



PRO Charging Systems

EAGLE PERFORMANCE SERIES HIGH OUTPUT GOLF CART CHARGING SYSTEMS

Safety, Installation and Operating Instructions

Instructions importantes concernant la sécurité

Manual for the Following Battery Charger Models:

1250OB, 1250OB230, 1275OB230, 4850OB230, 4875OB230, 4875OB480



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

Pro Charging Systems, LLC

022924-70351

INSTRUCTIONS FOR THE FOLLOWING BATTERY CHARGER MODELS:

MODEL	Ac Input	DC Output	Battery System	Battery Capacity
1250OB	115VAC / 60HZ 11 AMPS	50ADC @ 12VDC	12V, 6 Cells	150-220AH (20 HR)
1250OB230	230VAC / 60HZ 7 AMPS	50ADC @ 12VDC	12V, 6 Cells	150-220AH (20 HR)
1275OB230	230VAC / 60HZ 10 AMPS	75ADC @ 12VDC	12V, 6 Cells	150-220AH (20 HR)
4850OB230	230VAC / 60HZ 20 AMPS	50ADC @ 48VDC	48V, 24 Cells	150-220AH (20 HR)
4875OB230*	230VAC / 60HZ 30 AMPS	75ADC @ 48VDC	48V, 24 Cells	150-220AH (20 HR)
4875OB480	480VAC 3~ 60HZ 8 AMPS	75ADC @ 48VDC	48V, 24 Cells	150-220AH (20 HR)

***Requires NEMA 6-50R receptacle with minimum 40 amp branch circuit protection.**

TABLE OF CONTENTS

Important Safety Instructions.....	Page 2
Installation and Preparation.....	Page 3
General Operation.....	Page 4
Charging Indications.....	Page 6
Troubleshooting.....	Page 6
LED Fault Code Indications.....	Page 7
Limited Warranty Information.....	Page 8

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.

Coin Cell Warning



- **Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.**
- **Even used batteries may cause severe injury or death.**
- **Call a local poison control center for treatment information.**
- **Compatible battery type is BR2032**
- **Nominal battery voltage is 3V.**
- **Non-rechargeable batteries are not to be recharged.**
- **Do not force discharge, recharge, disassemble, heat above 85 Degrees C, or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.**
- **This product contains non-replaceable batteries.**

Certificate of Conformity for 16 CFR 1263 may be found in the Compliance area at:


<https://www.dualpro.com/product-manuals>

PERSONAL SAFETY PRECAUTIONS

Always read all instructions before using your charger!

- **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.
- **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.
- **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.
- **Stay alert.** Watch what you are doing and use common sense. Do not operate any charger when you are tired.
- **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, battery chargers, or extension cords.
- **Keep work area clean.** Cluttered areas invite injuries.
- **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.
- **Do not overreach.** Always keep proper footing and balance. Do not reach over or across electrical cables or frames
- **Avoid electrical shock.** To reduce risk of electrical shock, unplug charger from outlet before attempting any maintenance or cleaning
- **Do not operate charger 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 charger. If damaged, replace the electrical cord or plug immediately.
- **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.
- **Maintain charger 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 charger; contact PCS technical support if service or repair is required (615.471.5300). Incorrect reassembly may result in risk of electrical shock or fire.
- **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 charger if any part does not operate properly.
- **Replacement parts and accessories.** When maintaining, only use accessories intended for use with this charger. Approved accessories are available from Pro Charging Systems (615.471.5300).
- For lithium charging, use only Lithium Iron Phosphate (LiFePO4) batteries provided with a Battery Management System (BMS) and tested and listed to the relevant standard as follows: UL2271, UL2580, or UL1973.

INSTALLATION AND PREPARATION

 **WARNING** 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 charger, you read this manual and follow the instructions exactly.

Il est dangereux de travailler a 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 charger 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 gener la ventilation.

Do not operate charger 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 gener la ventilation.

Clean battery terminals. Be careful to keep corrosion from coming into contact with eyes

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 charger.



Always make extension cord connection on the charger side before connecting to a nearby GFCI protected (Ground Fault Circuit Interrupt) outlet. Failure to use a GFCI outlet may result in electrical shock.

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

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, DO NOT USE.

