Deltran Battery Tender® Power Plus

Boost/Engine Start/Charger/Maintainer

Designed for Six cell Lead-Acid (Standard), AGM & Four cell Lithium Iron Phosphate (LiFePO4) Batteries from 1.2 – 200Ah

IMPORTANT SAFETY INSTRUCTIONS

1) SAVE THESE INSTRUCTIONS – This manual contains important safety and operating instructions for battery charger model P/N 022-0227.
2) Do not expose charger to rain or snow.
3) Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
4) To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
5) An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
   a) That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
   b) That extension cord is properly wired and in good electrical condition; and
   c) That wire size is large enough for ac ampere rating of charger as specified in Table 1.

TABLE 1

Length of Cord, Feet/Meters	25/7.6	50/15.2	100/30.5	150/45.7
AWG Size of Cord	18	18	18	16

6) Do not operate charger with damaged cord or plug – replace the cord or plug immediately.
7) Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
8) Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
9) To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
10) **WARNING – RISK OF EXPLOSIVE GASES.**
   a) WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.
   b) To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products and on engine.
11) PERSONAL PRECAUTIONS
   a) Consider having someone close enough by to come to your aid when you work near a lead-acid battery.
   b) Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
   c) Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
   d) If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.

P/N 392-0370-R0

   e) NEVER smoke or allow a spark or flame in vicinity of battery or engine.
   f) Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
   g) Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
   h) Use charger for charging *Six cell Lead-Acid/AGM OR Three cell Lithium Iron Phosphate (LiFePO4) Batteries only*. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
   i) NEVER charge a frozen battery.
12) PREPARING TO CHARGE
   a) If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
   b) Be sure area around battery is well ventilated while battery is being charged.
   c) Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
   d) Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer's recharging instructions.
   e) Study all battery manufacturers specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
   f) Determine voltage of battery by referring to car owner's manual and make sure that output voltage selector switch is set at correct voltage. Do not use the battery charger unless battery voltage matches the output voltage rating of the charger.
13) CHARGER LOCATION
   a) Locate charger as far away from battery as dc cables permit.
   b) Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
   c) Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery.
   d) Do not operate charger in a closed-in area or restrict ventilation in any way.
   e) Do not set a battery on top of charger.
14) DC CONNECTION PRECAUTIONS
   a) Connect and disconnect dc output clips only after setting any charger switches to ″off″ position and removing ac cord from electric outlet. Never allow clips to touch each other.
   b) Attach clips to battery and chassis as indicated in 15(e), 15(f), and 16(b) through 16(d).
15) FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:
   a) Position ac and dc cords to reduce risk of damage by hood, door, or moving engine part.
   b) Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.
   c) Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N,–) post.
   d) Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see (e). If positive post is grounded to the chassis, see (f).
   e) For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.

f) For positive-grounded vehicle, connect NEGATIVE (BLACK) clip from battery charger to NEGATIVE (NEG, N, –) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
g) Connect charger AC cord to electrical outlet.
h) When disconnecting charger, turn switches to off, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.
i) See operating instructions for length of charge information.

16) FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

a) Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, –) post.
b) Attach at least a 60cm (24-inch) long 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, –) battery post.
c) Connect POSITIVE (RED) charger clip to POSITIVE (POS, P, +) post of battery.
d) Position yourself and free end of cable as far away from battery as possible – then connect NEGATIVE (BLACK) charger clip to free end of cable.
e) Do not face battery when making final connection.
f) Connect charger AC cord to electrical outlet.
g) When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.

- The supply cord cannot be replaced. If the cord is damaged the appliance should be scrapped.

- Examine the battery charger regularly for damage, especially the cord, plug and enclosure; if the battery charger is damaged, it must not be used until it has been repaired.

This symbol indicates separate collection for electrical and electronic equipment

USER INSTRUCTIONS

AUTOMATIC CHARGING AND BATTERY STATUS MONITORING: Battery Tender® chargers are completely automatic and may be left connected to both AC power and to the battery that it is charging for long periods of time. The charger output power, voltage, and current depends on the condition of the battery it is charging.

