

Battery Tender® Plus: Models: 12V1.25A and 6V1.25A

The Battery Tender® Plus

12 Volt, 1.25 Amp
6 Volt, 1.25 Amp



GENERAL DESCRIPTION:

The Battery Tender® Plus battery charger is a desktop, portable, linear power converter that has a true DC output at a maximum power level of approximately 18 or 9 watts respectively for the 12V and 6V models. Both models have a maximum output charging current of 1.25 amps.

NOTE: In recent years, the Sealed, GRT (Gas Recombinant Technology), AGM (Absorbed Glass Matte), Lead-Acid battery has enjoyed widespread acceptance in a variety of applications traditionally dominated by flooded battery technology. The Battery Tender® Plus battery charger circuitry provides a superior configuration to accommodate the more demanding recharge requirements of this superior battery technology. Although the original Battery Tender® battery charger will recharge AGM batteries, the full recharge time is longer than with the Battery Tender® Plus battery charger. This is because of the different implementation of the absorption charge mode between these two chargers. Those differences are spelled out in detail in other documents on the website. See Utility / Frequently Asked Questions.

OUTPUT CABLE CONNECTIONS: The battery charger DC output cable has a molded, quick disconnect plug. The ring terminal, alligator clip, and cigarette adapter output cable accessories all contain the mating plug.

STATUS INDICATOR LIGHTS: The following describes the operation of the status indicator lights:

- **RED FLASHING** - When the red light is flashing, the AC power is applied to the charger & the microprocessor circuitry is functioning properly, but the DC output cables are not connected correctly.
- **RED** - When the red light is on, the battery charger is in the process of fully charging the battery. In order to properly charge large capacity batteries, the charger may remain in this mode for several hours or even days.
- **GREEN FLASHING** - When the green light is flashing, and the red light is on, the battery is greater than 80% charged and may be removed from the charger and used if necessary. Leave the battery on charge until the green light is solid whenever possible. Once the green light begins to flash, it will remain flashing until either the battery charger output current drops below 0.1 amp, or until 6 to 8 hours has elapsed.



BATTERY TENDER® PLUS PRODUCT INFORMATION

- **GREEN** - When the green light is lit, the battery charger is in the storage mode of charge. In this mode the charger will maintain the battery at full charge.

SPECIAL TROUBLESHOOTING INFORMATION:

- 1) NEITHER OF THE CHARGER STATUS INDICATOR LIGHTS TURN ON:**
 - a) Disconnect the charger AC power plug from the AC outlet and recheck that the battery charger alligator clips or ring terminals are connected to the correct polarity battery terminals and that they are making a clean, tight connection.
 - b) Check to make sure that the AC outlet is supplying power by plugging in another appliance like a lamp, or check the outlet voltage with a voltmeter.

- 2) THE STORAGE/FLOAT MAINTENANCE STATUS INDICATOR LIGHT (GREEN LIGHT) GOES ON IMMEDIATELY WHEN CHARGING A BATTERY KNOWN TO BE DISCHARGED:**
 - a) The battery may be defective. Take the battery to the dealer to be tested.
 - b) The electrical connections between the charger and the battery may not be completely secured.

- 3) AFTER THE STORAGE/FLOAT MAINTENANCE STATUS INDICATOR LIGHT (GREEN LIGHT) HAS BEEN ON, AND THE AC POWER IS REMOVED FROM THE CHARGER AND THEN IMMEDIATELY RECONNECTED, IT SEEMS TO TAKE TOO MUCH TIME FOR THE GREEN LIGHT TO COME ON AGAIN.**
 - a) This is **NORMAL OPERATION** for the Battery Tender® Plus.
 - b) Whenever AC power is removed from the charger, including momentary AC power outages, the charge cycle resets. Therefore, the battery charge current either has to drop to below 0.1 amp or 6 to 8 must elapse before the green light stops flashing.

- 4) AFTER THE STORAGE/FLOAT MAINTENANCE STATUS INDICATOR LIGHT (GREEN LIGHT) HAS BEEN ON, THE RED LIGHT COMES ON.**
 - a) This is **NORMAL OPERATION** for the Battery Tender® Plus.
 - b) There has been a momentary AC power outage that reset the charge cycle.
 - c) There is some other load or appliance drawing power from the battery. When the battery voltage drops below 12.0V to 12.5V, the charge cycle resets.



