The LINK 2000-R is an integrated battery monitor, inverter/charger controller, and advanced alternator regulator. This manual pertains only to the installation, wiring, and testing of the alternator regulator portion of the system. All other features and functions concerning monitor operation and Freedom Inverter/Charger operation are described in the LINK 2000 Owner’s Manual (Part number 445-0198-01-01). You must be familiar with that manual before using the LINK 2000-R.

For use only with externally regulated 12- or 24-volt "P" Field type alternators. See "Required Reading," page 8.

THIS DOCUMENT APPLIES TO LINK 2000-R SERIAL NUMBER 5000 AND ABOVE.

The Helping Hand is used to draw your attention to very important sections of this manual or to indicate items of special interest. Please read these sections carefully.

See "Required Reading" page 8.

For use only with externally regulated 2000-R.

Uninstallers: This document is important for operation. Please leave it with the owner.

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Date and Revision: November 2002, Revision 1
Part Number: 445-0197-01-01
Contact Information
Web: www.xantrex.com Email: CustomerService@xantrex.com Phone: 1 800 670 0707 (toll free in North America) 1 604 422 2777 (direct) Fax: 1 604 420 2145
The operation of the front panel is the same as the LINK 2000 with the exception of the TIME switch. When the alternator regulator is on (REG ON energized) and TIME is selected, the alternator output current is displayed. It is preceded with the character “AAAAA”. For example, an alternator output current of 100 amps would be displayed as AI00.

The status lights on the front of LINK 2000-R use LEDs (light-emitting diodes) to indicate which cycle the alternator regulator is in during charging. The meaning of the lights is the same as described in the LINK 2000 installation manual. The only difference is that when there is no external AC power available, and the regulator is turned on, the status lights indicate the charge cycle for the alternator regulator. If external AC power is available, the charger is turned ON, and the alternator is also charging the battery, the status lights indicate the cycle of both the charger and the alternator regulator.

Status lights indicate which cycle the regulator (and/or the charger) is in. The AC light will be OFF if there is no external AC input.

Please refer to the diagram for a visual representation of the flowchart.
The Acceptance Cycle guarantees thorough charging by continuing to charge the battery until the charging current becomes a small percentage of battery capacity (2% default). The alternator output is varied to maintain the battery at the acceptance voltage. During the Acceptance Cycle the alternator current limit will not be exceeded even if a heavy load is placed on the system.

When the batteries have reached the acceptance voltage and the current is below 2%, the Acceptance Hold Cycle begins. If the Acceptance Cycle has lasted 3.5 hours, the Float Cycle begins, even if the charged parameters have not been met. If the voltage of either battery falls below the acceptance voltage for more than two minutes, the Charge Cycle starts again.

The LINK 2000-R uses the Ideal Regulator Output Module to control the alternator to conform to the Ideal Charge Curve's four defining cycles; Charge, Acceptance, Float, and Equalize. The following discusses details of each of the cycles.

**NOTES:**
1) Terminal references for the Ideal Regulator Output Module.
2) Voltage values given are for 70 °F and liquid lead-acid batteries.

**TURNING THE REGULATOR ON**
The regulator is turned on by supplying 12 V or 24 V to the REG ON (brown wire) terminal. It must have power only when the engine is running. See page 13.

**DELAY START-UP**
Behavior: No output on the Field terminal (blue wire). Two-second delay allows time for the engine to start.

**RAMPING UP**
Behavior: Output of alternator increases over a 20-second period. Ramping up the alternator output avoids shock-loading the belts with full alternator output. The output on the FIELD terminal is increased over a 20-second period until the alternator current limit (default value 100 A) is reached. The Charge Cycle now begins. If the acceptance voltage is reached before the current limit, the Acceptance Cycle begins.

**CHARGE CYCLE**
Behavior: Alternator current at maximum and battery voltage increasing. The Charge Cycle ensures fast charging without alternator overload. The alternator current limit will not be exceeded. The FIELD output is varied to hold the alternator at its current limit until the acceptance voltage is reached. When the acceptance voltage has been attained by either battery, the Acceptance Cycle begins.

