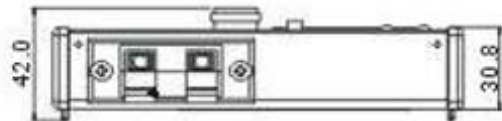
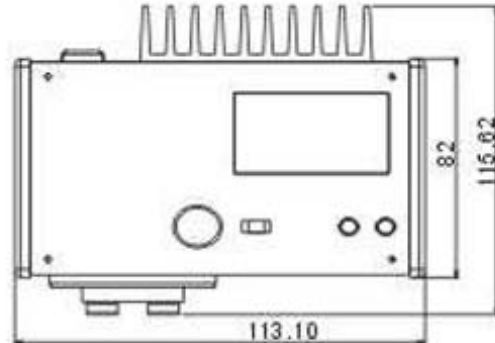


GWS

GWS-MC-2002 MICRO PROCESSOR QUICK CHARGER



Features

1. Input Voltage range: 9~15V DC
2. Step up-down converter, 4~12 cells of 50mAh~3000mAh Ni-Cd or Ni-MH pack can be charged rapidly.
3. Automatic Delta-peak cutoff prevents battery overcharge.
4. Output port polarity and short protection.
5. Maximum charge time: 90 minutes safety cutoff.
6. Charge current: 0.25~6A continuous.
7. Large scale current-meter.
8. Sturdy aluminum case and heat-sink for maximum heat dissipation.

Operation instruction:

1. When the charger connects to the power source, the red Fast-LED will flash and then goes off which means the system are in normal condition. Select battery cells switch to match the number of cells you are charging.
2. When the battery connects to the charger, the charger does a short automatic function check. If the battery is all in normal condition, the red Fast-LED will turn on. The charger will start charging automatically after 8 seconds. You are now able to adjust the current at you desire. (Current Adjust %)
3. When the charger starts the quick charge, it will begin to detect the Delta Peak Voltage and the peak voltage automatically. But under the following conditions, both of green and red lights will go off.
 - (a) The battery voltage exceeds the normal range. Such as the battery is too old or one of the battery in the pack is defective.
 - (B) The charger has been detected the Delta Peak Voltage in abnormal condition 8 times.
4. When the battery is fully charged, the red Fast-LED will turn off and turn to trickle charge mode automatically (green LED on). When the charger changes from quick charge to slow charge, which indicate that battery is fully charged and it can be used at any time. However, charger will continue refreshing the battery in every 1 minute (about 2 seconds) automatically to keep up voltage and capacity of the battery.

Special Instruction:

1. What is the charge rate of 1C, 2C, 1/2C?

For example if the battery capacity is 1000mA-H

1C is: uses 1000mA(1A) charge current to battery (the charge current is equal to the battery capacity), time of full charged is about an hour.

2C is: uses 2000mA(2A) charge current to battery (the charge current is 2 times of battery capacity), time of full charged is about half hour.