ATTENTION: The Battery Tender® CHARGER HAS A SPARK FREE CIRCUITRY. The output alligator clips will not spark when they are touched together. The Battery Tender® charger will not produce an output voltage until it senses at least 2-3 volts from the battery. It must be connected to a battery with the correct polarity before it will start charging a battery. Therefore, if you plug the AC power cord into an AC power outlet, and if the output alligator clips are not connected to a battery, and if you touch the alligator clips together, there will be no electrical spark.

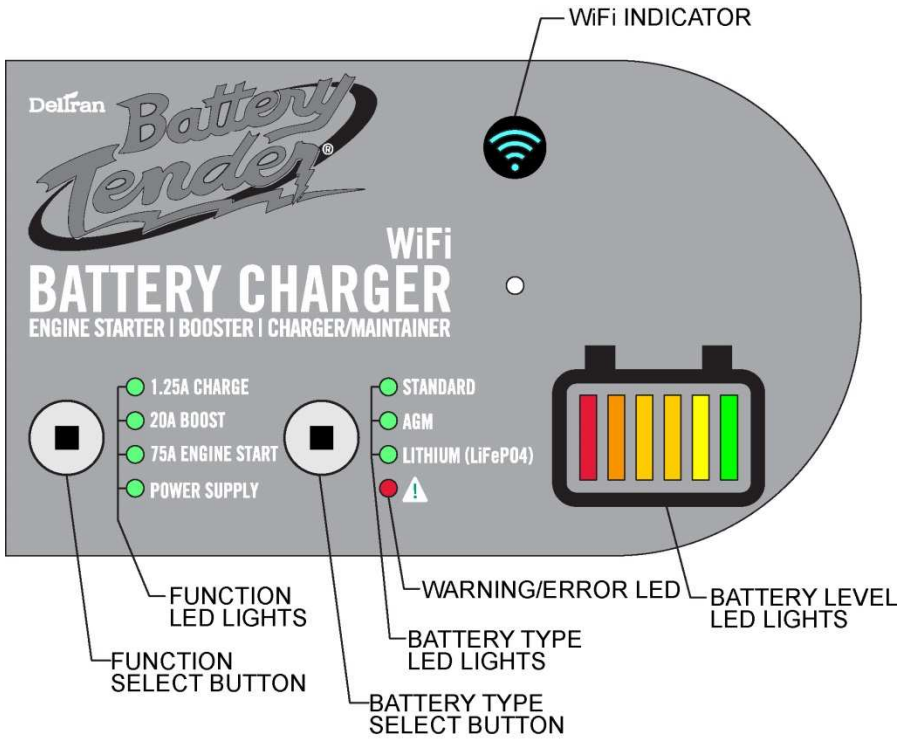
REVERSE POLARITY PROTECTION: The battery charger is protected against any damage due to the DC output leads being connected to the opposite polarity battery post. **ELECTRICAL SPARKING** will occur when the clips are connected in this way.

NOTE:
THE OUTPUT CLIPS MUST BE CONNECTED TO A BATTERY BEFORE THE CHARGER CAN PRODUCE AN OUTPUT VOLTAGE, EXCEPT WHEN IN THE DC OUTPUT MODE

WORKING WITH A DEAD BATTERY OR A BATTERY WITH A VERY LOW VOLTAGE:
If you try to charge a dead battery either lead-acid (standard) or AGM having a voltage between 2-3 volts (8V for Li-Ion), the Battery Tender® charger will not start. An internal safety circuit prevents the charger from generating any output voltage unless it senses at least 3 volts (8V for Li-Ion) at the charger output.

NOTE:
If a 12-volt, lead-Acid (standard) battery has an output voltage of less than 9 volts when it is at rest, when it is neither being charged nor supplying electrical current to an external load, there is a good chance that the battery is defective. As a frame of reference, a fully charged 12-volt, lead-Acid battery will have a rest-state, no-load voltage of approximately 12.9 volts. A fully discharged 12-volt, lead-acid battery will have a rest-state, no-load voltage of approximately 11.4 volts. That means that a voltage change of only 1.5 volts represents the full range of charge 0% to 100% on a 12-Volt, lead-acid battery. Depending on the manufacturer, and the age of the battery, the specific voltages will vary by a few tenths of a volt, but the 1.5-volt range will still be a good indicator of the battery charge %.

