



# Smart Charger

SONIC- C1200  
BATTERY CHARGER 84V/15A



Revision A, 2022-11-16  
[Electrifuel.com](http://Electrifuel.com)

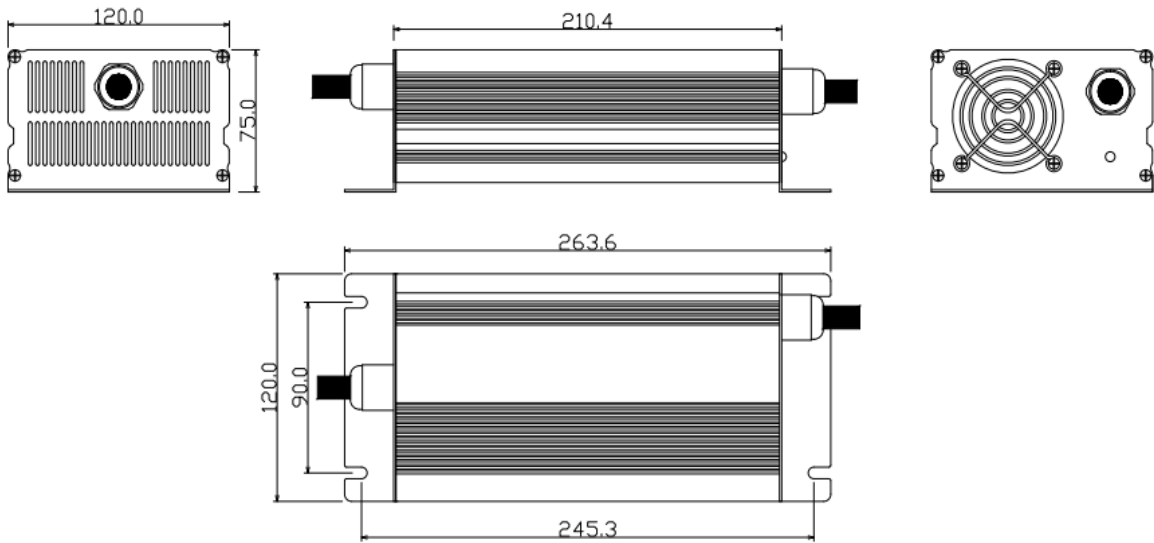
▪ Electrical Characteristics :

Model		Sonic
<b>Matched Battery Type</b>		Lithium-Ion Battery
<b>Charging Mode</b>		CC/CV
<b>Heat Sinking Method</b>		Cool by Fan
<b>Communication Type</b>		CAN Enable
<b>Input</b>	Range of Input Voltage	(200~264 VAC)
	Range of Input Frequency	47-63Hz
	Power Factor	PF>0.65/200-240VAC
	Efficiency	90% <a href="#">min.@220VAC</a>
	Input AC Current	11Amax. @200Vac input & Full load
	Inrush current	60A@Cold Start
<b>Output</b>	Rated Voltage	84V
	Rated Current	15A
	Rated Power	1260W
	Voltage Precision	±0.2
	Line Regulation	1%
	Load Regulation	5%
	Dynamic Load	The power supply shall maintain output voltage when the output current changes from 25% to 70% load and back to 25% load and A/us slew rate and transient time with 200ms.
	Capacitive Load Test	200~240VAC, Full load, parallel connected with 2200uF capacitor. One way is that power is on and connects the load, and the other way is that connects the load first and then power on. The output voltage wave by the two ways must be ascending directly without surging up and down.
	Maximum Current for Fully Charged LED Indicator	≤12%*Rated Current
	Ripple and Noise	≤1000mV Ripple & Noise: Measurement is done by a 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and 10uF electrolysis capacitor. (Test under the condition of rated input and rated output)
Standby Power	≤10W	