BATTERY TENDER® PLUS PRODUCT INFORMATION

Battery Tender® Plus (12 & 6 Volt)					
Charger Specification Summary					
Deltran Part Number:	021-0128-1	021-0128-2	021-0128-3	021-0128-4	021-0144
Nominal Output:					
Voltage:	12 Volts	12 Volts	12 Volts	12 Volts	6 Volts
Current:	1.25 Amps	1.25 Amps	1.25 Amps	1.25 Amps	1.25 Amps
Input Voltage:	115 VAC	220 VAC	230 VAC	240 VAC	115 VAC
Input Frequency:	60 Hz	50 Hz	50 Hz	50 Hz	60 Hz
Maximum Input Current:	0.36 Arms	0.19 Arms	0.18 Arms	0.17 Arms	0.18 Arms
Nominal Efficiency:	55%	55%	55%	55%	55%
Nominal Power Factor:	0.8	0.8	0.8	0.8	0.8
Charger Output:					
Maximum Power: (+/- 3%) @ 25 °C	18 Watts				9 Watts
Maximum Current: During Bulk Charge	1.25 Amps				1.25 Amps
Absorption Voltage:	14.4 VDC = (2.4 vpc)				7.2 VDC = (2.4 vpc)
Absorption to Float Transition:	Charge Current drops: below 0.1 Amp or Absorption Charge Duration exceeds 6 Hours , or if battery voltage does not reach Absorption Charge level within 72 hours.				
Equalization Voltage:	NA				
Float Voltage:	13.2 VDC = (2.2 vpc)				6.6 VDC = (2.2 vpc)
Charge Reset: Battery Voltage Threshold	12 to 12.5 VDC (2 to 2.08 vpc)				6 to 6.2 VDC (2 to 2.07 vpc)
Output Regulation:					
Line (Typical):	Less than 1% at 120VAC				
Electrical Isolation:					
Input / Output:	1500 VAC				
Input / Chassis:	1500 VAC				
Output / Chassis:	500 VAC				
Operating Temp:	-20°C to 50°C				
Dimensions:	4.875 in(124 mm)L x 3.25(83 mm)W x 2.875 in(73 mm)H				
Weight:	2.7 lbs.				
Carton Size:	6 in(153 mm)L x 6 in(153 mm)W x 6 in(153 mm)H				
Shipping Weight:	3 lbs.				
Enclosure:	Powder Coated Aluminum Chassis				
Special Features:					
Short Circuit Protection:	YES				
Reverse Polarity Protection:	YES				
Spark Proof:	YES				
Temperature Compensation:	YES = -3.5mV/ °C/Cell				
Agency Listings: UL, ETL, CSA, etc.	Selected models are listed to UL-1236 and CSA 22.2 Contact the office in DeLand, FL for information on agency listings. Phone: 386-736-7900				

Table 1 Specification Sheet: Battery Tender® Plus (12V and 6V)



Battery Tender® Plus 6V1.25A:

Stage 1) Bulk Charge: Red Light On, Green Light Off, Constant Current = 1.25 Amps, Transition to Stage 2, Absorption Charge when battery voltage reaches 7.25 VDC.

Stage 2) Absorption Charge: Red Light On, Absorption Voltage = 7.25 VDC Transition to Float Charge when battery charging current drops below 0.1 amp or until 6 to 8 hours have elapsed.

Stage 3) There is no Equalization Charge, Go directly to stage 4.

Stage 4) Float Charge: Red Light Off, Green Light On. Float Voltage = 6.6 VDC. If an external load is applied to the battery while the charger is in stage 4, Float Charge, and if the battery voltage drops below a range between 6.0 to 6.25 VDC, then the charge cycle restarts.

