

# PRO Charging Systems

## Safety, Installation and Operating Instructions

*Instructions importantes concernant la sécurité*

### Manual for the Following Battery Discharger:

**BD6812QUAD**



 **DeltaVolt**<sup>®</sup>  
Intuitive Charging Technology

 **DUAL PRO**<sup>®</sup>  
Pro Quality Pro Performance



 **DeltaView**  
Intuitive Charge History Analysis

**IMPORTANT NOTICE:**

Please save and read these safety, operating and installation instructions before installing or applying AC power to your Pro Charging Systems (PCS) discharger. Contact technical support at PCS with any product, installation, or service questions (615.471.5300).

Pro Charging Systems, LLC  
LaVergne, TN 37086-3539

**INSTRUCTIONS FOR THE FOLLOWING BATTERY DISCHARGER MODEL:**

MODEL	AC SUPPLY	DC DRAW	Battery System	Battery Capacity
BD6812QUAD	85 – 265 VAC, 1A, 50-60 Hz	75 amps @ 6 volts	6 volt, 3 cell	75-435 ah(20hr rating)
BD6812QUAD	85 – 265 VAC, 1A, 50-60 Hz	56 amps @ 8 volts	8 volt, 4 cell	75-435 ah(20hr rating)
BD6812QUAD	85 – 265 VAC, 1A, 50-60 Hz	25 amps @ 12 volts	12 volt, 6 cell	75-200 ah(20hr rating)

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**IMPORTANT SAFETY INSTRUCTIONS***INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITÉ*

**SAVE THESE INSTRUCTIONS.** This manual contains important safety and operating instructions for future reference.

*CONSERVER CES INSTRUCTIONS. CE MANUEL CONTIENT DES INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITÉ ET LE FONCTIONNEMENT.*

**Understand and relate the Hazard Levels and Signal Words utilized in this manual with the following definitions:**



This symbol means: Immediate hazards, which will result in severe personal injury or death.



This symbol means: Hazards or unsafe practices, which could result in severe personal injury or death.



This symbol means: Hazards or unsafe practices, which may result in minor personal injury, product or property damage.



This symbol means BE ALERT! Your safety, or the safety of others, is involved!

## PERSONAL SAFETY PRECAUTIONS



**Always read all instructions before using your discharger!**

1. **Wear complete eye protection and clothing protection.** Avoid touching eyes while working near battery. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, eyes, or other surfaces. 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 seek medical attention promptly.
2. **Dress properly.** Wear protective, electrically nonconductive clothes and nonskid footwear. 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. Wear restrictive hair covering to contain long hair.
3. **Avoid working alone.** Be sure someone is within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
4. **Stay alert.** Watch what you are doing, and use common sense. Do not operate this product when you are tired.
5. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, battery dischargers, or extension cords.
6. **Keep work area clean.** Cluttered areas invite injuries.
7. **Observe work area conditions.** NEVER smoke or allow a spark or flame in the vicinity of battery or engine. Don't expose to rain. Keep work area well lit.
8. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across electrical cables or frames.
9. **Avoid electrical shock.** To reduce risk of electrical shock, unplug discharger from outlet before attempting any maintenance or cleaning.
10. **Do not operate discharger with damaged electrical cord or plug.** To reduce risk of damage to the electrical plug and cord, pull by plug rather than by the cord when disconnecting discharger. If damaged, replace the electrical cord or plug immediately.
11. **Store idle equipment.** When not in use, store equipment in a dry location to inhibit rust. Always lock up tools and equipment and keep out of reach of children.

12. **Maintain discharger with care.** Inspect periodically and, if it has received a sharp blow, been dropped, or otherwise damaged in any way, have it repaired by an authorized technician. Do not disassemble discharger; contact PCS technical support when service or repair is required (615.471.5300). Incorrect reassembly may result in risk of electrical shock or fire.

