DOLGIN
CAMERA POWER

Battery Charger TC400

Owner's Manual

Introduction

The TC400 Battery Charger is electrically compatible with all 7.2V Li-Ion camera batteries rated 2200mAh or higher. The modular design allows for different battery models to be charged and tested when the appropriate adapter plate is fitted. Because the charger is software controlled, its functionality allows for flexibility in charging and testing of batteries used. In addition to charging, battery testing and camera power supply options are available. With the appropriate power cord, the charger can be powered by a 12V automobile power source.

Standard Features

- Four simultaneous charge positions for fast charging of multiple batteries.
- Fast, safe, and reliable charging. The battery pack can be left on the charger after the charge is complete.
- 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 mAh input to the battery after battery insertion.
- Wide range input power compatibility (100-240VAC 50-60Hz), 12V with the DC cigarette lighter cord.
- Compact, lightweight design for easy portability.

Expansion Options

Thanks to modular design and software based functionality, the charger provides ultimate flexibility for various video applications. Several expansion options are available.

- Test/discharge circuit for complete battery characterization.
- Camera power 7.2V (up to 1A)
- Automobile power source using the DC cigarette lighter cord.

Batteries

The charger is capable of charging 4 batteries at the same time. It accepts Sony L/M (VX2xx or similar), Panasonic DVX100/HVX200/HMC150, Canon BPxx (XL/GL), and JVC BN-VF823 style batteries. The charger must be configured with the appropriate plate to match the battery style. **The battery must to be rated at least 2200 mah capacity**, as smaller size battery packs are not designed to accept the charger fast charge.

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 2800 mAh battery pack will be fully charged (more than 90%) in about 2.5 hours. A 5600 mAh pack will take approximately 3.5 - 4 hours to charge. 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 mAh 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 closely approximates actual real life discharge, as seen by the battery in normal camera use. **The circuit is associated with channel 1.**

Camera Power Output (optional)

The camera power supplied is 7.2V up to 1.5A. The charger is capable of providing camera power, while charging batteries. When all 4 fully discharged batteries are inserted, the rate of charge will be automatically reduced as needed in order to balance total power consumption. This results in a slight lengthening of the total charge time.

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 and makes.*
- *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 mAh.*
- *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.