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C40R/50 Remote
C40R/100 Remote
DVM/C40 Faceplate

Installation Guide

C-Series Meter Display

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Smart choice for power

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C-Series Meter Display

Installation Guide

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Contents

1. Introduction 1

2. Important Safety Information. 2

Warnings and Cautions 3

Additional Safety Guidelines 3

3. Features 4

The Liquid Crystal Display (LCD) 5

Amp-Hour Reset and Backlight Button 6

LED Status Indicator 6

4. Installation 7

Jumper Installation (Step 1) 8

Cable Installation (Step 2) 10

Mounting the Remote (Step 3) 14

5. Operation 17

Status Indicator 17

Resetting the Amp-Hour Meter 18

Turning the Display Backlight On or Off 18

6. Troubleshooting 18

7. Warranty and Return 19

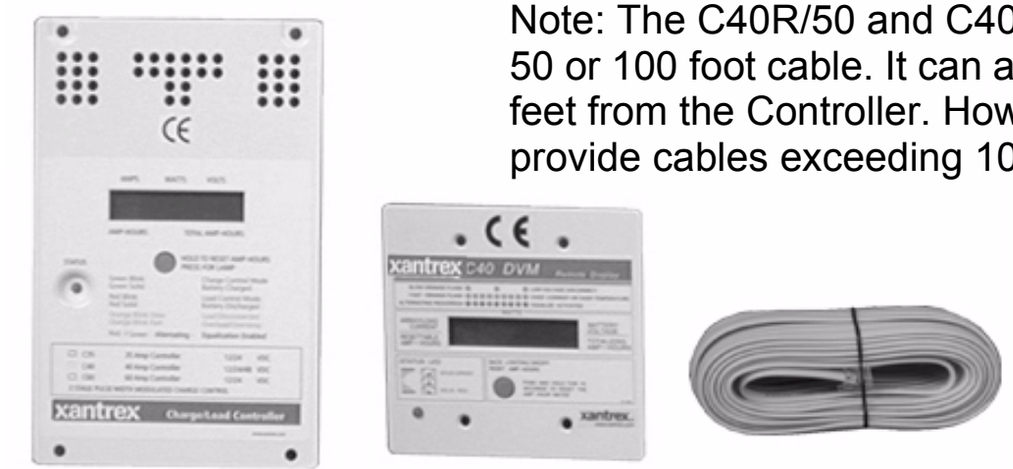
8. Other Xantrex Products 26

1 Introduction

Thank you for purchasing the Xantrex C-Series Meter Display. The C-Series Meter Display is an optional accessory for the C-Series Multifunction DC controllers C35, C40 and C60. It provides a digital display of the voltage, current, and amp-hour status for the C-Series Multifunction DC Controller.

The C-Series Meter Display comes in two versions:

- the faceplate (DVM/C40), which replaces the front cover.
- the remote (C40R/50 and C40R/100), which can be installed remotely up to 1,000 feet away from the controller.



The Faceplate The Remote

Note: The C40R/50 and C40R/100 comes with either a 50 or 100 foot cable. It can also be installed up to 1,000 feet from the Controller. However, Xantrex does not provide cables exceeding 100 feet.

Figure 1 The Faceplate and Remote

Please note that labeling shown on the product photographs in this guide may not exactly match the unit you purchased.

Read this guide before connecting or using the C-Series Meter Display, and save it for future reference. The main topics in the guide are as follows:

- “Important Safety Information” on page 2
- “Features” on page 4
- “Installation” on page 7
- “Operation” on page 17
- “Troubleshooting” on page 18
- “Warranty and Return” on page 19

2 Important Safety Information

Misusing or incorrectly connecting the C-Series Meter Display may damage the equipment or create hazardous conditions for users. Read the following safety instructions and pay special attention to all Warnings and Cautions statements in the guide.

Warnings identify conditions that may result in personal injury or loss of life.

Cautions identify conditions or practices that may damage the unit or other equipment.

Warnings and Cautions



WARNING: Explosion Hazard

Do not use the C-Series Meter Display in the presence of flammable fumes or gases. Do not use the C-Series Meter Display in an enclosure containing automotive-type, lead-acid batteries. These batteries, unlike sealed batteries, vent explosive hydrogen gas, which can be ignited by sparks from electrical connections.



WARNING: Shock Hazard

Ensure all power sources are disconnected before proceeding.

Failure to follow these safety guidelines may cause personal injury and/or damage to the C-Series Meter Display. It may also void your product warranty.

