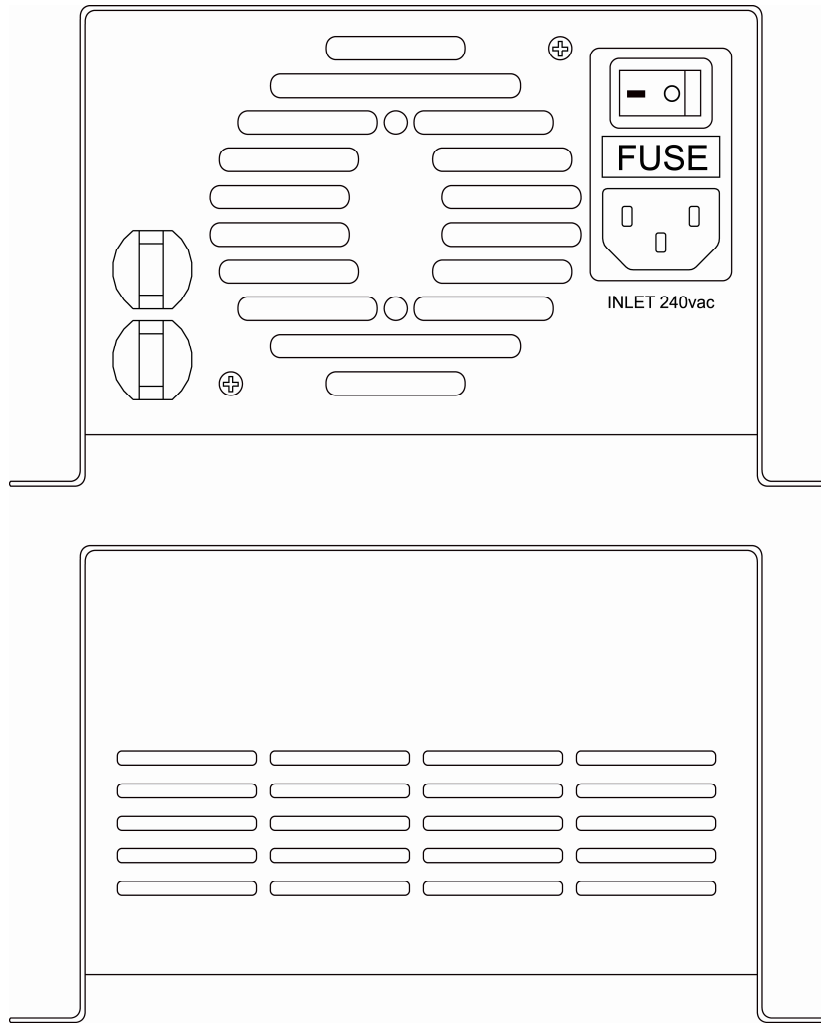


CC-1223-F USER'S MANUAL

**12 Volt 23 Amp Battery Charger Suitable
for Caravan / RV / Marine use**

SPECIFICATION

MODEL		CC-1223-F
OUTPUT	DC VOLTAGE	13.8V
	RATED CURRENT	23A
	CURRENT RANGE	0 ~ 23A
	RATED POWER	320W
	RIPPLE & NOISE (max.)	150mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 15V
	VOLTAGE TOLERANCE	±1.0%
	LINE REGULATION	±0.3%
	LOAD REGULATION	±0.5%
	SETUP, RISE TIME	800ms, 50ms/230VAC
	HOLD TIME (Typ.)	16ms /230VAC
	BATTERY TYPE	Open & Sealed Lead Acid
INPUT	VOLTAGE RANGE	88 ~ 264 VAC
	FREQUENCY RANGE	47 ~ 63Hz
	POWER FACTOR	PF>0.95/230VAC PF>0.98/115VAC at full load
	EFFICIENCY (Typ.)	86%
	AC CURRENT (Typ.)	2.5A/230VAC
	INRUSH CURRENT (Typ.)	40A/230VAC
	LEAKAGE CURRENT	<1mA / 240 VAC
PROTE- TION	OVER LOAD	105 ~ 135% rated output power
		Protection type : Constant current limiting, recovers automatically after fault condition is removed
	OVER VOLTAGE	13.8 ~ 16.2V
		Protection type : Shut down o/p voltage, re-power on to recover
	OVER TEMPERATURE	80°C ±5°C Detect on heatsink of power transistor
BATTERY	Battery Polarity, Batt. Over voltage protection	
FUNCT- ION	FAN CONTROL	Variable Speed – Load Dependant.
ENVIRO- NMENT	WORKING TEMP.	-20 ~ +65°C
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC	SAFETY STANDARDS	UL60950-1, TUB EN60950-1 Approved
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, Light industry level, criteria A
OTHERS	MTBF	207.6K hrs min. MIL-HDBK-217F (25°C)
	DIMENSION	285*175*102 mm (L*W*H)
	SHIPPING WEIGHT	1.46Kg



OUTPUT CABLE	ASSIGNMENT
RED x 2	DC OUTPUT +V
BLACK x 2	DC OUTPUT -V

OPERATING PROCEDURE:

Make sure the charger is switched OFF when connecting to the batteries. The polarity must be correct: charger output (+) should be connected to the (+) terminal of batteries and charger output (-) should be connected to the (-) terminal.

At no time should the (+) and the (-) be shorted together or the charger may be damaged.

Set the ON/OFF power switch to ON and check whether the operation of the LED is correct (red: high load; green: low load).

NOTES:

1. The charger is only suitable for “**lead-acid**” batteries. (not **Ni-Cad** or **Lead Calcium**)
2. The charger should be used in a place with good ventilation and protected from rain or excessive moisture.
3. Make sure the charging voltage and charging current are suitable for the batteries you are using.
4. Turn off the charger before connecting or disconnecting the charger output cable and plug.
5. The charger has a 2-year warranty. Damage from misusing the charger will not be included in the coverage of warranty.

STATUS UNDER GENERAL OPERATION:

At the beginning stage of operation, the charger provides maximum current with 13.8V of output voltage (for 12V batteries) to charge the batteries. The LED indicator will indicate RED. After a period of time (probably a couple of hours, based on the capacity of batteries), the charging current will decrease gradually. When the current decreases to approx 80% of maximum output, the LED indicator will change to YELLOW. When the current decreases further to approx 10% of maximum output, the LED indicator will change to GREEN. The cooling fan will start automatically when the charger gets hot, and will switch off when the charger has cooled.

CC-1223-F	
V _{FLOAT}	13.8V
SUGGESTED BATTERY CAPACITY	70-250 Amp hour

WARNING: Lead Calcium batteries are not suitable for use with this charger. Lead Calcium batteries require approximately 15 volts to recharge correctly.

SUGGESTED BATTERY CAPACITY:

1. It will not cause any problems if the capacity of batteries are larger than the suggested value. It just takes more time to fully charge the batteries.
2. If you have any question about the suitable charging current for the batteries, please refer to the technical data provided by the battery manufacturers or consult the vendor of the batteries.