

DC-to-GO Battery Box w/RIGrunner 4008



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Thank you for choosing the West Mountain Radio DC-to-GO Battery Box w/ RIGrunner 4008! You will enjoy powering your equipment from a portable battery using Powerpole® connectors.

The DC-to-GO gives you convenient portable power. The case accepts Group Size 24 batteries, providing up to 100 amp hours at 12 volts. Eight devices may be plugged into the integrated RIGrunner 4008 power strip. Each socket is fused for protection. Any blown fuse will be illuminated. Correct and low voltage indicators show battery status. The battery may be charged via the power strip.

Contents

- Battery Box with strap
- RIGrunner 4008 (mounted directly to battery box)
- Power Supply Cable (2ft. #10 wire, ring terminals to Powerpole®)
- 12 pair pak of 30A Powerpole® connectors and contacts
- DC-to-GO Operating Manual

Safety Information

A battery stores a large quantity of energy. A short circuit will release this energy rapidly causing the wire to melt, and perhaps, catch on fire. Also, the battery could explode. The fuse located near the battery terminal in the RIGrunner may help prevent these types of catastrophes.

Batteries

The use of only SAFETY batteries is recommended, such as gelled-electrolyte and absorbed-glass mat (AGM) types. These batteries are sealed and contain no dangerous gases. These types may be mounted in any position, although vertical is preferred. They are also 100% maintenance free.

Use of other types of batteries for portable use in the DCtoGO is NOT recommended. Automobile batteries and marine batteries may only be used if the installation is fixed; where the battery box will not be turned over and is located outdoors or in a well-ventilated area.

West Mountain Radio carries high-quality gellelectrolyte and AGM batteries. They have posts and lugs with studs to match the ring terminals on the supply cable provided.

DCtoGO battery box will fit Group Size 24 batteries with the following dimensions:

Length	10 7/8 in. (276 mm)
Width	6 3/4 in. (171mm)
Height	9 7/8 in. (251mm)

Connecting to the Battery

The RED wire with the larger ring terminal is connected to the battery POSITIVE lug and securely fastened down with the nut. The BLACK wire with the smaller ring terminal is connected to the battery NEGATIVE lug and securely fastened down with the nut. **Ensure that RED is POSITIVE and BLACK is NEGATIVE.**

Bring the wire out through the front of the battery box to the left of the RIRunner. Plug into the farthest left connector marked "DCIN". Neatly fold the excess wire into the box. Make sure the top is oriented so that the large vent is facing the front. Snap the top into place.

West Mountain Radio carries post-to-stud lug sets. The positive lug matches the larger size battery post and has a 3/8 inch stud. The negative lug matches the smaller size battery post and has a 5/16 inc stud.

Using the Strap

The strap may be installed and used both to secure the battery box to the floor and to restrain the top cover. It also provides the safety precaution in the event the battery explodes, the plastic box with strap will likely prevent flying debris and acid.

Note that the strap is easily installed between the RIRunner and the battery box.

RIRunner 4008

There are some considerations to think about. Please read these instructions carefully before setting up your RIRunner.

Choosing a mounting location

Pick a location that is close, or central to, most of your radios and accessories; especially those that draw large amounts of current. Locate your power source as close as possible to the RIRunner. Remember that every wire has resistance, longer wires have more resistance. More than a 10' run of #10 wire is not quite adequate to supply the RIRunner to full output without a significant voltage drop.

Install in a cool dry place with good ventilation. For example, do not put it on top of your amplifier or room heater, or cover it with something. It is recommended to not put it in the engine compartment of your car, or directly on the floor of a car; rain from open windows or snow covered boots may cause water damage.

Connecting your equipment

Recognizing that RIRunner comes standard with Powerpole®, updating your cables that supply or use 12 volts DC with Powerpole® will improve the convenience of quick connections and use of your equipment. Remember, Powerpole® are genderless and the same connector arrangement works for both supply and load. Powerpole® can be used to charge or power batteries, all using the same connectors.

Powerpole® can be installed by soldering or crimping. Be sure to make good connections. For detailed Powerpole® connector installation tips see RIRunner support pages at <http://www.westmountainradio.com/supportrr>.

IMPORTANT!! It is essential that assembly of the pairs is correct. Follow the amateur radio standard used by the RIRunner. **DO NOT PLUG IN** without verifying that **RED + PLUS** and **BLACK – MINUS** is correct.

