

Chargetek CT500-4 Lead-Acid Battery Charger Specification

1 INTRODUCTION

This document establishes the performance of the Chargetek CT500-4 Lead-Acid Battery Charger.

2 DESCRIPTION

The CT500-4 is a one-output, 3Amp lead-acid battery charger utilizing a three-state charge algorithm. The CT500-4 is intended for use with 24V battery systems and operates from 220VAC 50-60Hz service. A battery must be connected to the output for the charger to operate.

The charge algorithm is as follows:

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

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

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

The following LED indicators are provided:

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

Service: Red – Unit requires service
 Off: Normal State

The following protection features are incorporated into the CT500-24:

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.

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

Waterproof/

Vibration resistant: The electronic components of the CT500-24 are encapsulated an UL approved, flame retardant material.

3 ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	Conditions
V _{AC}	AC Supply Voltage	200-264	VAC	47Hz – 63Hz
I _{ACFAST}	AC Current during Fast Charge	2.5	Amps AC	200VAC
T _{OPR}	Operating Temperature	-10 to 50	°C	Ambient
T _{STG}	Storage Temperature	-30 to 80	°C	
	Operating Humidity	99	% RH	

4 DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Minimum	Typical	Maximum	Unit	Conditions
V _{FASTTERM}	Bulk termination voltage	28.8	29.0	29.2	V	25 °C
V _{FLOAT}	Float voltage	26.8	27.0	27.2	V	I _{OUT} < 0.3 A, 25°C
I _{FAST}	Bulk charge current(adjustable)	0-2.7 (factory set per request)		3.2 (standard)	A	V _{BATTERY} = 25V
I _{ABSORBTERM}	Absorption mode charge termination current	0.50	0.70	.80	A	
V _{absft}	Absorption Mode Reactivation after Float	22.4	23	23.7	V	Load applied in float discharging battery
I _{STANDBY}	Standby Current		2		ma	AC Off

5 PHYSICAL CHARACTERISTICS

Size: 6" x 3.16" x 2.6" – see Figure 1
 Weight: 2.5 lbs.
 AC Cord length: 7" or 6'
 DC Cord length: 6'
 DC Cord termination: Ring terminals (can be changed upon request)

Figure 1 – CT500-24 Physical Dimensions

