

Battery Charger TC400-CAN-A60

Owner's Manual

Introduction

The TC400 Battery Charger is electrically compatible with Canon BP-A60/BP-A30 Li-Ion camera batteries.

Features

- Four simultaneous charge positions for fast charging of multiple batteries.
- Fast, safe, and reliable charging.
- The charger's design is based on modern "Gas Gauge" technology. This determines battery capacity by monitoring the amount of charge input or removed from a rechargeable battery. The multifunction LCD display with backlight shows charge in progress data: voltage, estimated percent of readiness, and actual amount of charge in Ah input to the battery after battery insertion.
- Test/discharge circuit for complete battery characterization (optional).
- Wide range input power compatibility (100-240VAC 50-60Hz).
- Compact, lightweight design for easy portability.

Batteries

The charger is capable of charging 4 batteries at the same time. It accepts Canon BP-A60/BP-A30 batteries.

Charging time

The time to full charge depends on the battery pack rated capacity, its state of charge prior to insertion, and its age. A fully discharged new BP-A60 90 Wh battery pack will be fully charged (more than 90%) in about 5 hours or less. Since a depleted battery pack absorbs charge current faster, than a partially charged one, most of the charge energy is absorbed during the initial stage of charging and then the rate of charge levels off towards the end.

Charge channels

All 4 charge channels are fully independent from each other; charge initiation and termination depend on a battery's state of charge. An LCD display indicates each battery's state of charge, in voltage, percent of readiness (estimated), and amount of charge in Ah input in it since the battery insertion.

Test/Discharge circuit (optional)

With the Test/Discharge circuit installed, the charger becomes a complete battery management system enabling battery characterization, as well as identifying anomalies resulting from aging and other deficiencies.

The test performed is a full charge-discharge-full charge routine. This test will identify the true capacity of the battery displayed on the LCD panel. The discharge circuit approximates actual real life discharge, as seen by the battery in normal camera use. The circuit is associated with channel 1.

Note:

- *Full charge-discharge-full charge cycle of a 90 Wh battery pack takes up to 24 hours.*

Operation

Charging

Operation of the charger is fully automatic. Mount any battery to any open position on the charger and the charger will initiate the charge routine. While charging is in progress, the LCD display will indicate the battery voltage, estimated readiness in percent, and amount of charge accepted by the battery. Upon charge completion, the display will report the position number (1-4), amount of charge the battery has absorbed, and the completion message.

Upon the battery insertion, the charger will identify the battery's state of charge, and initiates the appropriate charge regimen. If the inserted battery is fully charged, it cannot safely absorb charge. The charger will display the "# 1(2,3,4) Ready" message.

Note:

- *Estimated readiness is intended for the "charge in progress" status information. Accuracy may vary for an old or new battery, and between different sizes.*
- *Amount of charge absorbed by the battery is displayed from the moment of insertion. If a fully depleted battery charged in full, the charge displayed is equal to the actual battery capacity in Ah.*
- *Upon the battery removal, please wait 2-3 seconds before inserting a new battery in the same position, as the charger channel needs this time to initialize.*

Status LEDs

LEDs help to quickly identify charging state.

1. Fast blink Battery is inserted; charge in progress
2. On Battery is ready (charged over 90%)
3. Slow blink Test in progress

Testing (optional feature)

- Insert the battery to be tested in position 1.
- Press "Test" button

A letter "t" will be displayed while channel 1 status information is shown

The charger will fully charge the battery, fully discharge using its internal load (LCD will display "Discharging"), and then fully charge for complete readiness. The amount of charge delivered to the load is displayed on the LCD panel. This is the true battery charge capacity in mAh.