Additional Safety Guidelines

Be sure to read, and adhere to, the Safety Guidelines listed in the Owner's Manual for the C-Series Multifunction DC Controller.

3 Features

The C-Series Meters have three features:

- a Liquid Crystal Display (LCD) to show current, voltage, amperage, resettable amp hours and total amp hours,
- an Amp-hour Reset Button, which is also used to illuminate or dim the display, and
- a Light Emitting Diode (LED) to indicate system status.

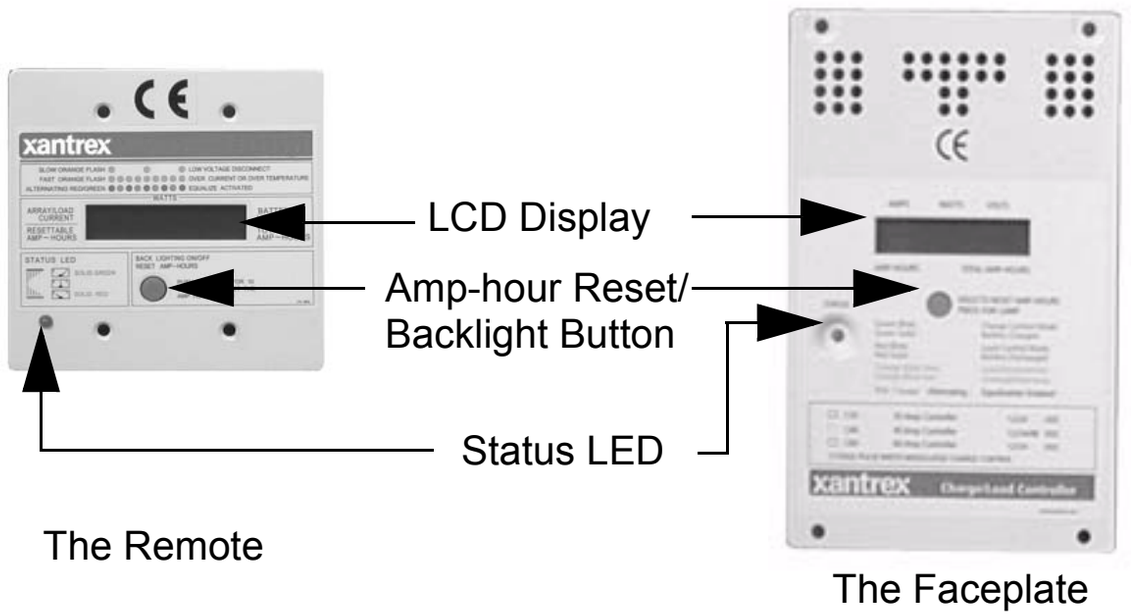


Figure 2 Faceplate and Remote Features

The remote is supplied with either a 50-foot (15 m) or a 100-foot (30.5 m) communications cable. Cable runs up to 1,000 feet (305 m) can be used, but cables exceeding 100 feet are not provided by Xantrex.

The Liquid Crystal Display (LCD)

The LCD on the faceplate or remote provides the following information.

Information Type	Display Value/Range
Current from PV Array or DC Load	0 to 85 amps DC (in whole numbers only)
Battery Voltage	4 to 100 volts DC (in 0.2 volt increments)
Watts	0 to 3,600 watts (volts x amps)
Amp hours	0 to 65,536 Ah; can be reset to 0
Total amp hours	0 to 65,536 Ah; resets to zero when power is disconnected
Status LED	green, red, or orange

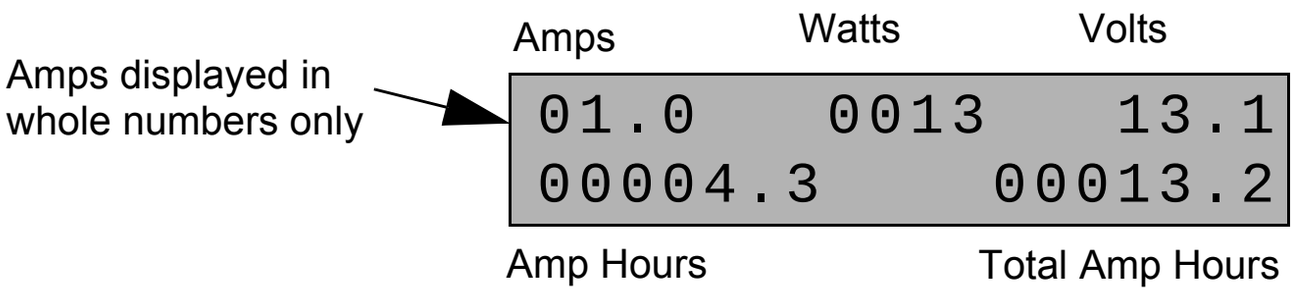


Figure 3 LCD Features

The contrast of this display can be adjusted by a potentiometer located on the back on the unit. The potentiometer is a black, round knob on the circuit board next to the jumper pins. See page 9 for the location of this potentiometer.