The far left connector is labeled DCIN with a 25 amp fuse, and is normally used to connect to the battery; but, any output may be used as the input with an appropriate fuse. Plug in your equipment starting with the highest power connections to the left and the lower power drain units to the right, notice the supplied fuse ratings next to the connector chosen. Typically you should connect higher current devices like transceivers first and smaller accessories last.

Multiple amplifiers and/or transceivers may be connected to the RIRunner. The RIRunner itself is capable of handling 40A maximum current but with a U1 size battery you should plan on using significantly less current to maximize operating time. For this reason the supplied DCIN fuse is rated at 25A. Most QRP and HT radios draw less than 1 amp in receive but may require up to 3 amps in transmit. Therefore, the limiting factor is total current draw while transmitting. To determine how many radios may be used to transmit at one time, consult the radio manual for power consumption specifications. In the event that the total current goes over the 25 amp maximum, a fuse will blow. The RIRunner and any equipment plugged into the RIRunner should go unharmed.

Using the proper fuses

The RIRunner comes supplied with a range of fuses installed. This assortment should be suitable for most stations, but can be changed easily. Every RIRunner output is safe up to 40 amps, but the total allowable is also 40 amps.

A fuse **MUST** be in each position in use. **ANY ATTEMPT TO BYPASS OR SHORT ACROSS THE FUSES IS DANGEROUS AND VOIDS THE RIGRUNNER WARRANTY.** Since the maximum available automotive fuse is 40 amps, the RIGrunner will be protected as long as any value ATC/ATO fuse is installed. Choose the correct fuse for your equipment. Standard ATC/ATO automotive blade fuses are used. These fuses are available in 10 values ranging from 1 amp to 40 amps.

The DC input should have a fuse that is appropriate for the power supply or battery rating. If using a low power or QRP equipment, consider using a lower value fuse than the 25 amp value supplied. Ideally all of the outlets should have a fuse that is the next higher value above the maximum current draw of the unit on that fuse. If using a power cord with a fuse, match that value or go one or two values higher. Sizing each fuse for each unit is desirable, but not absolutely necessary. Having a higher value than the minimum will offer less protection for that unit, too low a value and the fuse will blow out prematurely.

Note that each fuse position has a LED blown fuse indicator that will conveniently light up if an output fuse is blown. There must be power to the RIGrunner and a load on the circuit that has the blown fuse for the blown fuse LED to light.

The voltage comparator and audible alert

A feature of the RIGrunner 4012 and 4008 is the precision expanded scale voltage comparator display with audible alert. (The 4005 and 4004U models do not have this feature.) A basic explanation of 12 volt systems will aid in understanding this feature. Equipment commonly referred to as 12 volt is actually a nominal 13.8 volts. For example, a lead acid battery is a nominal 12.6 volts when charged and not under load, and approximately 14.0 volts under charge. A quality 12 volt power supply will have its regulated output set to 13.8 volts. Most radios are specified to require 13.8 volts +/- 15%. 12 volt automobile or aircraft alternators have voltage regulation set between 13.5 and 14.3 volts.

The RIGrunner provides an accurate and unambiguous display of voltage. There are three LEDs: red overvoltage, green normal, and yellow undervoltage. The points at which the LEDs change are set accurately to 11.5 and 15.0 volts. The selection of these points gives a reliable indication of proper and safe operation of your power supply, battery or alternator. A green or normal indication is all you need to look for.

An undervoltage indication, shown by the yellow LED, is less than 11.5 volts. This should be safe for your radio, but may cause improper operation. Low voltage on a modern radio can cause a loss of phase lock and a frequency error. This is a definite indication of a problem with the power source; a bad connection, an unregulated power supply, a bad alternator or dying battery. It is normal with most cars to have less than 11.5 volts when cranking the starter motor.

A normal indication with the green LED illustrates, everything is good and you are between 11.5 and 15.0volts, don't worry about a thing.

A red overvoltage indication with the red LED is a warning,DISCONNECT OR TURN OFF YOUR POWER SUPPLYIMMEDIATELY! It is possible to overheat or damage a radioor other equipment. An overvoltage will sound an audiblealert; no need to watch the LEDs to signal a problem.