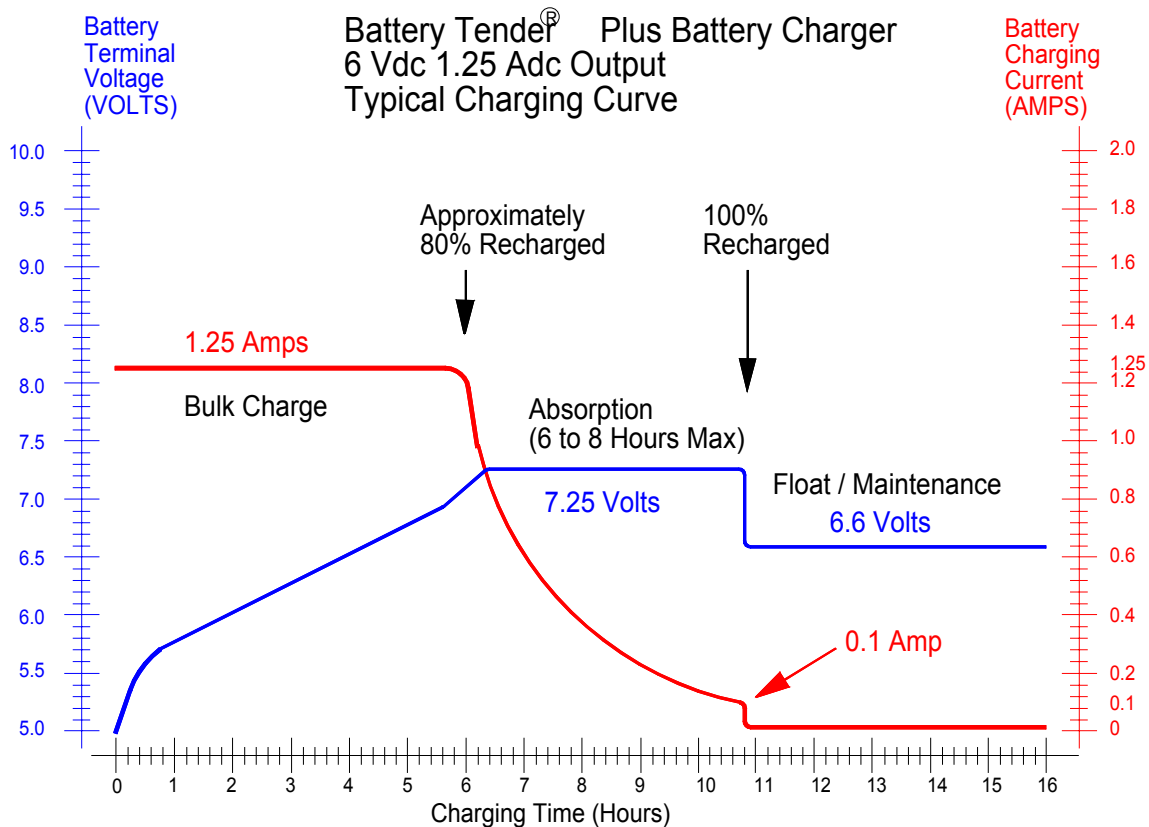


Figure 1 Charging Graph: Battery Tender® Plus 6V1.25A



Battery Tender® Plus 12V1.25A:

Stage 1) Bulk Charge: Red Light On, Green Light Off, Constant Current = 1.25 Amps, Transition to Stage 2, Absorption Charge when battery voltage reaches 14.4 VDC.

Stage 2) Absorption Charge: Red Light On, Absorption Voltage = 14.4 VDC Transition to Float Charge when battery charging current drops below 0.1 amp or until 6 to 8 hours have elapsed.

Stage 3) There is no Equalization Charge, Go directly to stage 4.

Stage 4) Float Charge: Red Light Off, Green Light On. Float Voltage = 13.2 VDC. If an external load is applied to the battery while the charger is in stage 4, Float Charge, and if the battery voltage drops below a range between 12.0 to 12.5 VDC, then the charge cycle restarts.

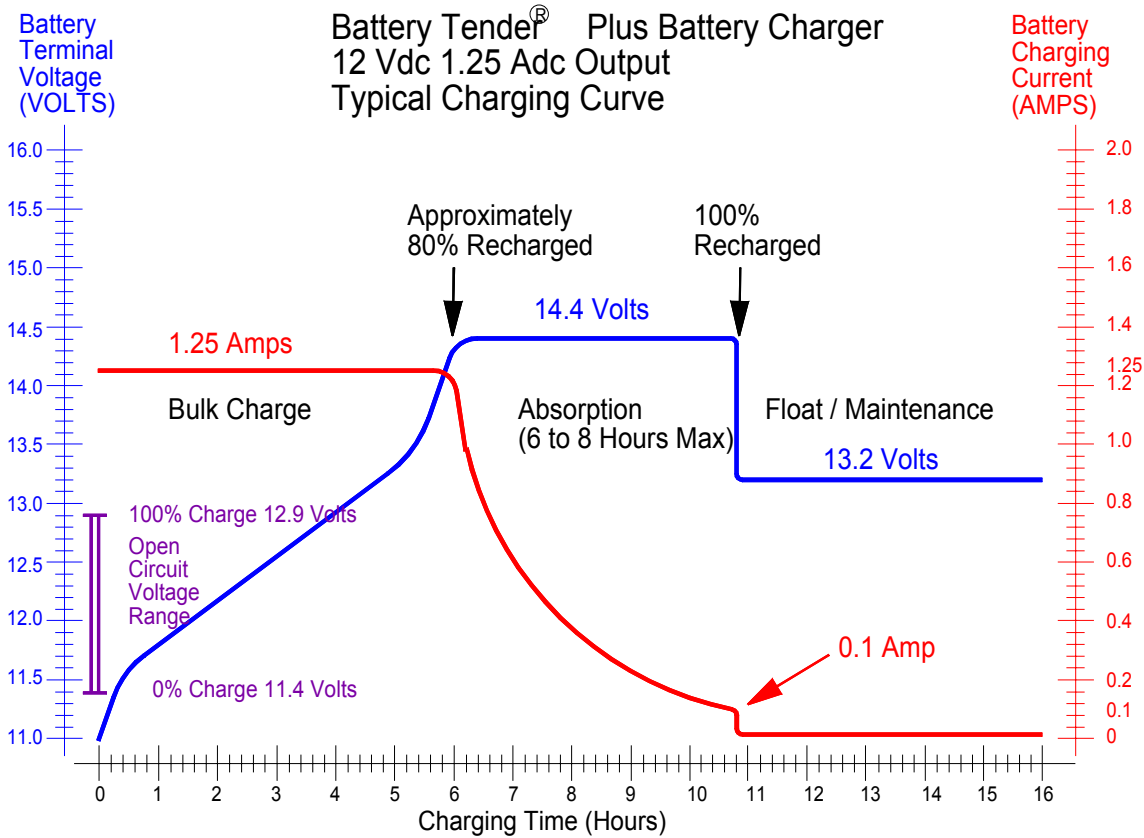


Figure 2 Charging Graph: Battery Tender® Plus 12V1.25A