13. **Check for damaged parts.** Before using any battery charger, carefully check any part that appears damaged to determine that it will operate properly and perform its intended function. Check for broken parts and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the discharger if any part does not operate properly.

14. **Replacement parts and accessories.** When maintaining, only use accessories intended for use with this discharger. Approved accessories are available from Pro Charging Systems (615.471.5300).

15. **CAUTION:** To reduce the risk of fire, use only on circuits provided with 15 amperes branch circuit protection at 100 VAC and 115 VAC and 10 amperes branch circuit protection at 230 VAC in accordance with the national electrical code, ANSI/NFPA 70

**ATTENTION:** Pour réduire le risque d'incendie, utilisez uniquement sur les circuits munis d'une protection de circuit 15 ampères de branche à 100 VAC et 115 VAC et protection de circuit 10 ampères de branche à 230 VAC en conformité avec le Code canadien de l'électricité CEC Partie 1

**SAVE THESE INSTRUCTIONS!**

## INSTALLATION AND PREPARATION



**To reduce risk of battery explosion, follow these instructions, those published by the battery manufacturer, and by the manufacturer of any equipment that you intend to use in the vicinity of battery. Review all cautionary markings on these products and on the engine.** *Pour réduire le risque d'explosion, lire ces instructions et celles qui figurent sur la batterie.*

**If it is necessary to relocate the battery for charging, first remove the grounded terminal from the battery. Then make sure all accessories are off, so as not to cause battery arcing.**



**RISK OF EXPLOSIVE GASES: WORKING IN THE 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 prior to each use of your discharger, you read this manual and follow the instructions exactly.** *Il est dangereux de travailler à proximité d'une batterie au plomb. Les batteries produisent des gaz explosifs en service normal. Il est aussi important de toujours relire les instructions avant d'utiliser le chargeur et de les suivre à la lettre.*

**Do not operate discharger in a closed-in area or restrict ventilation in any way.**  
***Ne pas faire fonctionner le chargeur dans un espace close et/ou ne pas gêner la ventilation.***

Clean battery terminals. Be careful to keep corrosion from coming into contact with eyes. Add distilled water to each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's recharging instructions. Study all battery manufacturers' specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

When using an extension cord, make sure:

- that pins on plug of extension cord are the same number, size, and shape as those of the charger's plug;
- that extension cord meets UL (Underwriters Laboratories, Inc.) acceptance;
- that wire size is large enough for AC ampere rating of the discharger.



**Always make your extension cord connection on the discharger side before connecting to a nearby GFCI protected (Ground Fault Circuit Interrupt) outlet. Failure to use a GFCI outlet may result in electrical shock. Note: Dischargers should be connected to an 85 - 265 VAC GFCI protected outlet.**

**The DC connection should always be made before connecting or disconnecting the AC side. Note:** Extension cords should be industrial grade/heavy duty UL approved and grounded. Check extension cord before use for damage, bent prongs and cuts. Replace if damaged.

Connect the extension cord to the discharger; then proceed to plug the extension cord to the GFCI protected (Ground Fault Circuit Interrupt) outlet.

Always remove the extension cord from the GFCI protected outlet first when discharging is completed, followed by unplugging the discharger.

## GENERAL OPERATION



**Use discharger for discharging a LEAD-ACID (lead acid, sealed lead acid, gel cell and AGM) battery only. It is not intended to supply power to a low voltage electrical system other than in a startermotor application. Do not use battery discharger for discharging dry-cell batteries that are commonly used with home appliances. These batteries may burst, causing personal injury and damage to property.**

*Utiliser le chargeur pour charger une batterie au plomb uniquement. Ce chargeur n'est pas conçu pour alimenter un réseau électrique très basse tension ni pour charger des piles sèches. Le fait d'utiliser le chargeur des piles sèches pourrait entraîner l'éclatement des piles et causer des blessures ou des dommages.*



**DO NOT attempt to attach a discharger to a battery pack if the output of the discharger does not match the battery pack voltage. Example: Mode BD6812QUAD is a 6, 8 or 12 volt discharger and is only usable on those battery systems. Discharger and battery damage can occur.**