CHARGER FUNCTIONS/MODES



OUTPUT POWER MODE DETAILS

1. **1.25A CHARGE:** This mode will charge and maintain a 12 volt battery for long periods of time. This function is completely automatic and will never over charger your battery. The charger output power, voltage, and current depends on the condition of the battery it is charging.

2. **20A BOOST:** This mode will Boost the battery at a maximum rate of 20Amps until the battery voltage increases to approximately 14 volts. When the battery voltage reaches the target, the charger then exits the Boost mode. Li-Ion batteries are not supported in this mode.

3. **75A ENGINE START:** This mode will first use 10Amps to increase the battery voltage to at least 10.5 volts. Once the battery reaches 10.5 volts, the charger is ready for an engine start. If the voltage is less than 9 volts, the charger assumes the key has been turned. Now the charger applies up to 75Amps to assist starting the engine. After five (5) seconds, the charger will stop the 75Amp current and go into cool down mode for two (2) minutes. Li-Ion batteries are not supported in this mode.

4. **POWER SUPPLY:** This mode provides low voltage DC current of one (1) Amp at 13 volts. The Power Supply function is for use as only a memory saver when changing out a battery.

5. **WARNING/ERROR LED:** There are safety timers built into the charger which vary depending on which battery type you have selected. These timers will prevent a bad battery from being over charged if it does not reach optimum voltage within these time frames. Have your battery checked if this occurs. This LED also indicates if the charger alligator clips are connected backwards to the battery (reverse polarity). Lastly, if this LED is blinking, this is the indication the WiFi is off. Refer to the WiFI section to turn it back on.

CHARGER OPERATION

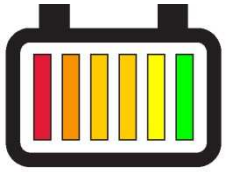
1) **POWERING UP:** When you first plug the charger into a power outlet, all of the LED's and battery level lights will illuminate for about two (2) seconds.

2) **FUNCTION SELECT:** To select an output mode, (example 20A Boost) simply press and hold the select button down for three (3) seconds to change modes and scroll through the selections.

3) **BATTERY TYPE SELECT:** To change the battery type, a short press will change the battery type and scroll through the selections.

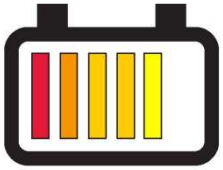
4) **OUTPUT MODE LED OPERATION:** Once a battery is connected, the charger can either be in active or idle mode. When the LED is blinking, the charger is in idle mode, and the output is off. When the LED is solid, the charger is in active mode and the output is on.

5) **1.25A CHARGE/MAINTENANCE:** The alligator clips must be connected to the battery to start the charge cycle. When the clips are connected, the battery level indicator will illuminate to show the state of charge. To start the charge cycle, press the charge select button or wait four (4) seconds. The charge LED will turn on solid and the battery level lights will begin to illuminate from left to right indicating a charge is in progress. All the battery level lights will be on solid when the battery is fully charged and in maintenance mode.



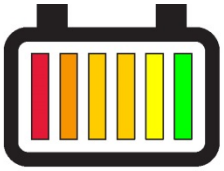
WHEN ALL SIX (6)
LIGHTS ARE SOLID
THE BATTERY IS FULLY CHARGED
AND IN MAINTAINANCE MODE

6) **20A BOOST:** To start the boost cycle press the function select button until the 20A Boost led is illuminated. Connect the alligator clips to the battery and the LED's in the battery level indicator will illuminate. Then press the boost select button and the LED will turn solid to begin the boost cycle. The five (5) left battery level lights will begin to illuminate from left to right until they are all solid and the battery has reached 14 volts. The boost cycle will then shut off.