GENERAL OPERATION



Use charger for charging flooded lead acid, sealed lead acid, gelled electrolyte, AGM, or LiFePO4 batteries only. It is not intended to supply power to a low voltage electrical system other than in a starter motor application. Charger not to be used for charging dry-cell batteries commonly used with home appliances. These batteries may burst, causing personal injury and damaged 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 charger to a battery pack if the output of the charger does not match the battery pack voltage. Example: Model i3625 is a 36 volt output charger and is only to be used on a 36V battery system. Charger and battery damage can occur.



Be extra cautious to avoid dropping a metal tool onto battery. It may cause a spark or short-circuit a battery or other electrical part, possibly resulting in an explosion.



NEVER charge a frozen battery.

Ne jamais charger une batterie gelée.



Risk of electric shock! Do not touch uninsulated parts of the battery charger output connector, battery connector, or battery terminals.



DO NOT disconnect the DC output electrical cord from the battery receptacle when the charger is on. The resulting arcing and burning of the plug and receptacle could cause the batteries to explode. If the charger must be stopped, first disconnect the AC power supply cord from its outlet, then disconnect the charger DC output plug from the battery receptacle.



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

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 charger directly above or below the battery being charged; gases or fluids from the battery will corrode and damage the charger. Locate the charger 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 entrainer la corrosion du chargeur ou l'endommager. Placer le chargeur aussi loin de la batterie que les cables c.c. le permettent.



If it is necessary to remove the battery from vehicle to charge it, always remove grounded terminal from 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 coupe afin d'éviter la formation d'un arc.



Never smoke or allow an open spark or flame in the vicinity of 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 charger, you read and follow the instructions provided exactly.

Il est dangereux de travailler a 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.



Suitable for servicing only when de-energized.

Peut faire l'objet l'objet d'un entretien uniquement s'il est hors tension.



Do Not Expose to Rain. NE PAS EXPOSER À LA PLUIE.

Model i4875OB480 only - Connection to AC Mains

This model, designed for use with 480 VAC 60 Hertz, 3 Phase Delta, is provided with an AC power cord - 4xAWG14, 3 Mains + Ground. The green conductor (Earth Ground) is connected directly to the chassis internally. To connect the charger to AC mains, conductors rated 600V 14 AWG 90 DEG C or higher must be used. Installation must be performed by a certified licensed professional electrician

For i4875OB480 unit supplied with optional AC Plug (NEMA L16-20)

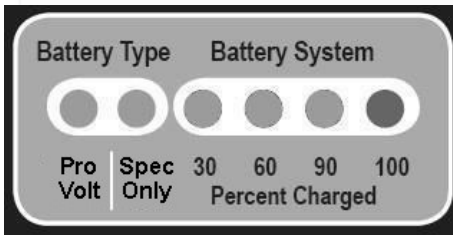
If already equipped with NEMA L16-20P from the manufacturer, only plug in to a grounded L16-20 receptacle connected to 480V 60HZ Delta Mains. Consult a certified licensed professional electrician.



Do not use with High-Leg Mains supply, this may result in damage to the charger and/or elecctrick shock. Consult a certified licensed professional electrician. Only replace AC input fuses (3 locations located on rear of the unit) with rating of 10A 600V.

CHARGING INDICATIONS

When your battery charging system is activated, the battery status indicator provides charging information utilizing three red LED indicators and one green LED indicator.



Battery Type Indicators

Two amber LED indicators are provided to display whether the default charging algorithm (Pro Volt lead acid) or one of the selectable algorithms (Spec) is in use.

NOTE: For information on configuring the battery type, please contact technical support (615.471.5300).

Battery System Percent Charged Indicators

1st Amber LED	ProVolt Flooded Lead Acid Algorithm selected. (Default Algorithm)
2nd Amber LED	One of the selectable algorithms is in use.
1st RED LED	Charging—Initial charging up to 30%
2st and 2nd RED LEDS	Charging— 60% Complete
1st, 2nd, & 3rd RED LEDS	Charging—90% Complete
Blinking GREEN LED	Finishing Stage
Steady GREEN LED	Charge Complete—Float Maintenance Mode active depending on selected algorithm

The green LED is illuminated whenever the charge cycle is complete, and the internal circuitry has determined the batteries to be fully charged. The green LED will blink during the finishing stage of the charge cycle. After the completion of the charge cycle, the green LED will remain on steady during the float-maintenance stage. ***During this final stage, depending on algorithm selection, current is only flowing to the battery system for 5 minutes and then current will stop completely for 60 minutes.***

Your system may provide an equalization stage every 30 days while plugged in depending on algorithm selection. If the charger is normally disconnected from A/C after completing charge, equalization can be accomplished by plugging back into A/C whenever this stage is desired. Battery manufacturers recommend that equalization is done once a month to further reduce sulfation on the lead plates of a battery, which helps promote longer battery life. Note: During this process the LEDs will go through their normal routine (Red LEDs counting up for % of charge along with the illuminated Amber LED Battery Type and then the Green LED and Amber Battery Type LED will blink) until the unit returns to the maintenance mode and a steady Green LED and steady Amber Battery Type LED.

