



USER GUIDE

DB002

Motorized 275amp Dual Battery Kit



IMPORTANT: Please read and fully understand these operating and fitting instructions prior to installing your Ironman 4x4 Dual Battery System.

Before You Begin

Installing a second battery in your vehicle will increase the work load on your alternator. It is important to check that your alternator can maintain sufficient charge to both batteries.

It is also important to make sure your main battery is in good operating condition.

User Guide Terminology

(IMS) - Ironman management system.

(LED) - Light Emitting Diode.

(sense) - Main or original battery.

(output) - Second or auxiliary battery.

(Engaged) - Batteries are linked together.

(Disengaged) - Batteries are isolated or disconnected from each other.

Installation

1. Find a suitable location in engine bay of vehicle to mount the IMS unit. It should be mounted firmly in a location clear from extreme heat sources and moving parts.
2. Find a location, visible from drivers seat to mount the Ironman volt meter. Route the long cables through the fire wall to the IMS.
3. Connect the yellow wire from the volt meter to the accessories output from your ignition switch. This will supply power to the volt meter.
4. Connect the blue wire from the volt meter to dash board illumination or park light circuit. This will allow the LEDs on the volt meter to dim when lights are turned on.
5. Measure and cut a length of red battery cable to run between the main battery and the IMS. Using cable lugs supplied connect cable from positive main battery terminal to `sense' battery pole on IMS. Also connect the red wire from the volt meter to the same pole on VSR.
6. Measure and cut a second length of red cable to run between the auxiliary battery and the IMS. Using cable lugs supplied connect cable from positive output terminal to the `second battery' pole on IMS. Also connect the green wire from the volt meter to the same pole on IMS.
7. Connect the thin black wires from the volt meter and the IMS to the negative terminal on the MAIN battery. Note it is important that all earth wires are connected to the main battery for correct operation of dual battery system.
8. Measure and cut a length of black cable to run between the negative battery terminals on main and auxiliary batteries. Connect using cable lugs supplied.
9. Find a convenient location on dash board for the manual override switch.
10. Connect terminal #2 on switch to the earth terminal on main battery.
11. Connect terminal #3 on switch to the thin green wire coming from the IMS.
12. Secure all wiring away from any extreme heat sources or moving parts.



Function

The Ironman 275Amp Dual Battery System is designed to be fully automatic. It allows two individual batteries to be charged as one but is also able to disconnect the two batteries to prevent cranking battery from discharging when accessories (such as refrigerators, lighting, etc), are connected to the auxiliary battery. It also supplies a priority charge to the main battery to ensure it is fully charged and able to start your vehicle.

Operation

1. Because the Ironman 275Amp Dual Battery System is designed to be automatic, under normal operating conditions it will perform all of its functions automatically and won't require any input from the driver. The exception to this would be if the vehicles main battery was dead flat preventing the IMS from automatically linking the batteries together when cranking the engine, in this case the manual override switch on the dash would be used to join the batteries together.

Auto Disengage

1. Once vehicle is started the IMS will disengage the aux. battery in order to priority charge the main battery. Once the main battery has reached 13.7V for more than 5 seconds it will link the batteries so that they are both receiving an equal charge from the alternator.
2. With engine running if the batteries drop below 12.2V the LED on the IMS will flash at 1 second intervals, after 5 minutes if the batteries remain under 12.2V the IMS will disengage the batteries.
3. If batteries are receiving no charge, and drop below 13.0V for more than 5 seconds the LED will turn off, and after 3 seconds the IMS will disengage.

Manual Override Switch

The IMS can be over ridden with the dash mounted switch. When the batteries are linked they can be disengaged by de-pressing the switch and holding for 8 seconds. When the IMS is disengaged it can re-link the batteries by depressing the switch momentarily.

When manual override function is operated the batteries will remain linked for 10 minutes. If after 10 minutes the voltage in either battery has not reached 13.0V the IMS will disengage, if the voltage in either battery reaches 13.0V the IMS will remain engaged and both batteries will continue to charge.

IMS Manual Override

Although the IMS can be operated manually it is not recommended that this feature is used unless completely necessary, as damage to the IMS stepper motor can occur if the control knob is forced, and this damage will not be covered by warranty.

The automatic operation of the IMS can be over ridden by depressing the control knob and rotating in a clockwise direction to the "manual on" position, or in an anti-clockwise direction to the "manual off" position. If the IMS is in the manual off position the automatic function is disabled.

LED Indications

On - IMS engaged.

Off - IMS disengaged.

Flashing at one second intervals - IMS is in low voltage disconnect mode. This indicates that the voltage in both batteries is below 12.2V, LED will flash for 5 minutes prior to disengagement.

Rapid flash - IMS control knob is locked in manual over ride mode.

Flashing at 5 second intervals - IMS has been over ridden by switch on dashboard.



Fault Finding

IMS will not automatically engage:

- Check all connections.
- Check condition of main battery.
- Make sure main and auxiliary batteries are connected to the correct poles on the IMS
- If the auxiliary battery is fully charged and has a larger capacity than the main battery, the auxiliary battery will not require a charge. There for the IMS will not engage the auxiliary until a load is connected to it.
- Make sure that the IMS is not locked in the manual off position.

Volt meter does not work.

