S O N E I L

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Revision No.: R02

Specification of Battery Charger

MODEL : 1240 SR

12V / 20A LEAD ACID BATTERY CHARGER

Subject to change without prior notice, please feel free to contact us for latest information.

1. General

Battery Charger 1240SR is cooled by 250*150*88mm 12VDC ball-bearing fans with forced air, can work normally under 14.7Vdc/20A and with reverse polarity protection.

2. Main product specification

Max. output power	Input voltage	Output voltage	Output current range	Combined regulation
305W	115Vac/230Vac	+14.7+/-0.2Vdc	19.5-20.5A	+/-0.2V

3. Environmental condition

No.	Item	Technical specification	Remark
1	Humidity	5~95%	With package
2	Altitude	≤3000m	Work normally
3	Cooling	The power supply is cooled by 250*150*88mm 12VDC ball-bearing fans forced air	Working under full load

4. Electrical characteristics

4.1 Input characteristic

No.	Item	Technical specification	Remark
1	Rated input voltage	115/230Vac	115Vac/230Vac selector switch
2	Input voltage range	90~132/180~264Vac	
3	AC input voltage frequency	47~63Hz	
4	Max input current	3.8A	Vin=90Vac, rated load

4.2 Output characteristic

No.	Item	Technical specification	Remark
1	Fast charge voltage	14.7+/-0.2Vdc	
2	Floating voltage	13.8Vdc	
3	Constant current	20A	
4	Switch current	4.0A	
5	Power efficiency	≥80%	Vin=230Vac, rated load
6	Output inhibit voltage	13.7~14.0V	For powering electric vehicle controller only
7	Output inhibit current	50~100mA	

4.3 Protection characteristics

No.	Item	Technical specification	Remark
1	Over voltage protection		
2	Software over voltage protection	The charger software limits the maximum output voltage to a level suitable for the connected battery system	
3	Thermal protection	An internal temperature monitor reduce charger output power in extreme operational temperature to prevent damage	
4	Current limiting protection	22A	At CC mode

5	Short circuit protection	Short circuit protection should be automatically recovery after remove the condition	
6	Reverse polarity protection	If output wires are reversely connected the charger will not operate and will work normally when wires are correctly connected.	
7	Fan cooling	The fan is controlled by a temperature sensor. After charger works , the fan will run for 2min or so (even several seconds); if the charger temperature is below 30~45 ℃, the fan will stop; if the charger temperature rise, the fan will run again;	

4.4 Charging indicator

No.	Item	Status	Remark
1	Power on	LED1: red	
2	Charging	LED2: OFF	
3	Fully charged	LED2: green	
4	Charge voltage	LCD display	Select switch at V position
5	Charge current	LCD display	Select switch at A position
6	Completely charged	Charge current is very low(down to 0A)	Select switch at A position

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	Vin=264Vac
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	

Remark: Discrimination A- Function OK under technical requirement range;

Discrimination B- Function temporarily debasement without reposition and halt is allowed;

Discrimination R – Physical damage or failure of equipment are not allowed, but damage of protection device (fuse) caused by interference signal of outside is allowed, and the whole equipment can work normally after replacement of protection device and reset of

running parameter

6. Environmental testing requirements

No.	Item	Technical specification	Remark
1	High temperature ambient operating	+40℃	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=250*150*88mm
Input socket: meets IEC standard;
Output wire: 10AWG, 4mm^2, brown (+ve) & blue (-ve), 1.5m length; thick insulation
Inhibit voltage wire: AWG18 yellow; 1.5m length;
Weight: 3.6Kg

8. Package, transportation & storage

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

8.2 Transportation:
Suit 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 package box when it is not used. And warehouse temperature should be -40~70℃, and relative humidity is 5~95%. In the warehouse, there should not be harmful gas, inflammable, explosive products, and corrosive chemical products, and strong mechanical vibration, shock and strong magnetic field affection. The package box should be above ground at least 20cm height, and 50cm away from wall, thermal source, and vent. Under this requirement, product has 2years of storage period, and should be rechecked when over 2years.

9. Reliability requirements

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

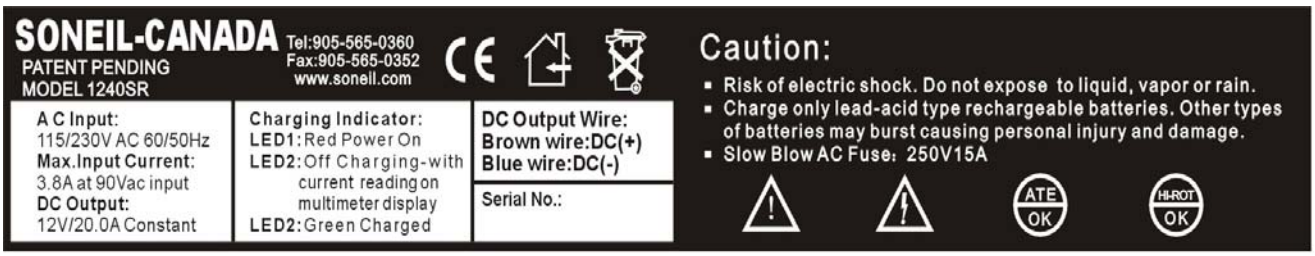
10. Charger wiring

10.1 A spark often on first connection of the charge to the battery terminals due to charging 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 are connected directly to the battery without modification. We are able to customize cable length and connections for volume customers with specific requirements.

10.3 The inhibit wire (+) cannot be tested or connected to the output (+) and the output(-) wires, it supplies power for the controller(such as a relay). After the inhibit wire(+) is connected to the controller' terminal(+) and the charger output(-) connected to the controller' terminal (-), the controller will work.. The inhibit wire provides a DC voltage of 13.7V ~ 14.0V and current of 50~100mA signal to the controller.When controller is connected to inhibit wire it will shut off the electric circuit of the vehicle and prevents vehicle from moving during charging.

11.Label



12. Charging Curve

(Refer to attachment)