**ACCEPTANCE CYCLE**
Behavior: Battery amps falling, voltage at 14.4 V for 12 V systems, 28.8 for 24 V. (Voltage depends on battery type and ambient temperature settings.) The acceptance voltage is determined by the acceptance cycle parameters. The behavior of the battery will continue until either the acceptance voltage is reached or the current is below 2%.

**FLOAT CYCLE**
Behavior: Battery voltage will continue to float at the acceptance voltage. The acceptance voltage is determined by the acceptance cycle parameters. The behavior of the battery will continue until it is restoked.

**EQUALIZE CYCLE**
Behavior: Battery voltage will continue to float at the acceptance voltage. The acceptance voltage is determined by the acceptance cycle parameters. The behavior of the battery will continue until it is restoked.

**HOW THE LINK 2000-R CHARGES**
See page 18 of LINK 2000 manual for details of the Ideal Charge Curve.

**WARNING: LIMITATIONS ON USE**
Please refer to your product user manual for limitations on uses of the product. Specifically, please note that the Link 2000-R is not intended for use in connection with life support systems. Xantrex makes no warranty or representation in connection with any use of the product for such purposes.

**RETURN MATERIAL AUTHORIZATION POLICY**
Before returning a product directly to Xantrex you must obtain a Return Material Authorization (RMA) number and the correct factory “Ship To” address. Products must also be shipped prepaid. Product shipments will be refused and returned at your expense if they are unauthorized, returned without an RMA number clearly marked on the outside of the shipping box, shipped collect, or shipped to the wrong location.

When you contact Xantrex to obtain service, please have your instruction manual ready for reference and be prepared to supply:
• The serial number of your product
• Information about the installation and use of the unit
• Information about the failure and/or reason for the return
• A copy of your dated proof of purchase

**RETURN PROCEDURE**
1. Package the unit safely, preferably using the original box and packing materials. Please ensure that your product is shipped fully insured in the original packaging or equivalent. This warranty will not apply where the product is damaged due to improper packaging.
2. Include the following:
   • The RMA number supplied by Xantrex Technology Inc clearly marked on the outside of the box.
   • A return address where the unit can be shipped. Post office boxes are not acceptable.
   • A contact telephone number where you can be reached during work hours
   • A brief description of the problem
3. Ship the unit prepaid to the address provided by your Xantrex customer service representative.

If you are returning a product from outside of the USA or Canada
In addition to the above, you MUST include return freight funds and are fully responsible for all documents, duties, tariffs, and deposits.

If you are returning a product to a Xantrex Authorized Service Center (ASC)
A Xantrex return material authorization (RMA) number is not required. However, you must contact the ASC prior to returning the product or presenting the unit to verify any return procedures that may apply to that particular facility.
The Charge Cycle is automatically restarted if the voltage of the batteries drops below 13.5 V (27 V for 24 V) for any reason. This cycle will continue until the batteries are fully charged.

**Float Cycle**

During the Float Cycle, the float voltage is maintained. The alternator will supply up to its current limit to maintain the float voltage and supply DC loads.

The Ramp Up Cycle may be manually restarted by turning off the key switch supplying REG ON or shutting off and restarting the engine. The Ramp Up Cycle has a duration of 1.5 hours and may be repeated as needed.

The Equalize Cycle is a controlled overcharge that removes lead sulfate from the batteries. It is automatically initiated every 30 days when in deep cycling service.

To start the Equalize Cycle, press the **FLASH LED** button to turn it red, followed by the **RED A HRS BUTTON**. Hold them both down for five seconds until the red CHARGE LED begins to flash. The Equalize Cycle then begins and will automatically terminate 3.5 hours after initiation, or when the voltage drops to 2% of capacity at 16.0 V (Equalize terminated in eight hours if using the Xantrex Link 2000-R).