- Check that yellow wire is connected to the accessories output from your ignition switch.
- Check that earth wire is connected to negative side of main battery.
- Check that green wire is connected to output pole on IMS, and red wire is connected to sense pole on IMS

Manual over ride switch does not work.

- Check all connections
- Make sure that the switch is depressed for at least 8 seconds to disengage IMS

Both batteries go flat.

- Check alternator output.

Main battery goes flat.

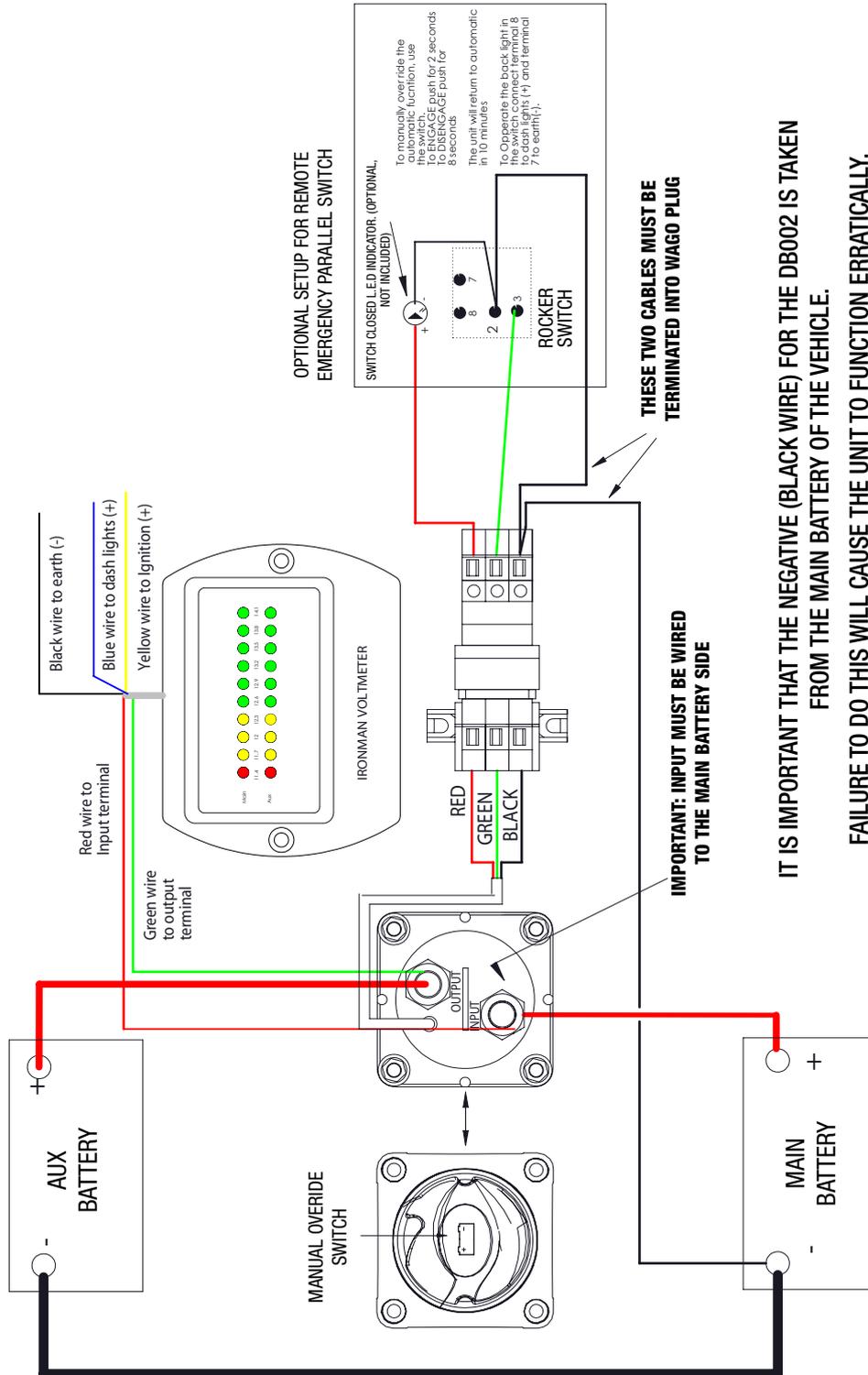
- Load test main battery.
- Make sure any accessories that will draw current while vehicle is not running are connected to the auxiliary battery.
Note: winch should always be connected to the main battery.

IMS functions erratically.

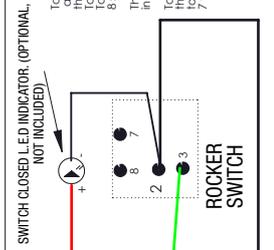
- Make sure that all earth connections are connected to the negative side of the main battery.



Wiring Diagram



OPTIONAL SETUP FOR REMOTE EMERGENCY PARALLEL SWITCH



THESE TWO CABLES MUST BE TERMINATED INTO WAGO PLUG

IMPORTANT: INPUT MUST BE WIRED TO THE MAIN BATTERY SIDE

IT IS IMPORTANT THAT THE NEGATIVE (BLACK WIRE) FOR THE DB002 IS TAKEN FROM THE MAIN BATTERY OF THE VEHICLE. FAILURE TO DO THIS WILL CAUSE THE UNIT TO FUNCTION ERRATICALLY.

