



## **BATTERY MANAGEMENT SYSTEM OPERATING INSTRUCTIONS (5 & 10 Bank)**

**Simultaneously charges and / or maintains up to 5 or 10 batteries.  
3-Year LIMITED Warranty on MATERIAL & WORKMANSHIP ONLY**

- 1. AMBER LIGHT:** This is the **POWER ON** indicator that turns on when the charger is plugged into AC power: 110 or 220 Volt wall plug (factory setting).
- 2. BATTERY CONNECTIONS:**
  - a) **Positive (+) lead alligator clip** of Battery Tender® to **positive (+) battery post.**
  - b) **Negative (-) lead alligator clip** of Battery Tender® to **negative (-) battery post.**

**Note: If the electrical connections are not correct, then no red or green indicator lights will come on.**
- 3. RED LIGHT:** When only the red light is on it indicates that the battery is correctly connected and the Battery Tender® is charging it. The Battery Tender® will deliver its full rated current (approximately 2 amperes) until the green light starts flashing.
- 4. GREEN LIGHT:** When the green light begins to flash, while the red light is still on, the battery is charged to approximately 80% of its full capacity. During this time, the Battery Tender® charge current gradually decreases. The green light continues to flash for 8 hours or until the battery is fully charged. Then the green stays on and the red light turns off.
- 5. RED & GREEN ALTERNATING LIGHTS:** When the red and green lights alternate, then either the 72-Hour Safety Timer has been activated or the battery is defective.
- 6. 72 HOUR SAFETY TIMER:** If the battery voltage does not increase to the absorption level within 72 hours after the battery is connected and the charger is turned on, the charger will automatically switch to maintenance mode, float voltage level. When this happens, the RED and GREEN lights will ALTERNATE at a slow rate. Check the battery condition. It may indicate that a very large, good battery is not fully charged, or that a smaller size battery is defective. Or there may be a high resistance connection, but not high enough to be an open circuit, otherwise both red and green lights would be out.
- 7. SPARK FREE:** All Battery Tender® Battery Management Systems are **SPARK FREE!!** You cannot damage the battery or charger if the clips touch each other. The Battery Tender®'s **Advanced Micro-Chip Circuitry** will not activate until both the positive and negative lead clips are correctly connected to a battery. **You can even leave the lead clips clamped to each other without the danger of shorting or causing a dangerous spark. THE CHARGER WILL NOT OPERATE IF CONNECTED INCORRECTLY.**

## WHEN DOES THE FAN RUN?

The fan only runs whenever a charger is connected to a battery, and the charger is plugged into AC power. The fan ensures proper ambient temperature for the charger circuitry throughout the entire charge cycle. **To avoid unnecessary risk of temperature related problems, please ensure that there is at least a 2 inch OPEN SPACE on both sides of the charger housing. This is to provide a clear air flow path for both the fan and the vent.**

## IS THE BATTERY DEAD? (LIGHTS WON'T LIGHT)

**If the battery is totally dead (below 3 volts) the Battery Tender® will not start. This is due to its internal safety circuit.** The charger safety circuit must sense more than 3 volts before it will allow the charger to turn on. **If the battery voltage is below 3 volts, the charger will not operate and the lights will not turn on.** Have the battery checked by a dealer if the battery voltage is very low. Most 12 volt lead acid batteries are likely to be defective if their voltage is below 9 volts.

## HOW LONG DOES IT TAKE TO CHARGE A BATTERY?

Both the 5 and 10 bank Battery Tender®s deliver 2 amps per output during the bulk charge period. For each hour of operation, that means that this charger delivers 2 amp-hours to the battery. For example if you have a 20 amp hour capacity battery that is fully discharged, then it would take approximately 10 hours to fully recharge.

**(Amps x Hours = Amp Hours)**

or stated another way:

**(Charge Current x Time on Charge = Capacity Returned to the Battery)**

Whenever time permits, Deltran recommends that you let the Battery Tender® finish charging the battery, indicated when the green light comes on and does not flash. We make this recommendation even though the total time required by the Battery Tender® to turn on the green light may be longer than you expect. Historically, the results of laboratory and field testing have shown that this is better for the battery and that it helps the battery achieve longer service life.

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