When running strictly on a 12 volt battery, an overvoltagecondition will not occur. The RIrunner's audible alert canbe reconfigured for a low battery warning. By removing thefour cover screws and move the P14 jumper to the "LO"position. Remember to move it back to "HI" when changingback operation from power supply or alternator.

Note: Due to the characteristics of the comparator chipit is normal for the undervoltage LED to glow very dimlywith a normal or overvoltage indication. It is also normalfor the LEDs to change intensity while stepping through 10 precision points.

In the event of a bad power source or power connection, the yellow LED may flash or come on during transmit.Ifthis happens, check the power source andconnections. It is also possible for RF from a transmitter to cause anelectronically regulated power supply to lose regulation andcause an overvoltage alert during transmit. The RIrunner is extensively RF bypassed and should actually cure thisproblem. If you do have an overvoltage condition duringtransmit especially with a VHF high power amp, it is due to inadequate RF filtering on the DC lead of the amplifier, or poor RF immunity of the power supply regulator circuit.

Special Note for RIrunner 4004USB:

The maximum current for the USB outlet is 1 amp and isprotected by a 1 amp ATC fuse. This fuse should NOT bechanged to a higher value.

Powerpole® Wiring Guide

Powerpole® Series Contact	Recommended Wire Gauge
15 A	20-16 AWG
30A	20-12 AWG
45A	14-10 AWG

Additional Resources for Anderson Powerpole® go to: www.andersonpower.com

Details and a video demonstration for using PWRcrimp Tool with Powerpole®, go to: www.westmountainradio.com/crimptool

RIRunner Accessories

	<u>Order Sku#</u>
Fuse Assortment Low Value (8pcs) 3- 1A, 3- 5A & 2- 10A	#58537-1085
Fuse Assortment High Value (8pcs) 2 ea. of 15A, 20A, 30A, 40A	#58537-1086
Buss 10A ATC Circuit Breaker	#58537-1087
Buss 15A ATC Circuit Breaker	#58537-1088
Buss 20A ATC Circuit Breaker	#58537-1089
Buss 25A ATC Circuit Breaker	#58537-1090
Buss 30A ATC Circuit Breaker	#58537-1091
Powerpole® Extension Cable, 3 ft. #12 Red/Black Wire w/ Powerpole® ends	#58531-1082
Powerpole® Extension Cable, 6 ft. #12 Red/Black Wire w/ Powerpole® ends	#58531-1083
Powerpole® Extension Cable, 10 ft. #12 Red/Black Wire w/ Powerpole® ends	#58531-1084
15A. Powerpole® Connector-12 Pair	#58257-1093
30A. Powerpole® Connector-12 Pair	#58257-1095
45A. Powerpole® Connector-12 Pair	#58257-1099
Powerpole® Retention Clips - 12 Pack	#58257-1092
PowerLock - RIRunner Retainer Kit	#58512-1060
PWRcrimp Crimp Tool	#58568-1049

*To purchase or view other accessories available,
call or go online at:*

www.westmountainradio.com/shop

ADDITIONAL RESOURCES

Go to our support page for more assistance:
<http://www.westmountainradio.com/supportrr>

Go to our OpTips page for connection tips:
<http://www.westmountainradio.com/optips>

www.westmountainradio.com

DC-to-GO Battery Box w/ RIGrunner 4008 Warranty

The RIGrunner is warranted against failure due to defects in workmanship or materials for one year after the date of purchase from West Mountain Radio or an authorized dealer. If purchased from an authorized dealer it must be returned with a copy of the original sales receipt or proof of purchase.

Warranty does not cover damage caused by abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation, alteration, lightning, or other incidence of excessive voltage or current. If failure occurs within this period, return the RIGrunner or accessory to West Mountain Radio at your shipping expense with a full explanation and necessary proof of purchase. The device or accessory will be repaired or replaced, at our option, without charge, and returned to you at our shipping expense. Repaired or replaced items are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the RIGrunner or accessory made after the expiration of the warranty period.

West Mountain Radio shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss, or damage caused directly or indirectly by use or performance of the products or arising out of any breach of this warranty, including, but not limited to, any damages resulting from inconvenience, loss of time, data, property, revenue, or profit, or any indirect, special incidental, or consequential damages, even if West Mountain Radio has been advised of such damages.

Except as provided herein, West Mountain Radio makes no express warranties and any implied warranties, including fitness for a particular purpose, are limited in duration to the stated duration provided herein.

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