**Acceptance Hold Cycle**

If the battery voltage falls below 14.4 V (28.8 V for 24 V) and the battery amps drop below 2%, the Acceptance Hold Cycle is automatically initiated. If the voltage of the batteries falls below the charged voltage for more than two minutes, the Charge Cycle starts again. If the voltage of the batteries falls below 14.4 V (28.8 V for 24 V) and the battery amps drop below 2% for more than two minutes, the Charge Cycle is automatically restarted.

**Limitation or Exclusion of Incidental or Consequential Damages**

This Limited Warranty gives you specific legal rights. You may have other rights which may vary from state to state or province to province.

The Equalize Cycle is a controlled overcharge to remove lead sulfate that is not removed during normal charging. Liquid batteries should be equalized about every 30 days when in deep cycling service.

Xantrex Technology, Inc. (“Xantrex”) provides this Limited Warranty, which covers defects in workmanship and materials in your product for a period of 12 months from the date of purchase at point of sale to you, the original end user customer.

This Limited Warranty is provided by Xantrex Technology, Inc. (“Xantrex”) and covers defects in workmanship and materials in your product for a period of 12 months from the date of purchase at point of sale to you, the original end user customer.

What does this warranty not cover?

- a) the product if it has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, operating conditions beyond the maximum or minimum limits listed in the Xantrex product specifications including high input voltage from generators and lightning strikes;
- b) the product if its original identification (trade-mark, serial number) markings have been defaced, altered, or removed;
- c) the product if repairs have been done to it other than by Xantrex or its authorized service centers (hereafter “ASCs”);
- d) the product if the original end user customer’s name and address are not legible on the product label or identification plate.

To the extent you are entitled to any implied warranties, the extent of your remedies for breach of the implied warranties is limited to the provisions of this Limited Warranty.

This Limited Warranty does not cover normal wear and tear of the product or costs related to the removal, installation, or troubleshooting of the product.

How do you get service?

If your product requires troubleshooting or warranty service, contact your merchant. If you are unable to contact your merchant, or the merchant is unable to provide service, contact Xantrex directly at: 1 604 420 2145 (toll free in North America) 1 604 422 2777 (direct) or Email: CustomerService@xantrex.com.

Proof of purchase may be in any one of the following forms:

- The dated purchase receipt from the original purchase of the product at point of sale to the end user, or
- The dated invoice or purchase receipt showing original equipment manufacturer (OEM) status, or
- Customer service ticket or warranty registration card, if the product is a commercial product, or
- The dated invoice or purchase receipt showing the product exchanged under warranty.

What happens if the product is repaired or replaced?

In any warranty claim, dated proof of purchase must accompany the product and the product must not have been disassembled or modified. Proof of purchase may be in any one of the following forms:

- The dated invoice or purchase receipt showing the product exchanged under warranty
- The dated dealer invoice or purchase receipt showing original equipment manufacturer (OEM) status, or
- Customer service ticket or warranty registration card, if the product is a commercial product, or
- The dated purchase receipt from the original purchase of the product at point of sale to the end user.

Xantrex will, at its option, repair or replace the defective product free of charge, provided that you notify Xantrex of the product defect and return the product, freight prepaid, to the following address:

Xantrex Technology, Inc.
12345 Main Street
Any City, Any State 12345
USA

Xantrex will, at its option, repair or replace the defective product free of charge, provided that you notify Xantrex of the product defect and return the product, freight prepaid, to the following address:

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This Limited Warranty shall be governed by, and construed in accordance with, the laws of the State of California, United States of America. To the extent you are entitled to any implied warranties, any implied warranty of merchantability or fitness for a particular purpose, is limited in duration to the period of this Limited Warranty.

Xantrex disclaims all other warranties, express or implied, including without restriction any implied warranties of merchantability or fitness for a particular purpose. Any implied warranty of merchantability or fitness for a particular purpose to the extent required under applicable law to apply to the product shall be limited in duration to 12 months.
EQUALIZING CAUTIONS!