**Be extra cautious to reduce risk of dropping a metal tool onto battery. It might cause a spark or short-circuit a battery or other electrical part, possibly resulting in an explosion. If damaged, contact PCS (615.471.5300).**



**NEVER discharge a frozen battery.**

*Ne jamais charger une batterie gelée.*

Assure that the area around your charger and batteries is properly ventilated. Connect your extension cord, with no AC Power present, to the battery discharger and proceed to plug your extension cord into a 120VAC GFCI protected (Ground Fault Circuit Interrupt) outlet.



**Risk of electrical shock! Do not touch uninsulated parts of the battery discharger connectors, battery connector, or battery terminals.**

Once you plug in your PCS battery discharging system, the charge cycle will begin automatically. State of charge will be displayed by illumination of the Light Emitting Diodes (LEDS) on the battery status indicator located on the front of the unit.



**DO NOT connect or disconnect the DC output electrical cord to or from the battery receptacle when the discharger is on. Arcing and / or burning of the plug and receptacle could result and could cause the batteries to explode. If the discharger must be stopped, first disconnect the AC power supply cord from its outlet, then disconnect the charger DC output plug from the battery receptacle.**



**To reduce the risk of fire, use only on circuits provided with 15Amperes Branch Circuit Protection in accordance with the National Electrical Code, ANSI/NFPA 70.**



**Study all battery manufacturers' specific precautions such as removing or not removing cell caps while discharging and recommended rates of discharge.**

*Prendre connaissance des mesures de précaution spécifiés par le fabricant de la batterie, p. ex., vérifier s'il faut enlever les bouchons des cellules lors du chargement de la batterie, et les taux de chargement recommandés.*



**Never place the discharger directly above or below the battery being discharged; gases or fluids battery will corrode and damage the discharger. Locate the discharger as far away from the battery as DC cables permit.**

*Ne jamais placer le chargeur directement sous la batterie à charger ou audessus de cette dernière. Les gaz ou les fluids qui s'échappent de la batterie peuvent entraîner la corrosion du chargeur ou l'endommager. Placer le chargeur aussi loin de la batterie que les câbles c.c. le permettent.*



**If it is necessary to remove battery from vehicle to discharge it, always remove grounded terminal battery first. Make sure all accessories in the vehicle are off in order to prevent an arc.**

*S'il est nécessaire de retirer la batterie du véhicule pour la charger, toujours d'ébrancher la borne de mise à la masse en premier. S'assurer que le courant aux accessoires du véhicule est coupé afin d'éviter la formation d'un arc.*



**Never smoke or allow an open spark or flame in the vicinity of the BATTERY the battery or engine. Ne jamais fumer près de la batterie ou du moteur et éviter toute étincelle ou flamme nue à proximité de ces dernie.**



**Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal operation. For this reason it is of the utmost importance that prior to each use of your discharger, you read and follow the instructions provided exactly.**

*Il est dangereux de travailler à proximité d'une batterie au plomb. Les batteries produisent des gaz explosifs en service normal. Il est aussi important de toujours relire les instructions avant d'utiliser le chargeur et de les suivre à la lettre.*

**CAUTION: DO NOT DISCONNECT THE ALLIGATOR CLIPS FROM THE BATTERY DURING A DISCHARGE CYCLE, SPARKING AND ARCING AS WELL AS PERMANENT DAMAGE TO THE DISCHARGER MAY OCCUR.**

**WARNING: A DISCHARGER CREATES LARGE AMOUNTS OF HEAT, ALLOW AT LEAST 12 INCHES OF CLEARANCE FROM ALL DIRECTIONS OF THE UNIT AND AVOID TOUCHING THE SIDES OF THE DISCHARGER-SURFACE MAY BE VERY HOT.**