Amp-Hour Reset and Backlight Button

The amp-hour meter on the faceplate or remote can be reset by two different methods.

Automatic resetting occurs when the C-Series Multifunction DC Controller is first connected and activated and each time it's disconnected from the battery or the meter cable.

To manually reset the amp-hour meter, press and hold the push-button on the front of the meter until the display resets.

This button also activates or deactivates the backlight for the LCD when pressed and released immediately.

LED Status Indicator

The multicolor LED indicates the operating status of the controller. A color-coded label is included on the cover of the controller explaining the status LED's indications. It blinks green, red, or orange depending on the status of the system. The sequence of the flash also changes depending on the operation of the controller at that time.

See page 17 for a basic description of these indications.

See the Owner's Manual for the C-Series Multifunction DC Controller for a more detailed description of the LED indications.

Important: The green and red color of the LED only indicates the particular operating mode and the battery voltage level. It does not indicate whether the charging source is functioning properly.

4 Installation

The following sections describe how to install the C-Series Meter Display. They include detailed instructions for the following steps.

1. **Jumper Installation (Step 1):** Set the voltage setting on the faceplate or remote to match the system voltage by installing the jumper over the appropriate pins. *This step is critical to the proper operation of the unit.*

   See "Jumper Installation (Step 1)" on page 8 for instructions.
2. **Cable Installation (Step 2):** Connect the display to the C-Series controller using the communications cable.

   See "Cable Installation (Step 2)" on page 10 for instructions.
3. **Faceplate/Remote Installation (Step 3):** Determine the location and mounting method for the remote (if used).

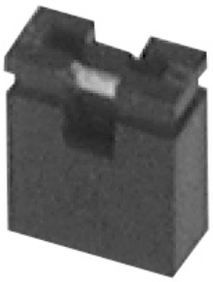
   See "Mounting the Remote (Step 3)" on page 14 for instructions.

Jumper Installation (Step 1)

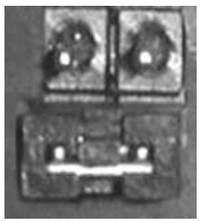
Four sets of jumpers are located on the right side of the circuit board on the back of the faceplate. Three jumpers set system voltage to 12 volts, 24 volts, or 48 volts. The fourth jumper dims the backlight on the display to conserve power and improve accuracy when longer cable runs are used. See Figure 5 for jumper locations.

To enable a selection, carefully slide the jumper over the top of both pins. This is called installing the jumper.

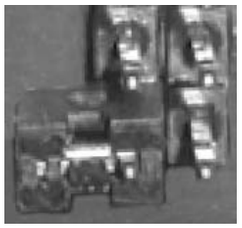
To disable a selection, carefully slide the jumper over only one of the pins. This is called removing the jumper.



Jumper



Jumper Installed
(Jumper is on both pins)
(Selection enabled)



Jumper Removed
(Jumper is only on one pin)
(Selection disabled)

Figure 4 Jumper Positions

To select and set the voltage:

- Install the jumper over the pins that correspond to the voltage of the system. See Figure 5 for the location of the voltage jumpers.