Turn off sensitive electronics before equalizing. Equalizing causes the battery to gas. You should check the battery electrolyte before and after equalization. Do not over-fill before equalization as the electrolyte may expand and cause it to flow over the tops. You should be present during this type of charging.

Hydrogen and oxygen gas is generated during equalization. Make sure there is adequate ventilation.

Batteries should not be equalized every charge/discharge cycle. Normally, the battery is cycled between 50% charged and the 85% to 95% charged level reached by the normal Charge and Acceptance Cycle. Every 30 days, though, the batteries should be equalized to regain full capacity and extend life.

To equalize, first go through a complete Charge and Acceptance Cycle. Check the electrolyte level, but do not overfill. Re-check and top off the electrolyte after equalizing.

Remember, equalizing is constant current charging with a small regulated current that permits a higher maximum voltage. The goal is to use a small current and gradually let the battery rise to its maximum voltage.

EQUALIZING GELLED BATTERIES

Gelled batteries are not normally equalized. However, if the battery has been severely discharged, the voltage of the battery may easily reach the acceptance level with a very small current. In fact, the current may be less than the 2% required to terminate the Acceptance Cycle. Equalization may be the only way to get the battery to accept a charge. Be sure that the battery TYPE # is set to #1 or #2 before using this cycle on gelled batteries.

The equalization voltage is limited to the acceptance voltage but the cycle lasts for 3.5 hours. (Eight hours if using the Freedom charger.) Please consult your battery manufacturer regarding the appropriateness of this cycle for their batteries.

Neither the GREEN or the RED LED should be ON when the engine is off! If the RED LED is ON, and the green LED (labeled "ON") is OFF, it is an indication that the FET is shorted or the field is connected to some other source. DO NOT OPERATE THE SYSTEM UNTIL THIS IS RESOLVED!

It is now time to start up the engine and see how everything works. For this test make sure the battery charger or any other charging sources are turned off. Partially discharge the batteries (remove at least 20% of the capacity—it may take a few hours at a relatively high discharge rate). Start the engine and watch the battery voltage to see that it rises to and levels off at about 14.4 (28.8) volts in the Acceptance Cycle. With the default values, when the battery current falls to about 4 amps (2% of the battery capacity) the regulator will shift into the Float Cycle and maintain the batteries at the Float voltage. Also check the alternator current by pressing the TIME button and using a millivolt meter to measure the voltage across the alternator shunt and compare it to the reading on the LINK 2000-R. The millivolt reading multiplied by ten should equal the LINK 2000-R alternator current reading. The alternator current measurement is inherently less accurate than the battery current measurement—your millivolt reading will be high.

STANDBY REGULATORS

Part of our power system design philosophy is to consider spares and backup systems before they are needed. We have designed the Ideal Regulator with this in mind.

The Ideal Regulator Output Module wiring harness is compatible with standard P-Field external regulators. Simply carry a spare regulator that is plug compatible and just unplug the Output Module and plug in your standby regulator. You may use a simple, adjustable, constant voltage regulator or we would suggest that you consider the Xantrex Incharge Regulator, which provides three-stage charging, plug compatibility, and is fully adjustable.

Install and test your standby regulator or any other spares you might carry before cruising!
SPECIAL SETUP FOR LINK 2000-R

The following is a list of special setups that may be necessary to tailor the LINK 2000-R to your system. Please see pages 10-14 of the LINK 2000 Owner’s Manual for details on how to use the FNC mode.

F10 - ALTERNATOR CURRENT LIMIT

DEFAUL: 100 RANCE = OFF, 20-320 RMS, STEP = 10 A

NOTE: Function F10 is NOT changed in a reset to factory default values. If you cannot pass this test see the troubleshooting section of this manual. The time required to complete the test is: 30-60 seconds.

YELLOW WIRE must be terminated on the small screw on the alternator side of the alternator shunt. This wire should be exactly as described to ensure proper operation. Since this wire is at battery voltage it should be protected with a 2-amp fuse at the shunt as shown; install the fuse after the wiring is completed. No other wires should be connected here.

If you cannot pass this test do not start the engine!

This is the final checkout. Plug the 8 conductor data cord (the larger of the two phone cords) into the Monitor Terminal Board and the Regulator Output Module. Check the battery amps—you should see the same low number as in PROGRESS CHECK #2. The green ON LED on the Ideal Regulator Output Module must be off.

Now we want to simulate the engine running, so turn on the regulator by turning the key switch to the ON position, or if normally open oil pressure switch is used, jumper together its two terminals.

For this test only we want to supply voltage to the REG ON terminal while the engine is off. The GREEN ON LED should be ON. The red Charge Cycle Status light on the LINK 2000-R front panel should also be ON. The RED CHG LED on the Output Module, which indicates that field voltage is being supplied, should gradually increase in brightness during the next 30 seconds. Also check the TIME function which should display "a000" indicating the alternator output current is zero. To verify that current is actually flowing into the alternator field use the LINK 2000-R to check the number of amps flowing from whichever battery has been selected by the main battery switch. You should see -3 to -5 amps of current flowing. This current is being supplied to the alternator field, and perhaps, to other instrumentation that is also being supplied to the alternator field. Also, if you are not using an oil pressure switch, you can verify that the field is energized by touching the end of the alternator shaft with a steel screwdriver. Do it with the regulator turned on (wait 20 seconds for ramp-up cycle) and with it turned off—there should be a noticeable difference. If you cannot pass this test see the troubleshooting section of this manual. The time required to complete the test is: 30-60 seconds.
install the fuse after the wiring is connected. No other wires should be connected here.

Battery temperature should never exceed 120 °F. We recommend a 110 °F limit.

---

**Required Reading**

1. Read the REQUIRED READING section of the LINK 2000 owner’s manual.
2. All wiring to the terminal board should be #16 AWG (#14 may be used).
3. The same 8 wire twisted pair cable recommended in the LINK 2000 installation manual may be used. This wire is color coded to the brown wire. The red, yellow, green, and black wires are connected to the positive and negative battery terminals. The gray wire is power ground. It is connected to the alternator ground.
4. The BRWN WIRE connects to the +12 V / 24 V supply. It is shown connected to the alternator, discharge the battery, and cause system failure. The GRY WIRE is power ground. It is shown connected to the alternator field terminal on the back of the alternator. (The RED LED, on the Ideal Regulator Output Module, labeled CHG indicates field voltage is present on this BLUE WIRE. The BLUE LED glows more brightly as the alternator output increases.)
5. The LINK 2000-R is designed to regulate N-type alternators; that is, alternators that require external regulation. The LINK 2000-R is in control of the system. The same 8 wire twisted pair cable recommended in the LINK 2000 installation manual may be used. This wire is color coded to the brown wire. The red, yellow, green, and black wires are connected to the positive and negative battery terminals. The gray wire is power ground. It is connected to the alternator ground.
6. All wiring to the terminal board should be #16 AWG (#14 may be used).
7. The warranty does not cover the regulator and the diode trio in the alternator. This includes most Japanese and Internationally regulated alternators. If these alternators are to be converted to external regulation, the Link 2000-R with an internally regulated alternator without modifying it to use external regulation! See #4 on page 8.
8. Battery temperature should never exceed 120 °F. We recommend a 110 °F limit.

---

**WARNING**

Improperly converted alternator may cause damaging high voltages. Please be sure proper voltages are applied to the alternator's input. The system has been designed to provide proper voltages and currents to the alternator. Improper voltages and currents can damage the alternator and cause system failure.

---

**Table: Alternator Maximum Output**

<table>
<thead>
<tr>
<th>Cable Size (AWG)</th>
<th>Maximum Output</th>
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<tbody>
<tr>
<td>10 OR LESS</td>
<td>120 V</td>
</tr>
<tr>
<td>10 TO 20 FT</td>
<td>200 V</td>
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<td>200 V</td>
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</table>

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**Diagram:**

[Diagram of wiring connections and component placements, labeled with terminals and wire colors.]
WIRING INSTRUCTIONS

WIRE and TERMINAL #9 BROWN WIRE should be a twisted pair. TERMINAL #10 YELLOW WIRE (B2SHB) is connected to the small screw on THE BATTERY SIDE of the Battery #2 shunt (B2SHB). TERMINAL #10 BLACK WIRE is connected to the small screw on the LARGE SCREW ON THE TOP. TERMINAL #10 WHITE WIRE should be twisted together with the BROWN WIRE.

Progress Check #2

With everything off select Battery #1 or #2 Amps—the meter now is fully operational. Now it is time to check the battery current function. Plug the meter’s ribbon cable into the Monitor Terminal Board and/or insert the fuses. Turn off all DC loads and charging sources. Measure current flowing in or out of the alternator.

Refer to the wiring diagram while using these instructions.

There are several components to the LINK 2000-R. Meters:

- The Monitor Terminal Board contains the microprocessor and display. The ribbon cable from the meter has a Harness that connects the Monitor Terminal Board to the inverter/charger. It also has a RJ-11 jack for the Ideal Regulator.

- The Inductive Sensor contains a 25’ long 18” ribbon cable. It also has the Ideal Regulator circuit board. The sensor is connected to the Ideal Regulator circuit board.

- The Alternator Shunt contains a 25’ long 8 conductor data cord (described in the next section) between the Monitor Terminal Board and the Ideal Regulator Output Module to disable the regulator. The alternator will freewheel harmlessly.

- The Battery Shunt contains a 25’ long 4 conductor remote cord.

- The Four Conductor Remote Cord contains a 25’ long 4 conductor remote cord. The Four Conductor Remote Cord contains a 25’ long 4 conductor remote cord. This is the smaller of the two cords.

- The Eight Conductor Data Cord contains a 25’ long 8 conductor data cord. This is the larger of the two cords.

- The FET (field effect transistor) that actually does the work of the alternator that is not subject to salt or fresh water spray. The components in this module are keyed so that it cannot be improperly plugged into the module. The colors mentioned below correspond to the color code of the wiring harness. There is also a 25-foot 8 conductor数据 cord supplied to interconnect the Monitor Terminal Board and the Ideal Regulator Output Module. The following discusses each of the wires connected to the regulator.

- The harness that is supplied with this module is a standard alternator harness. It is available from your dealer. See LINK 2000 manual.

- Our Customer Service Manager says, “Be a genius—ensure a successful installation by following our wire-by-wire instructions and please do the two progress checks and the final startup test.”
shown in the diagram.

NOTE: If only one current input is used, jumper terminals #7 & #9 together. This hookup will display the same current information for both the Battery #1 and #2 selection.

If the system is left on for long periods (long enough to significantly discharge the battery), the meter must be turned off before proceeding. If you have questions, call your dealer or Xantrex Technology Inc.

The wires hooked up so far allow you to check the voltage monitoring functions. Install the voltage sense lead fuses and fuse holders. They should be within a few hundredths of a volt. If they are not, check your voltmeter to compare the voltages shown on the Link 2000-R against the actual battery voltage. They may be supplied from the common of the battery switch. (Be careful in the installation of the shunt and its wiring.)

The #5 Battery. The meter consumes about 28 mA (0.028 A). If left on all the time it would use about 0.7 Ah per day.

If the #1 Battery is selected by the battery switch is the battery that supplies the power for the meter. It should be supplied directly from Battery #2 positive. Be sure to install the 2-amp fuse (B2V) supplies Battery #2 voltage to the Link 2000-R for sensing.

VIOLET WIRE

TERMAL #1 - GROUND SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #10 YELLOW WIRE and TERMINAL #9 BROWN WIRE should be a twisted pair.

>><< The Meter consumes about 8 mA (0.008 A). If left on all the time it would use less than 0.2 Ah per day.

The wires hooked up so far allow you to check the current monitoring functions. It must be connected on the BSHG (Grounded) side of the battery shunt. The BSHG side of the shunt is the side opposite of the negative battery terminals. It must have a good connection to one of the two #10 screws on the top of the battery shunt.

TERMINAL #6 - All battery to be monitored jumpe to TERMINAL #4 - RED WIRE.

BLUE WIRE

TERMAL #7 - BATTERY SIDE of the battery #1 shunt (B1SHB). This wire should be located exactly as shown in the diagram as near the battery as possible.

The TERMINAL #8 BLUE WIRE and terminals #8 & #10 together. This hookup will display the same current measurements.

The TERMINAL #2it is connected to the small screw on the BSHG (Grounded) is connected to the small screw on the BSHG (Grounded) side of the battery shunt. This wire will be the common for all the batteries.

The TERMINAL #4 RED WIRE is the +12 V / +24 V power to supply the meter. The wiring is to be a twisted pair. Wired this way, the meter cannot accidentally be powered.

The TERMINAL #10 WHITE WIRE AND ORANGE WIRE attached to Terminal #8 should be a twisted pair. The ORANGE WIRE (AGND) is the Analog Ground. It is the reference for all voltages. The GROUNDED, OR LOAD SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #5 BLUE WIRE is to install a separate on/off switch in it before it connects to the terminal board. Just remember to turn off the meter when leaving the system unattended. (Amp hours will be reset to zero when the unit is repowered.)

With this option, if the battery switch is turned off, the meter is de-powered. It has the disadvantage of always consuming a little bit of power from the battery. Caution: The next four wires are for the dual battery shunt sense leads. >>

The TERMINAL #2 RED WIRE AND ORANGE WIRE is the +12 V / 24 V power to supply the meter. The wiring is to be a twisted pair.

From now on you may de-power the meter by unplugging the ribbon cable. Do not connect anything else to this terminal.

The wires hooked up so far allow you to check the current monitoring functions. It must be connected on the BSHG (Grounded) side of the battery shunt. The BSHG side of the shunt is the side opposite of the negative battery terminals. It must be connected to the terminal board. It should be supplied directly from Battery #2 positive.

The TERMINAL #10 YELLOW WIRE and TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #4 RED WIRE

TERMINAL #10 YELLOW WIRE and TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #2 RED WIRE

TERMINAL #10 WHITE WIRE AND ORANGE WIRE attached to Terminal #8 should be a twisted pair.

The TERMINAL #5 BLUE WIRE

The TERMINAL #8 BLUE WIRE

The TERMINAL #7 BLACK WIRE (AGND) is the Analog Ground. It is the reference for all voltages. The GROUNDED, OR LOAD SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #5 BLUE WIRE

The TERMINAL #8 BLUE WIRE

The TERMINAL #7 BLACK WIRE (AGND) is the Analog Ground. It is the reference for all voltages.

The TERMINAL #2 RED WIRE

The TERMINAL #10 WHITE WIRE AND ORANGE WIRE attached to Terminal #8 should be a twisted pair.

The TERMINAL #5 BLUE WIRE

The TERMINAL #8 BLUE WIRE

The TERMINAL #7 BLACK WIRE (AGND) is the Analog Ground. It is the reference for all voltages. The GROUNDED, OR LOAD SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #5 BLUE WIRE

The TERMINAL #8 BLUE WIRE

The TERMINAL #7 BLACK WIRE (AGND) is the Analog Ground. It is the reference for all voltages. The GROUNDED, OR LOAD SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #9 BROWN WIRE should be a twisted pair.

The TERMINAL #5 BLUE WIRE

The TERMINAL #8 BLUE WIRE

The TERMINAL #7 BLACK WIRE (AGND) is the Analog Ground. It is the reference for all voltages. The GROUNDED, OR LOAD SIDE, of the battery #2 shunt (B2SHG). The TERMINAL #9 BROWN WIRE should be a twisted pair.

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