**WARNING: Risk of Fire! Do not leave the discharger unattended while a discharge cycle is in process.**

**WARNING: Do not attempt to operate the discharger if it has been damaged, contact the factory for assistance. ONLY FOR USE ON 6V, 8V, 12V LEAD ACID BATTERIES.**

**ONLY USE SUPPLIED CABLES AND ALLIGATOR CLIPS – DO NOT MODIFY.**

**AN AUDIBLE ALARM WILL SOUND IF THE CONNECTIONS ARE REVERSED**

**IF OVERTEMP SHUTDOWN, REMOVE LEADS, DISCONNECT AC AND CALL PCS TECHNICAL SUPPORT.**

## **DISCHARGING INSTRUCTIONS:**

- 1. Plug the AC power cord into a 120 VAC outlet. (Utilizing an IEC adaptor, the unit can be operated world-wide in a voltage range of 85-265 VAC 50/60 HZ)**
- 2. The LCD display will illuminate and advise the user to connect to a battery.**
- 3. Connect the alligator clips to one of the following lead acid batteries between the range of 75 and 435 Ah (20 hour rate): 6V, 8V, or 12V.**
- 4. Press the "START/STOP" button and the unit will begin tests and then discharge the attached battery to a value of 1.75 VPC.**
- 5. The discharge cycle can be interrupted (paused) and restarted without losing the accumulated data by pushing the "START/STOP" button.**
- 6. Once the discharge is complete, the LCD screen will flash and display the amps removed as well as the length of the discharge cycle in minutes and seconds.**

The "SELECT" button is utilized to view the discharge data from the last completed discharge (when no battery is attached).

It is also utilized to toggle through voltages, times, and amps if the user chooses to discharge a battery to a different voltage or for a set amount of time as well as specific amps removed. **To use the custom operation, attach a battery and hold the select button down for 1-2 seconds. Release, and follow directions on the LCD screen. Remove set minutes, to a set voltage, or to a set number of amps removed.**

