR.