Chargetek RTIC-2205
Lead-Acid Battery Charger Specification

1 INTRODUCTION

This document establishes the performance of the RTIC-2205 Lead-Acid Battery Charger.

2 DESCRIPTION

The RTIC-2205 is a single 24V-output waterproof, convection cooled lead-acid battery charger utilizing a three-state charge algorithm. The RTIC-2205 is intended for use with 24V battery systems and operates from 220VAC 50-60Hz service. Spark free hook-up is provided as long as AC power is off.

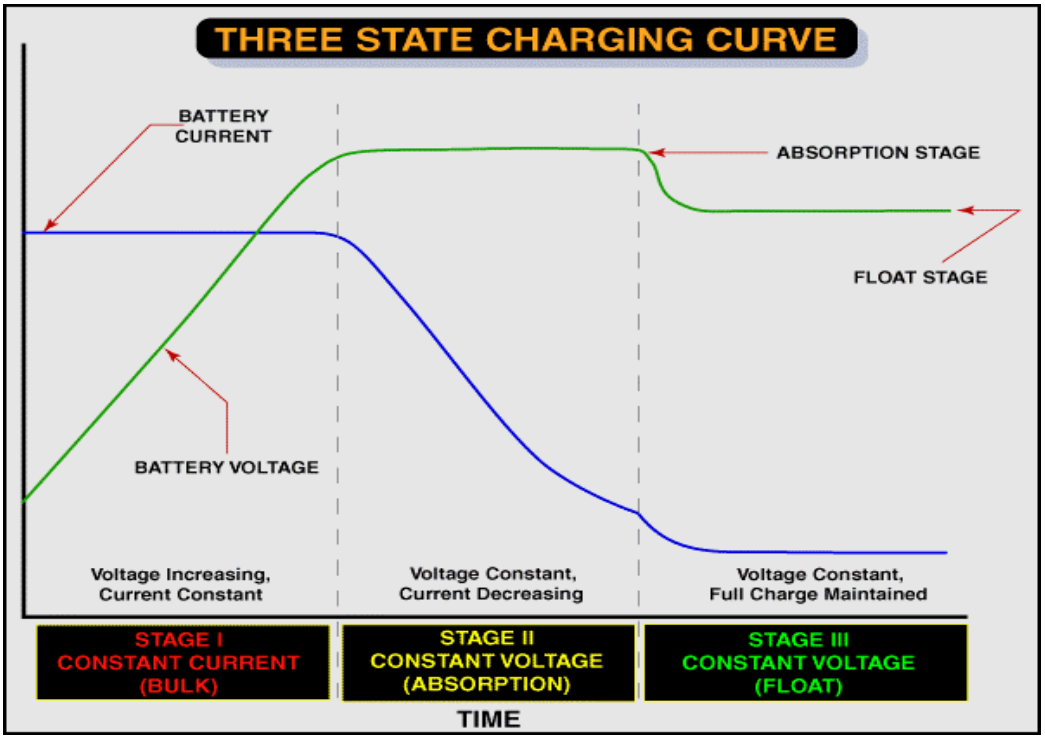
3 CHARGE ALGORITHM AND INDICATORS

The charge algorithm is as follows;

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: 4-6A, Flashing Red/Green:2-4A, Green 0-2A

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-2205:

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.

Waterproof: The RTIC-2205 is completely waterproof.

Vibration Tolerant: The RTIC-2205 is encapsulated an UL approved, flame retardant material providing rigid support for all internal components.

5 ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	Conditions
V_{AC}	AC Supply Voltage	200-240	VAC	47Hz – 63Hz
IAC_{FAST}	AC Current	2.0	Amps 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	29.1	29.2	29.5	V	25 °C
V_{FLOAT}	Float voltage	26.8	27.2	27.4	V	I_{OUT} < 1.0 A, 25°C
I_{FAST}	Fast charge current	4.0	5.0	6.0	A	$V_{BATTERY}$ = 24V
$I_{ABSORBTERM}$	Absorption mode charge termination current	.75	1.0	1.25	A	Transition from Fast Charge to Absorption
$I_{FLOATTERM}$	Float charge termination current	2.3	2.7	3.0	A	Load Applied after charger in Float Mode
$I_{STANDBY}$	Standby Current		10		ma	AC Off

7 PHYSICAL CHARACTERISTICS of RTIC-2205

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)