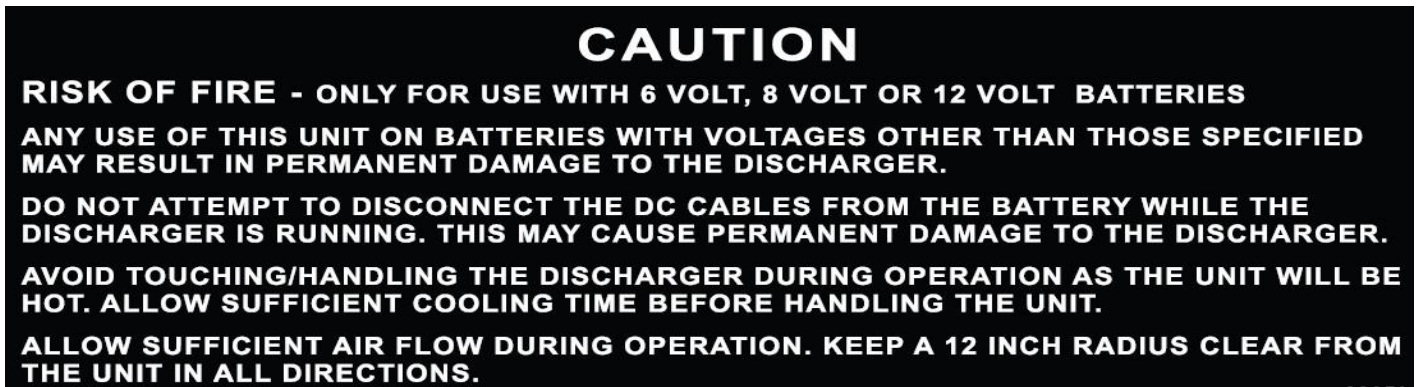
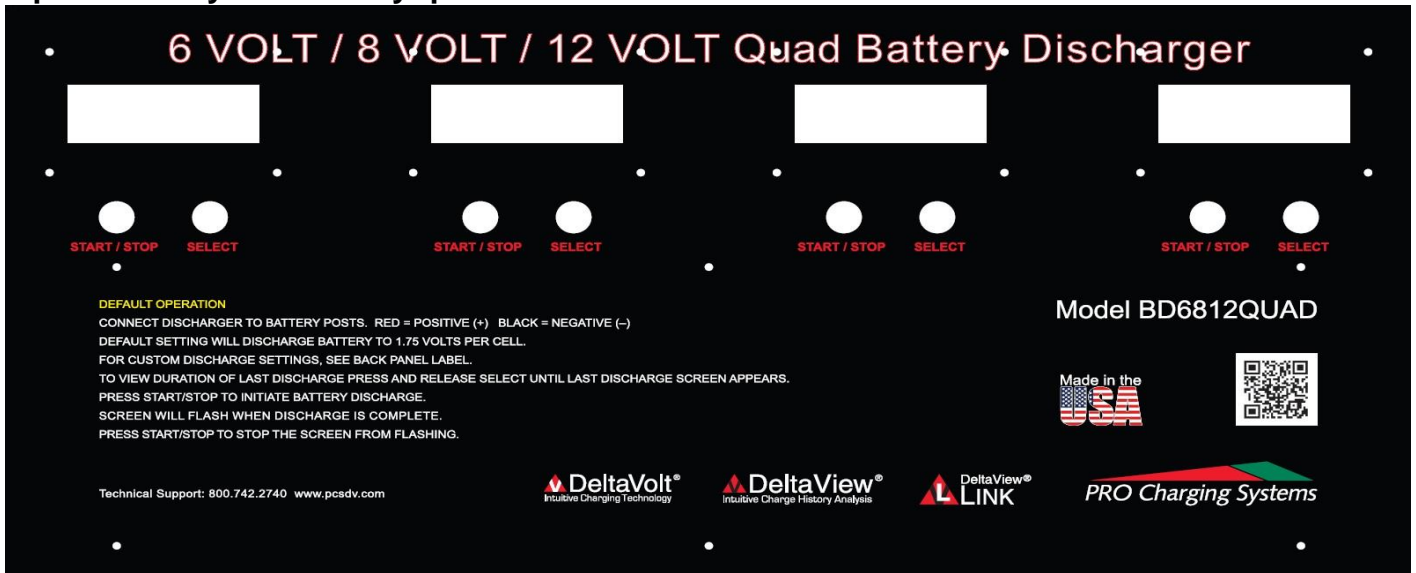
**\*\*\*IF EXTENDED CABLES ARE USED\*\*\* IMPORTANT!!**

If extended cables are purchased from PRO Charging Systems, LLC (PCS), the user will have to go through the menu and change the value of the cables. Default is 6ft. Optional 12ft total.

Operation to change to 12ft:

1. Connect a battery.
2. Push the select button and press NEXT until the user reaches the CABLE LENGTH OPTION page.
3. If “6ft Cable (default)” is on the screen, the unit is set to 6ft.
4. If a user pushes the “Change” button, they will be prompted with a “Save” and “Do-not-save” button.
  - a. If 12ft cables are used, SAVE to 12ft. This will recalibrate the unit for 12ft cables.
5. If a user wants to go back to 6ft, repeat the steps above and change to 6ft.

Below are Labels with important Discharging Information. Please read and call our technical department if you have any questions:



**Self Test** – This feature allows the user to perform a full system check of the BD6812QUAD. All internal components are tested for proper operation and a fault code is generated and displayed on the LCD screen if a problem is detected. A successful (PASS) test is noted on the LCD display for 10 seconds and then the BD6812QUAD reverts to normal operation and is ready to begin a discharge cycle.