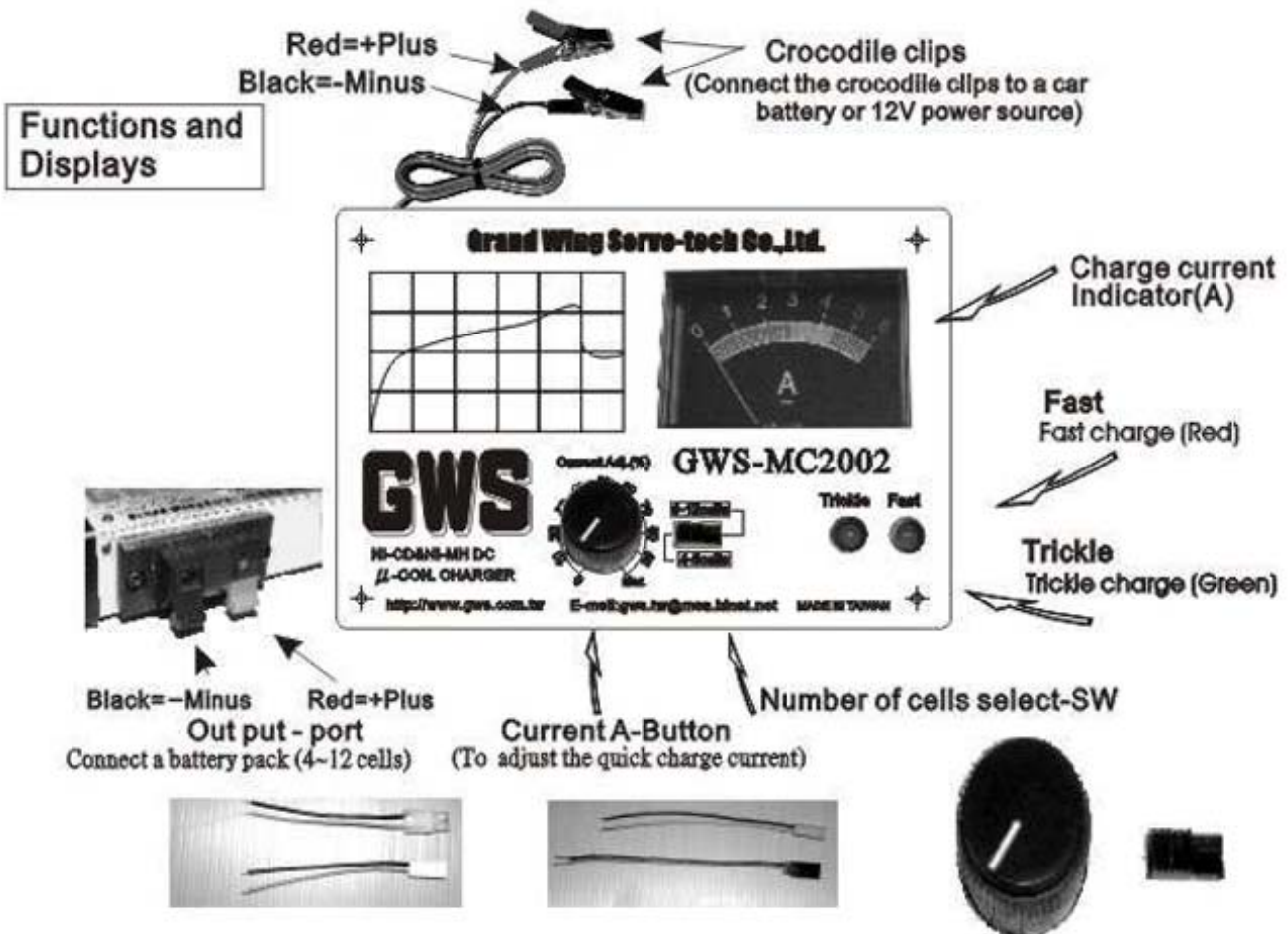
1/2C is: uses 500mA(0.5A) charge current to battery (the charge current is half of battery capacity), time of full charged is about two hours.

According to these examples above, we can know that full charged time for 3C (3A) is about 20 minutes and for 4C (4A) is about 15 minutes.

The unit is mAh (milli-ampere-hour). For an example: 1000mAh indicates 1000mA discharge current which could afford an hour discharge time, 1000mA=1A, 100mA=0.1A).

2. Safety Timer

The safety timer will be activated (after 90 minutes) if the quick charge current is adjusted too low. Then the battery will not be fully charged in time. Therefore, this charger is suitable for 1.5C above charge rate use only. Do not use charge rate below 1.5C, otherwise, it will cut off the power too early which would cause the batteries not fully charged.



Grand Wing Servo-tech Co., Ltd.

4F, 183, SEC. 1, TATUNG ROAD, SHIJR CITY, TAIPEI HSIEN 221, TAIWAN, R. O. C.

TEL: +886-2-2647-0057 (Rep.) FAX: +886-2-2643-0292

<http://www.grandwing.com.tw> or <http://www.gws.com.tw>

E-mail:gws@ms2.seeder.net gws.tw@msa.hinet.net