



Deltran Battery Tender

Vibration Resistant

Waterproof

12 & 24 Volt

Single Voltage Output Battery Chargers



Note: Battery Tender Waterproof Vibration Resistant chargers are designed to accommodate the demanding charging requirements of high quality lead-acid batteries and should safely charge all lead acid battery types. Always check with the battery manufacturer to get the most complete charging recommendations that are consistent with your application.

The best way to eliminate sulfation is to prevent it!

Battery Tender® Vibration Resistant Waterproof (VRW) fully charges a battery and maintains it at the proper storage voltage without the damaging effects caused by trickle chargers (Especially Sulfation!)

- ◆ **BTP MICROPROCESSOR TECHNOLOGY**
- ◆ **4-STEP CHARGING (Initialization, Bulk, Absorption,& Float)**
- ◆ **WATERPROOF**
- ◆ **SHORT CIRCUIT PROTECTED**
- ◆ **REVERSE POLARITY PROTECTED**
- ◆ **OPTIMUM SHOCK & VIBRATION RESISTANCE**
- ◆ **2 YEAR WARRANTY (Material & Workmanship Only)**

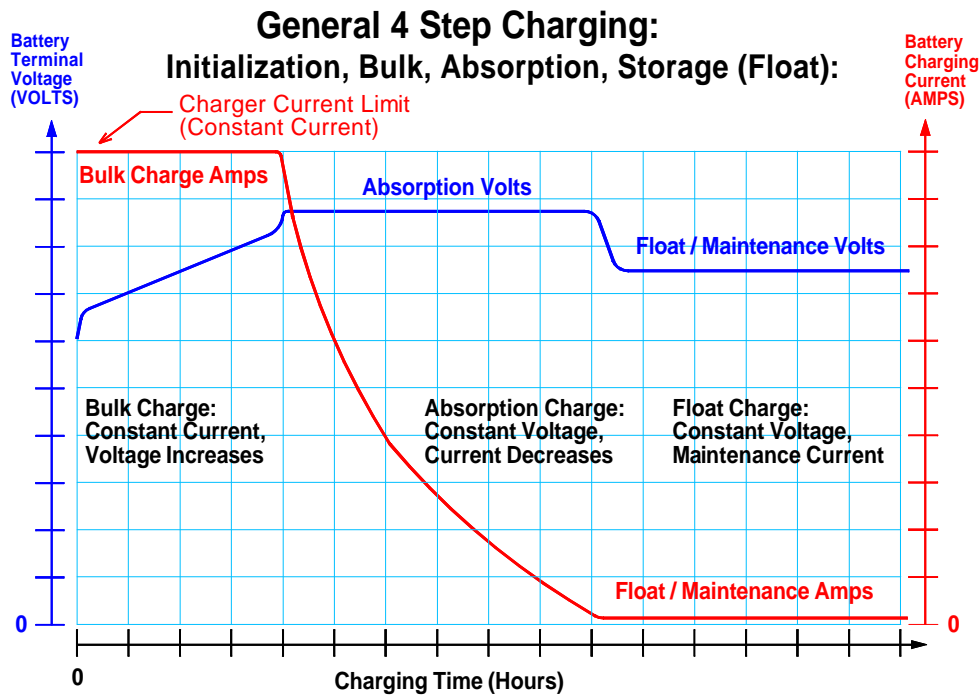
ORDERING INFORMATION	
Deltran PART NO.	DESCRIPTION
022-0157-1	12 Volt 5 Amp Output
022-0158-1	24 Volt 2.5 Amp Output
MSRP \$125.95	

TECHNICAL SPECIFICATIONS SUMMARY	
Input Voltage & Frequency	120 VAC, 50 / 60 Hz
DC OUTPUT (Nominal voltage & current values)	
Output Current	5 & 2.5 Amps
Output Voltage	12 & 24 Volts
Charger Output Voltage Amplitudes throughout the entire charge algorithm, including absorption and float maintenance, are consistent with the optimum charging recommendations of the major lead-acid battery manufacturers.	
Maximum Operating Temperature	50 °C Typical
Charger Case Dimensions: Approx. 5.2 in (132 mm) L (includes 0.2' total endplate thickness) x 5.0 in (127 mm) W x 2.0 in (51 mm) H (at the highest point). Allow an additional 3 in (76.2mm) (1.5 inch on each end of the length dimension) for safe bend of AC power cord strain relief and DC output cable harness.	
Shipping Weight with Cable Accessories	Approx: 4.0 lbs (1.8 kg)
Declaration of Conformity: These battery charger products are designed to meet or exceed the specific requirements of: UL-1236 and CSA 22.2. These products are UL Listed in File E206016, Volume 1.	
Design Conformance & Revision: All Deltran charger products are 100% inspected and electrically tested prior to shipment. All Deltran battery charger designs are proprietary and subject to change without notice. Deltran makes no specific claims nor does it either make or imply any specific guarantee or warranty with respect to either the physical configuration or performance of any of the battery charger products listed herein, including suitability for purpose or merchantability.	

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INDICATOR LIGHT OPERATION

- **RED** - When the red light is on, the charger is functioning normally and it is the process of fully charging the battery. The charger will automatically apply the optimum charging voltage and current values to the battery in the proper timing sequence.
- **GREEN** - When the green light is on and the red light is off, the battery charger is in the storage / float / maintenance mode of operation. In this mode the charger will maintain the battery at optimum voltage levels to maintain full charge.
- **GREEN FLASHING** - When the green light is flashing and the red light is on, the battery is approximately 80% charged. Deltran recommends not using the battery until the green light stops flashing, indicating that the battery is fully charged.
- **RED & GREEN ALTERNATING** - This is an abnormal indication. Check all connections between the charger and the battery. If this condition persists, contact technical support for assistance.

Step 1) Initialization: Red Light On, Green Light off: Monitor Circuit verifies appropriate battery voltage levels and good electrical continuity between the battery and the charger DC output.

Step 2) Bulk Charge: Red Light On, Green Light Off: Constant Current at Full Power. Switch to Absorption at 75% - 80% full recharge.

Step 3) Absorption Charge: Red Light On, Green Light Flashing: Constant Voltage at Absorption Level. This conditions the battery for maximum performance. Transition to Float Maintenance either by charge current threshold or fixed absorption timer.

Step 4) Float Charge: Red Light Off, Green Light On: Constant Voltage at Float / Maintenance Level. Keeps battery fully charged and maintains optimum specific gravity. Charge reset monitor protects battery against deep discharge from excessive appliance current draw.

APPLICATION INFORMATION

- ◆ Always operate the charger in a well ventilated area
- ◆ If no indicator lights come on after you plug in the AC cord, then check the AC power receptacle.
- ◆ If the green indicator light comes on too soon, check the battery and the output connections from the charger.
- ◆ It may take a long time for the green light to come on when charging a large battery.