WHEN ALL FIVE (5)
LIGHTS ARE SOLID
THE BOOST IS COMPLETE

7) **75A ENGINE START:** To start the engine start cycle, press the function select button until the engine start LED is blinking. Connect the alligator clips to the battery to begin the engine start cycle. In order to begin the engine start mode, the battery voltage needs to be above 10.5 volts. If this is not the case, the charger will enter Boost Mode (All battery LEDs blink).

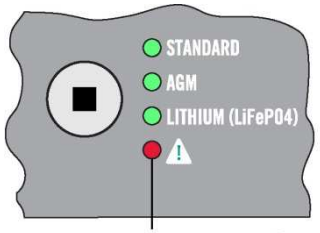


WHEN ALL SIX (6)
LIGHTS ARE BLINKING
THE CHARGER IS BOOSTING
THE BATTERY

Once the battery has reached 10.5 volts, an engine start can be performed. At this point, the Battery LEDs will light up in sequence from left to right.

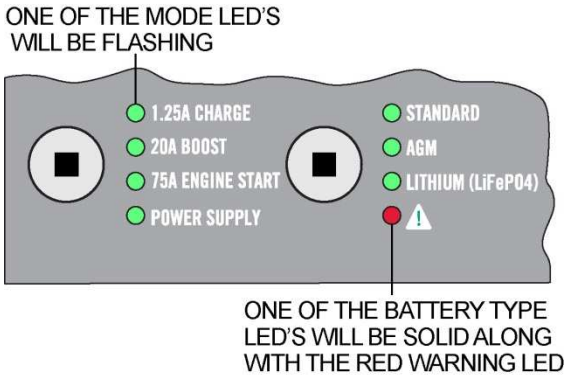
8) **POWER SUPPLY:** To start the Power Supply mode, press the function select button until the Power Supply LED is illuminated. Connect the alligator clips to the battery. Then press the power supply button, the power supply LED will then turn solid green while also turning the power supply on.

9) **WiFi:** When AC power is applied to the charger the WiFi will automatically turn itself on. If you wish to turn the WiFi off, hold the battery select button down for ten (10) seconds.
The WARNING/ERROR LED will blink to indicate the WiFi is off.
To turn the WiFi back on, simply press the select button down for ten (10) seconds.



WHEN THE RED WARNING/ERROR
LED IS BLINKING THE WiFi IS OFF

10) **REVERSE POLARITY CONNECTION:** If the alligator clips are connected to the incorrect battery post (Negative clip to Positive battery post, Positive clip to Negative battery post) some sparking will occur. This will not damage the charger. The following light sequence will occur to also show reverse polarity.



11) **NO BATTERY CONNECTION:** If there is either no connection or a bad connection between the alligator clips and the battery none of the battery LED lights will illuminate.

Battery Tender App Setup

1) Look for the Battery Tender App on the Google Play and Apple App store.

2) Download the app and install it.

3) Open the app and follow the easy guide to connect your mobile device to your Battery Tender.

4) We recommend connecting the device to a WiFi network with internet access and turning on Push Notifications to use all of the functions of the app and have access to your Battery Tender® from anywhere in the world with an internet connection.

5) Please check www.batterytender.com for the latest instructions.

TROUBLESHOOTING

PLEASE CHECK OUR WEBSITE FOR FAQ's
www.batterytender.com

1) If the charger does not turn on.
   a. Check to make sure the AC outlet is supplying power by plugging in a lamp, an appliance, or a voltage meter.

2) The battery charge percentage goes immediately to 100% when charging a discharged battery.
   a. The battery is probably defective, take the battery to the dealer to be tested.

3) When charging a battery, and the battery charge never reaches 100% charged.
   a. The battery may be defective, take the battery to the dealer to be tested.
   b. The battery has an excessive current draw, remove or disconnect the battery from the equipment.

FCC Warning

Title 47 Subpart, 15.105(b)
Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ICES-001: Industrial, Scientific, and Medical (ISM) Radio Frequency Generators

This product has been tested with the listed standards and found to be compliant with the Code of Industry Canada ES-001 and the measurement Procedure according to CISPR 11.

CAN ICES-1/NMB-1

Warranty

This product is covered by a
5 Year general limited warranty

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