Never leave batteries unattended for longer than 30 days. Self-discharge and/or parasitic system loads dictate that the charger should be used to replace any lost capacity if the batteries have been left unattended longer than 30 days.

TROUBLESHOOTING

PROBLEM: No LED indicators illuminated on battery status indicator.

Solution Sequence:

1. Confirm that current is being delivered to the charger. Use a meter or test light to check the AC power supply from its source through all connecting points up to the charger.
2. Call technical support for further assistance (615.471.5300)

PROBLEM: A green LED was illuminated before disconnecting the power from the charger, but upon reconnection, the red LEDs appear and remain on.

This is the normal operating procedure for the system. It indicates that a reanalysis of the battery status was initiated and after a series of steps, the green LED will illuminate.

LED FAULT CODE INDICATIONS

The microprocessor is constantly monitoring the charger circuitry and will both detect and display blinking LED indications if a fault is detected. The battery type LED will be **OFF** during a fault code condition.

When first connected to DC (AC not connected), the LEDs will display one or more of the following: 1. The LEDs will flash the charger's ID code (this is for PCS internal use only). Once the LEDs flash the ID, they will only display one yellow LED. This configuration will remain until AC is detected and a charge cycle is in progress.

There is also a possibility the LEDs will not flash their ID code and only show a yellow LED.

Lastly, the LEDs may not flash their ID code and may not show any LEDs until AC is detected.

If the AC line and neutral wires are reversed, the unit will wait 2 minutes before starting a charge. NOTE: The 2 minute wait period will also be a factor if the charger is being powered by anything other than normal grid AC such as a conventional generator, inverter, etc.

If AC is disconnected during while charging, the unit will turn off as expected. The user may hear some clicking noise, but should not be alarmed. This is the Powered by Battery/DOE functionality checking for AC connection.

30% RED LED BLINKINGNO BATTERY DETECTED

This indication occurs whenever the charger circuitry cannot detect a battery. The charger circuitry will not allow charge current to flow under this condition. With the AC power supply cord unplugged, check the connection to the batteries for proper polarity (black wire to negative or -). Also check for corrosion free secure connections to the battery.

30 & 60% RED LEDS BLINKINGFORMING STAGE TIMEOUT SHUTDOWN

This indication occurs if the battery voltage has not risen above 1.75 volts per cell within the first 3 hours of charging. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point.

30, 60 & 90% RED LEDS BLINKING.....OVERALL TIMER SHUTDOWN

This indication occurs if the charger has not completed the charge cycle within the allowable factory set time period. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point.

30 & 90% RED LEDS BLINKINGINTERNAL OVERTEMP SHUTDOWN

This indication occurs if the charger circuitry has detected operating temperatures inside the charger enclosure that are above factory specified levels. This could indicate that a possible charger problem exists and that the charge cycle has been terminated.

30% RED & 100% GREEN LEDS BLINKING BULK STAGE SHUTDOWN

This indication occurs if the battery voltage does not rise properly during the Bulk Stage. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point. Please call technical support for further assistance (615.471.5300).

Note: Disconnecting and reconnecting the AC power supply cord will reset the charger.

LIMITED WARRANTY

Pro Charging Systems, LLC (PCS) makes this Limited Warranty only to the original retail purchaser.

PCS warrants this battery charger for 18 months (including part numbers with the RM designation*) from the date of retail purchase against defective materials and/or workmanship. CR designation refers to “Certified Reconditioned” and designates a 1 year warranty.

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. Chargers 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 charger is disassembled, the charger’s charge cables are cut, the power cord is cut off, the charger 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 18 month warranty authorized by PCS and does not authorize anyone to assume or make any other obligation towards the product other than this 18 month 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).

*-RM suffix refers to “Restricted Markets” such as Rental applications and Heavy Industrial applications.