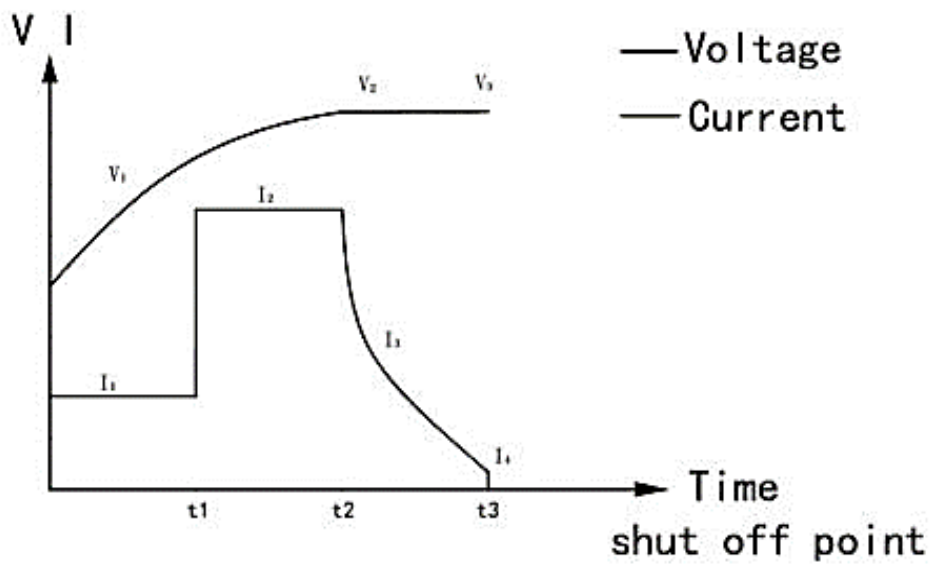
<b>Output</b>	Turn on Time	5S/100VAC
	Rise Time	< 30ms
	Communication Protocol	CAN proprietary
<b>Protection</b>	Short Circuit/Reverse Battery Polarity	The power/battery is properly connected.
	Over Current /Over Load /Under voltage	After the abnormal conditions are lifted, normal operation can be resumed.
	Over Voltage	When the output voltage exceeds 1.15-1.25 times of the rated voltage, the power supply will be protected and normal operation after abnormal conditions are lifted.
	Over Temperature	The output is reduced to half current when the temperature switch reaches a rated value of 85°C. It can recover automatically after the temperature drop.
<b>Environment</b>	Operating Temperature	-25°C~+50°C
	Operating Humidity	10~95%RH, no condensation.
	Drop Tests	1 Corner, 3 Edges, 6 Surfaces, Height: 100cm, On the cement plane, the plug can be bent and scratched, but the structure should not be damaged and can work normally.
	Storage Temperature Humidity	-40°C~+80°C, 10~95%RH
	Operating Altitude	2000m
	Non-Operating Altitude	10000m
	Operating Vibration	Vibration:1.0G(Amplitude), 5~20~500 Hz (Frequency), 30 minutes per cycle for each axis (X, Y, Z).
	Non-Operating Vibration	The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810D, method 514, and procedures X, as it is mounted in the chassis assembly and packed for shipping.
<b>Safety and EMI/EMC Standards</b>	Safety Standards	EN60335, UL62368
	Dielectric Strength (Hi-pot)	Primary to Secondary:1800Vac 50Hz / 5mA Max /60 seconds (3second for production) should not be breakdown and flashover.

<b>Safety and EMI/EMS Standards</b>	Leakage Current	<5mA
	Insulation Resistance	100MΩ min. at primary to secondary add 500Vdc test voltage, Relative Humidity 75%.
	Electromagnetic Compatibility (EMC) Standards	FCC Part15, Class B, EN55032
	Green LED Blinking Slowly	Idle, waiting for a battery connected to.
<b>2-Color LED Indicator for Charging Status</b>	RED LED On	Charging
	GREEN LED On	Fully Charged
	RED LED Fast Blinking	Reverse Battery Polarity or Short Circuit Protection
	GREEN LED Fast Blinking	Testing burn-in Mode, Output ON
	Mean Time Between Failure (MTBF)	200,000 hours, operating at ambient temperature 25°C and rated grid and load
<b>Reliability and Quality Control</b>	Operating Life	The Capacitor life shall be at least 3 years at 40°C, 60% load, and input voltage 230Vac
	Burn-In	The power supply shall undergo burn-in for 4 hours under normal input 80% rated load at 40°C.
	Case Temperature Rise	≤+65°C
	Case Material	Aluminum alloy
<b>Others</b>	Weight	2.5kg
	Color	Black
	Dimensions	210.4mm*120mm*75mm (L*W*H)
	Package	Aluminum Encloser: 30*20*12.5cm carton: 63*22*41.5 cm
<b>Remark</b>		

- Outline Dimension Drawing:



- Charging Curve



**Document revision history**

Revision	Date	Description
A	2022-11-16	Initial release