Chargetek RTIC-1110
Lead-Acid Battery Charger Specification

1 INTRODUCTION

This document establishes the performance of the Chargetek RTIC-1110 single output Lead-Acid Battery Charger.

2 DESCRIPTION

The RTIC-1110 is an intelligent waterproof lead acid battery charger. The charger is intended for use with 12V battery systems and operates from 120VAC 50-60Hz service. LED indicators are provided for state of charge, charging current and other information.

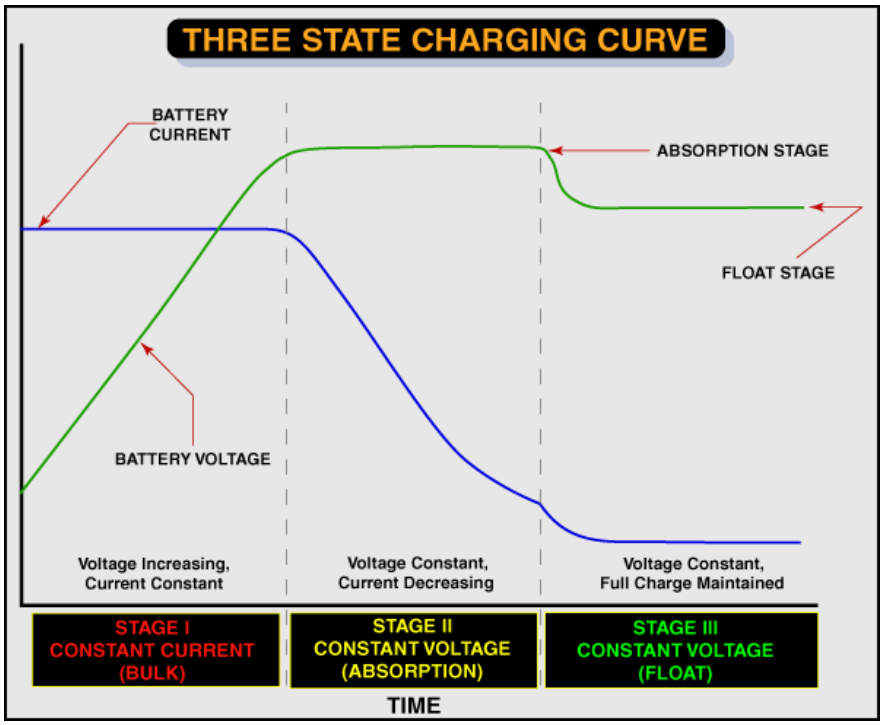
The charger is hermetically sealed, completely waterproof and extremely vibration resistant. The RTIC-1110 is convection cooled and has thermal regulation to phase back the charging current in high ambient temperature environments. Charging is implemented with a three state algorithm insuring 100% returned capacity.

3 CHARGE ALGORITHM AND INDICATORS

Fast charge: Supplies I_{FAST} in a constant current mode until the battery voltage reaches $V_{FASTTERM}$. Charging mode changes to absorption mode.

Absorption mode: Regulates battery voltage at $V_{FASTTERM}$ until charger current drops to $I_{ABSORBTERM}$ at which time the charging mode changes to float charge.

Float charge: Regulate battery voltage at $V_{FLOAT.}$ If the output current increase to $I_{FLOATTERM}$ the charger will begin charging in the fast charge mode.



The following LED indicators are provided:

Charging Mode: Red: Fast Charge, Flashing Red/Green: Absorption, Green: Float Charge

Charging Current: Red: 7-10A, Flashing Red/Green:3-7A, Green 0-3A

Output On: Green LED, when illuminated indicates the output is connected correctly.

AC On Light: Indicates AC power is applied

4 PROTECTION AND SAFETY FEATURES

The following protection features are incorporated into the RTIC-1110:

Reverse Polarity: Battery leads may be reversed without damage to the charger or battery.

Short Circuit: The output may be short-circuited without damage to the charger.

Over Voltage: In the event of a component failure resulting in loss of regulation, the charger will automatically shutdown to prevent damage to the battery.

Over Temperature: Over temperature protection is provided to lower the output current until the unit's temperature drops to an acceptable level.

Vibration Resistant: The RTIC-1110 is encapsulated an UL approved, flame retardant material providing rigid support for all internal components.

Waterproof: The encapsulation provides complete waterproofing.

Wire Insulation: AC power cord is SJTOWA: weather and oil resistant insulation.

5 ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	Conditions
V_{AC}	AC Supply Voltage	100-132	VAC	47Hz – 63Hz
IAC_{FAST}	AC Current	4.0	Amp AC	100VAC
T_{OPR}	Operating Temperature	-10 to 50	°C	Ambient
T_{STG}	Storage Temperature	-30 to 80	°C	
	Operating Humidity	99	% RH	

6 DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Minimum	Typical	Maximum	Unit	Conditions
$V_{FASTTERM}$	Fast charge termination voltage	14.6	14.7	14.8	V	25 °C
V_{FLOAT}	Float voltage	13.4	13.5	13.6	V	I_{OUT} < 1.0 A, 25°C

Symbol	Parameter	Minimum	Typical	Maximum	Unit	Conditions
I_{FAST}	Fast charge current	10	11	12	A	$V_{BATTERY}$ = 12V
$I_{ABSORBTERM}$	Absorption mode charge termination current	1.5	1.8	2.3	A	Voltage at $V_{FASTTERM}$
$I_{FLOATTERM}$	Float charge termination current	3.3	3.5	3.7	A	Voltage at V_{FLOAT}
$I_{STANDBY}$	Standby Current		10		ma	AC Off

7 PHYSICAL CHARACTERISTICS

Size: 7.97” x 3.76” x 2.73” – see Figure 1
Weight: 8 lbs.
AC Cord length: 6’
DC Cord length: 6’
DC Cord termination: Ring terminals (can be changed upon request)