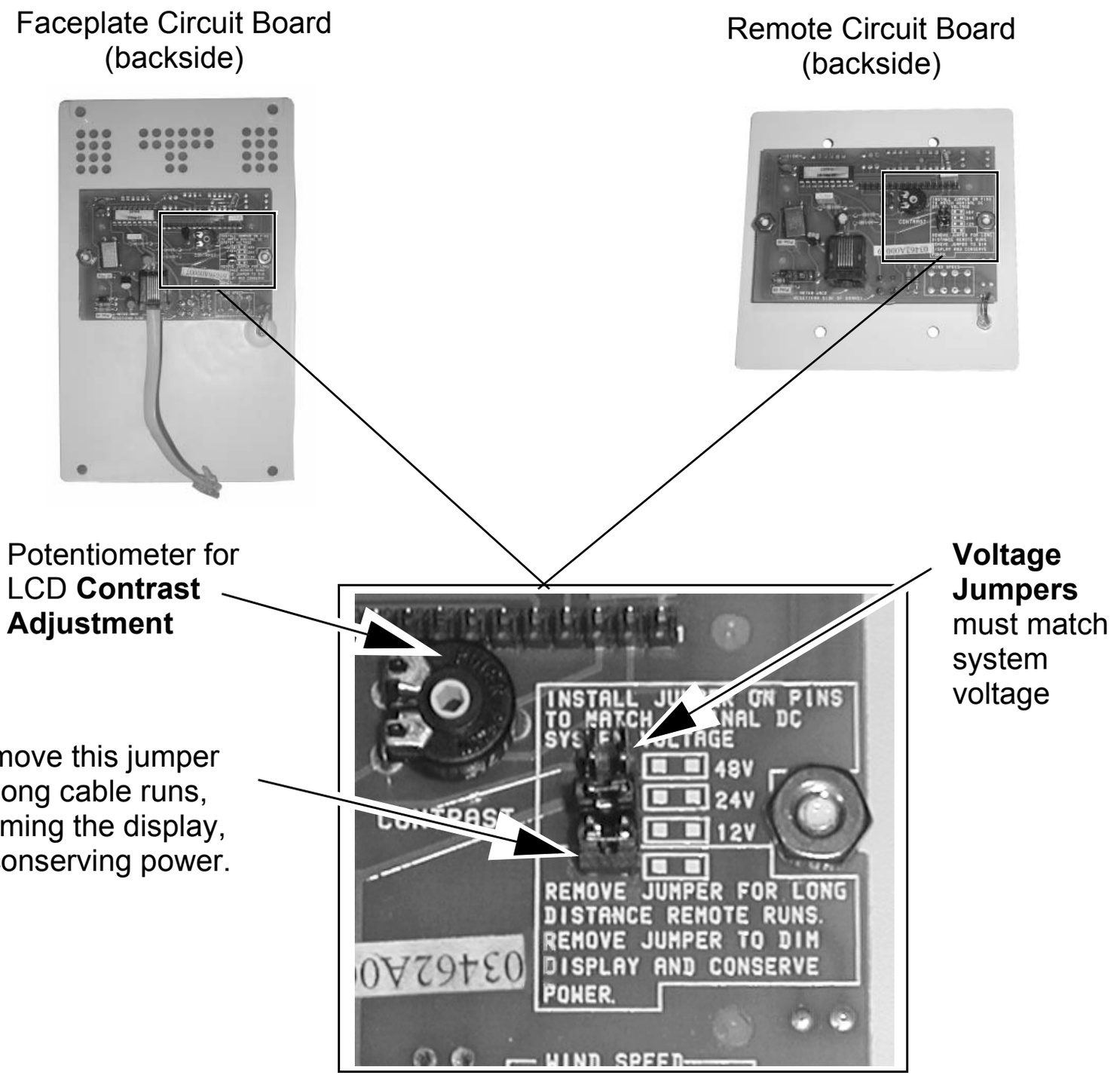


Figure 5 Jumper Locations on the FacePlate and Remote

Cable Installation (Step 2)

Connect the display to the controller using the serial communications cable provided. The cable is a six-conductor telephone cable with modular-type connectors (RJ-15). Although any telephone-type cable will work, the cables provided with the displays use stranded and tin-plated wire for better performance and longer life.

The following instructions are illustrated in Figure 6.

To connect the Faceplate to the C-Series controller:

1. Remove the front cover of the C-Series controller by removing the four screws on the front cover of the unit.
2. Remove the LED on the circuit board of the C-Series controller next to the RJ-15 Port just above the BATTERY POSITIVE connector. If the LED must be replaced in the future, it will operate in either orientation, except if replaced incorrectly, the color of the status LED will be reversed.
3. Insert the serial communications cable from the faceplate into the RJ-15 Port.
4. Align the faceplate on the front of the C-Series controller so that the holes for the faceplate match.
5. Secure the faceplate in place using the four screws removed in Step 1.

