



# PRO Charging Systems



**CRS1, CRS2 and CRS3**

**For additional information please call our  
Technical Support Group 800.742.2740**



110310

**PRO CHARGING SYSTEMS, LLC**  
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Installation and Operating Instructions for the Following Battery Charging Systems:

MODELS	NO. OF BANKS	BATTERY SYSTEM
CRS1	1	12 volts
CRS2	2	12 or 24 volts
CRS3	3	12, 24, or 36 volts

*\*Each charger cable assembly attached to one 12 Volt battery.*

**IMPORTANT NOTICE:**

Please save and read these safety, operating and installation instructions before installing or applying AC power to your charger. Contact Pro Charging Systems, LLC (PCS) with any product, installation or service questions (800.742.2740).

**Introduction**

Our Charge on the Run Series (CRS) is a revolutionary product specifically designed to enhance trolling battery performance and extend the amount of battery power available to the user between charge cycles accomplished with a conventional battery charger. This system utilizes boat engine charging current to charge your trolling motor batteries while the engine is running. Solid state electronics ensure that the main starting battery is adequately charged before allowing current to flow to the trolling motor batteries. The CRS is fully protected against short circuits and reverse polarity and is not directly connected to the ignition system or engine.

**Table of Contents**

Safety Instructions . . . . . Pages 3-4  
 Product Summary . . . . . Page 4  
 Installation Instructions . . . . . Page 5  
 Post-Installation Testing . . . . . Page 6  
 Troubleshooting Instructions . . . . . Page 7  
 Warranty Information . . . . . Page 8

## **IMPORTANT SAFETY INSTRUCTIONS**

**SAVE THESE INSTRUCTIONS.** This manual contains important safety and operating instructions for the **CRS1, CRS2 and CRS3**.

Use of attachments not recommended or sold by PCS may result in a risk of fire, electrical shock, or personal injury.

Do not operate unit if it has received a sharp blow, been dropped, or been otherwise damaged in any way; contact technical support at PCS (800.742.2740).

Do not disassemble unit; contact technical support when service or repair is required (800.742.2740). Incorrect assembly may result in risk of electrical shock or fire.

### **WARNING: 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 the **CRS** unit you read this manual and follow the instructions exactly.

To reduce risk of battery explosion, follow these instructions, those published by the battery manufacturer, and those published by the manufacturer of any equipment you intend to use in the vicinity of the battery. Review all cautionary markings on these products and on the engine.

### **PERSONAL PRECAUTIONS**

The **CRS** is designed to be permanently installed in the boat specifically for the purpose of supplying charging current to the trolling motor batteries while operating the main boat engine. Other types and uses, including unauthorized attachments, should be avoided due to possible damage and/or personal injury.

**Do not attempt to operate the CRS in a battery configuration that utilizes a series connection between the engine starting battery and the trolling motor battery or batteries. Severe sparking and/or damage to the CRS may occur and the warranty will be voided. Please contact technical support for further information (800.742.2740).**

Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.

Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, eyes, or other surfaces.

Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

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.

NEVER smoke or allow a spark or flame in the vicinity of a battery or engine.

Be extra cautious to reduce risk of dropping a metal tool onto the battery, which might cause a spark or short-circuit the battery or another electrical part, possibly resulting in an explosion.

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.

Use the **CRS** for charging a LEAD-ACID (lead acid, sealed lead acid, gel cell, and AGM) battery only. Do not use this system for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst, causing personal injury and damage to property.

NEVER charge a frozen battery.

## **PRODUCT SUMMARY**

### **General Operation**

Use the following guidelines in this manual to install your PCS **CRS** system.

Assure that the area around your batteries is properly ventilated.

During normal operation the **CRS** system monitors the starting battery voltage and will activate once the starting battery voltage rises above a predetermined voltage. Once this point is reached, charging current from the boat motor charging system will continue to flow to the additional batteries attached to the **CRS** system. When the starting battery voltage drops below a predetermined voltage, the **CRS** system is deactivated and returns to a standby state. Light Emitting Diodes (LEDs) on the **CRS** case indicate the status of the unit.

## INSTALLATION INSTRUCTIONS

Do not make any electrical connections to the main engine battery or additional batteries until the installation process has been completed.

The **CRS** may be mounted at any angle. For best results, place the **CRS** at the desired location and mark the screw locations, using the mounting bracket as a template.

Check for fit and appropriate thickness of the mounting area before drilling starter holes. Use the four screws that have been provided to install the unit on a flat surface as high above the water level as possible.

Locate the cable labeled **starting battery** and securely connect the ring terminal of the black cable to the negative post of the starting battery. Locate the cabled labeled **trolling motor battery** and securely connect them to the trolling motor battery or batteries as shown. (Red wire to + terminal/Black wire to – terminal.)