To initiate the Self Test feature, the user must do the following things:

1. Plug the AC power cord into a standard wall outlet.

2. Attach the alligator clips to a 6 volt battery. DO NOT USE 12FT EXTENSION CABLES ON THIS TEST.
3. Press and release the “SELECT” button five times, the SYSTEM DIAGNOSTICS message will appear on the LCD screen.
4. Instructions on the screen will direct the user to either proceed with the test or skip the test.
5. Push and release the “SELECT” button to begin the test. At this point, the unit will function automatically while displaying progress.
6. If a problem is detected in the system, a fault code will be displayed (See table below). Please call PCS technical support at 866-471-5300 for assistance.
7. If no problems are detected, a PASS indication will be displayed on the LCD screen.

Fault Value 0	Battery Voltage Read Error – voltage too low or too high
Fault Value 3	Current Too Low – check resistors/cables/clamps
Fault Value 5	Current Too High – check resistors/cables/clamps
Fault Value 7	12ft Cables Selected – Self Test cannot be started with 12ft cables and cannot be started with the 12ft Cable Selection.

**\*\*\*QUICK LOAD TEST\*\*\***

If testing 6V batteries, the unit will run a QUICK LOAD TEST. This is to ensure a full cycle test is needed. If the discharger records any anomalies during this quick test, the unit will fail the test and deem the battery faulty. The user will then be prompted to either continue with the test or stop the test.

If the battery fails the QUICK LOAD TEST, check if extended cables are used (if so, see EXTENDED CABLE SECTION of this manual) and/or the clamps/SB175s are properly connected. Please call PCS technical support at 866-471-5300 for assistance.



## LIMITED WARRANTY

Pro Charging Systems, LLC (PCS) makes this Limited Warranty only to the original retail purchaser. PCS warrants this battery discharger for one year from the date of retail purchase against defective materials and/or workmanship. If such defects should occur, this unit will either be repaired or replaced at the discretion of the manufacturer. It is the responsibility of the original purchaser to return the charger along with proof of purchase, transportation, and/or any mailing or handling charges prepaid to the manufacturer or its authorized representative. Dischargers that are purchased more than two years beyond the date of production will automatically have a warranty start date that will be the two year anniversary of the production date.

This limited warranty is void if the product is misused, improperly maintained, handled carelessly or incorrectly operated. Additionally, this warranty is void if the discharger is disassembled, the discharger's charge cables are cut, the power cord is cut off, the discharger is altered without authorization from PCS, the serial number is removed, or repair is attempted by anyone other than an authorized representative. PCS makes no other warranty other than this limited warranty and expressly excludes any implied warranty, including warranty for any incidental or consequential damages. This is the only expressed limited warranty authorized by PCS and does not authorize anyone to assume or make any other obligation towards the product other than this Limited Warranty. Some states do not allow limitation of incidental or consequential damages.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Please call Pro Charging Systems, LLC for full warranty information and/or service please call (615.471.5300).

Below are some of our other options in chargers and battery accessories. Call our technical support group for more detailed information or visit our web site [www.dualpro.com](http://www.dualpro.com)

### Products Overview

Pro Charging Systems builds high quality, leading-edge battery chargers designed to provide clients with value over the long-term. In short, our charging systems are designed and built to last. The company's advanced DeltaVolt® technology enables our products to substantially outperform the competition. Coupled with Pro Charging System's new DeltaView® technology, users can collect data and view it in ways never before possible relative to the performance of batteries and fleets of battery powered equipment.

While our charging systems are competitively priced, they provide significant additional value since our products charge batteries faster, maintain the charge for greater duration and make batteries last longer. That translates to greater productivity in industrial settings, happier boaters on the water, more time on the golf course and fewer batteries that have to be replaced overtime. The "value" multiplier for our product in most applications is significant.

Pro Charging Systems line of chargers including the Professional, Sportsman, Eagle, Patriot and Recreation Series provide impressive performance designed to keep your equipment running longer between charges while extending the service life of your batteries. That is why Pro Charging Systems is the charger of choice for industrial lift equipment companies, boat manufacturers, golf cart owners, floor scrubber companies and other industrial users. It is also why many battery manufacturers endorse Pro Charging System chargers since they extend both the performance and the life of batteries.

