

Chargetek CT500-3 Lead-Acid Battery Charger Specification

1 INTRODUCTION

This document establishes the performance of the Chargetek CT500-3 Lead-Acid Battery Charger.

2 DESCRIPTION

The CT500-3 is a two-output lead-acid battery charger utilizing a three-state charge algorithm. The two outputs are electrically isolated. The CT500-3 is intended for use with dual 12V or 24V (two 12V batteries in series) systems and operate from 220VAC 47-63Hz service. A battery with voltage greater than 9.5V must be connected to Output 1 for the charger to start.

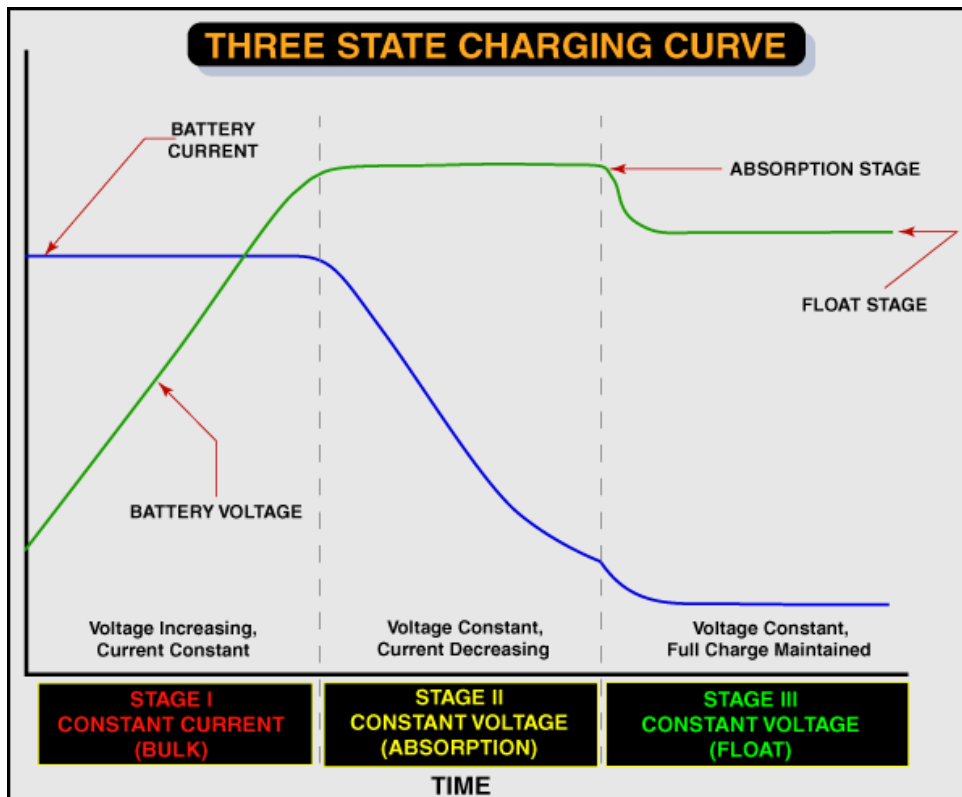
3 CHARGE ALGORITHM AND INDICATORS

The charging 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 LED Indicators:

Fast/Float: Off – Battery not connected or improperly connected
Red – Fast Charge or Absorption Mode
Green – Float Charge

Service: Red – Unit requires service

4 PROTECTION AND SAFETY FEATURES

The following protection features are incorporated into the CT500:

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. The service LED will illuminate.

Waterproof/

Vibration resistant: The electronic components of the CT500 are encapsulated in UL approved, flame retardant material.

Input Protection: An internal 3A/250VAC non-replacable fuse is in series with the AC Line and a grounding prong is provided.

5 ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	Conditions
V_{AC}	AC Supply Voltage	200-264VAC	VAC	47Hz – 63Hz
I_{ACFAST}	AC Current during Fast Charge	2.0	Amps AC	200VAC
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
$V_{FASTTERM}$	Bulk termination voltage	14.6	14.7	14.9	V	25 °C
V_{FLOAT}	Float voltage	13.4	13.6	13.7	V	$I_{OUT} < 0.5 A$, 25°C
I_{FAST}	Bulk charge current	5.0	5.5	6.0	A	$V_{BATTERY} = 12V$, Total of both outputs
$I_{ABSORBTERM}$	Absorption mode charge termination current	0.4	0.7	.85	A	
$V_{FLOATTERM}$	Float charge termination voltage	11.2	11.5	11.7	V	Load applied during float
$I_{STANDBY}$	Standby Current		6		ma	AC Off

7 PHYSICAL CHARACTERISTICS

Size: 6" x 3.16" x 2.6" – see Figure 1
Color: Black
Weight: 2.5 lbs.
AC Cord length: Standard 6 (consult factory for variations)
DC Cord length: Standard 6 (consult factory for variations)
DC Cord termination: Ring terminals (consult factory for variations)