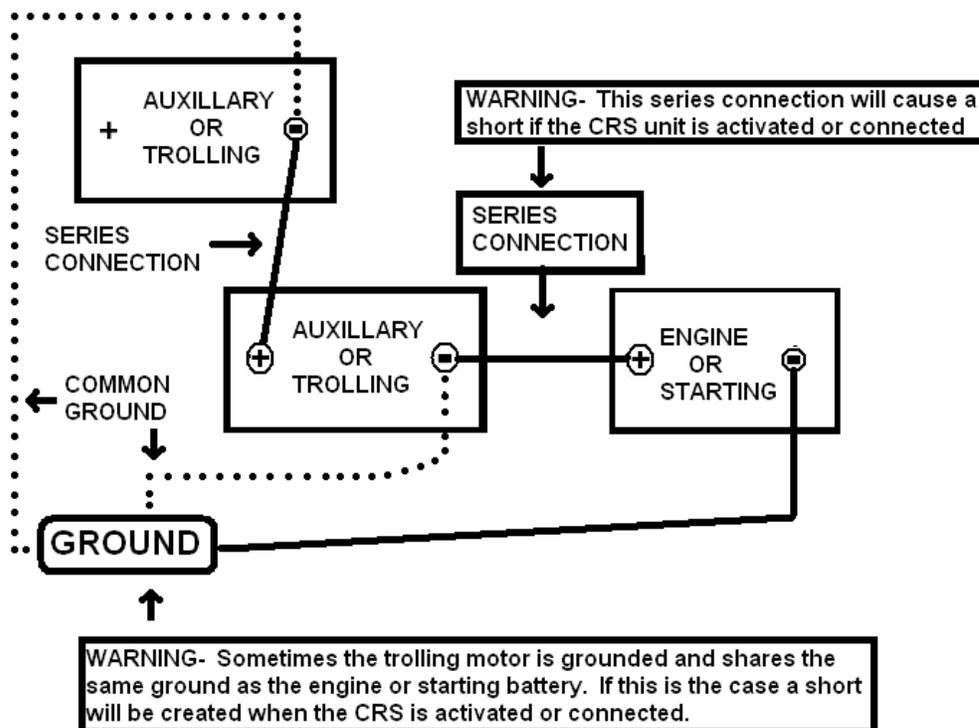
Locate the purple wire at the end of the starting battery cable assembly (this is not used on a CRS1). Using the supplied quick connector, attach the purple wire to any 12 volt source on the boat that is disabled when the boat is not in use. The purpose for this connection is to disable the **CRS** circuitry during times that the battery may be charged by other means (i.e., AC powered battery charger).

## POST-INSTALLATION TESTING

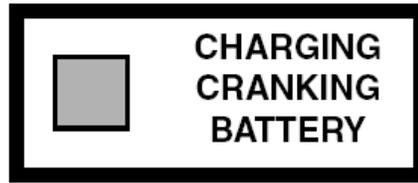
After completing the total installation process for the **CRS**, it is possible to test the unit for proper operation without having to operate the main engine.

1. Attach a battery charger designed for a 12 volt system to the starting battery.
2. Turn on the boat electrical system (key switch on).
3. Turn the battery charger on and observe the indicator lights on the **CRS**. When the voltage of the starting battery reaches a predetermined level, both indicator lights on the unit should illuminate.
4. Turn the battery charger off and observe the indicator lights on the **CRS**. As the battery voltage drops to a predetermined level, both indicator lights should extinguish.
5. If you are unable to accomplish the previous steps for any reason, please call PCS technical support (800.742.2740) and we will gladly assist you.

**CAUTION!** Do not attempt to operate the **CRS** in a battery configuration that utilizes a series connection, or a common ground, between the engine starting battery and any of the batteries connected to our **CRS** unit. Severe sparking and/or damage to the **CRS** may occur and the warranty will be voided. **NOTE: THIS CONNECTION MAY BE HIDDEN FROM VIEW. USE A VOLTAGE METER TO CONFIRM THERE IS NOT A HIDDEN CONNECTION AS IS THE CASE ON SOME POPULAR MODELS OF TROLLING MOTORS(see diagram below).** Please contact technical support for further information (800.742.2740).



## TROUBLESHOOTING



LED Indicator Lights

**PROBLEM: No indicator lights are illuminated on the CRS during engine operation.**

SOLUTION SEQUENCE:

- Check battery connections for tightness and proper polarity.
- Check in line fuses on Red and Black wires on starting battery cable.
- Call PCS technical support at 800.742.2740.

**PROBLEM: Charging Trolling Batteries indicator does not illuminate during engine operation.**

SOLUTION SEQUENCE:

(Note: In order for the **CRS** circuitry to operate, the starting battery voltage must exceed 13.8 volts. On some small outboard motors, the starting battery voltage may not reach this point.)

- Check purple wire from starting battery cable assembly. This wire must be attached to a 12 volt source.
- Check battery connections on all batteries for tightness and proper polarity.
- Call PCS technical support at 800.742.2740.

## **LIMITED WARRANTY**

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

PCS warrants this battery charger for three years 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.

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 three year warranty authorized by PCS and does not authorize anyone to assume or make any other obligation towards the product other than this three year 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 (800.742.2740) for full warranty information and/or service.