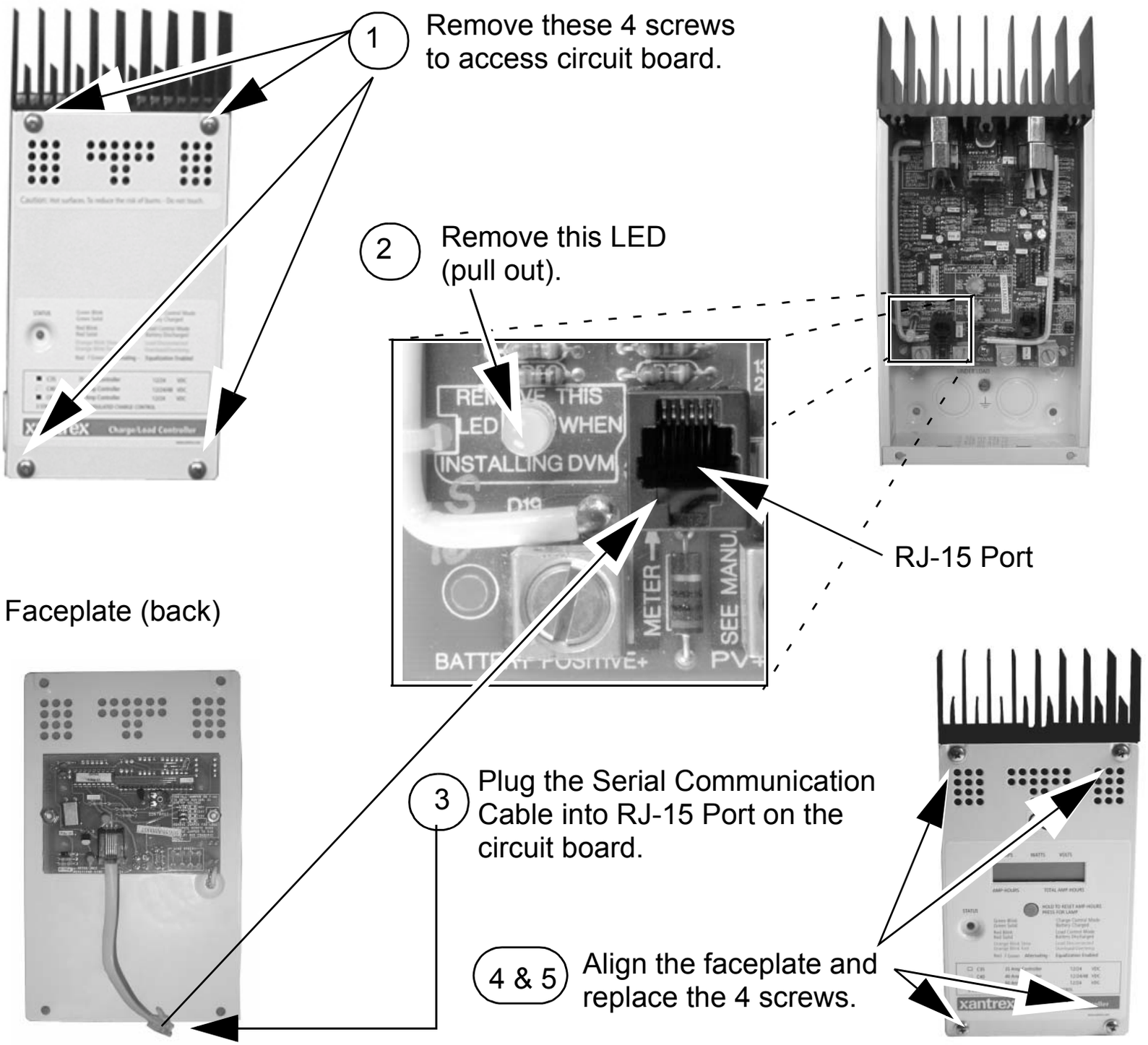


Figure 6 Connecting the Faceplate

To connect the remote:

1. Remove the front cover of the C-Series controller by removing the four screws on the front cover of the unit.
2. Route one end of the serial communications cable (SCC) through a knockout on the controller. Use a strain relief to hold and protect the cable.
3. Plug this end of the yellow cable into the RJ-15 Port on the circuit of the controller.
4. Route the other end of the SCC to where the remote display will be located. Plug this end of the cable into RJ-15 Port on the backside of the remote. Ensure you route it through the mounting surface (i.e., wall or panel) if necessary.
5. Install the remote where desired. Four holes are provided for installing screws or fasteners to secure the display in the mounting surface.

   See "Mounting the Remote (Step 3)" on page 14 for additional information about how to mount the remote.
6. Secure the original faceplate in place using the four screws removed in Step 1.

Important: The LED does *not* need to be removed when using the remote.

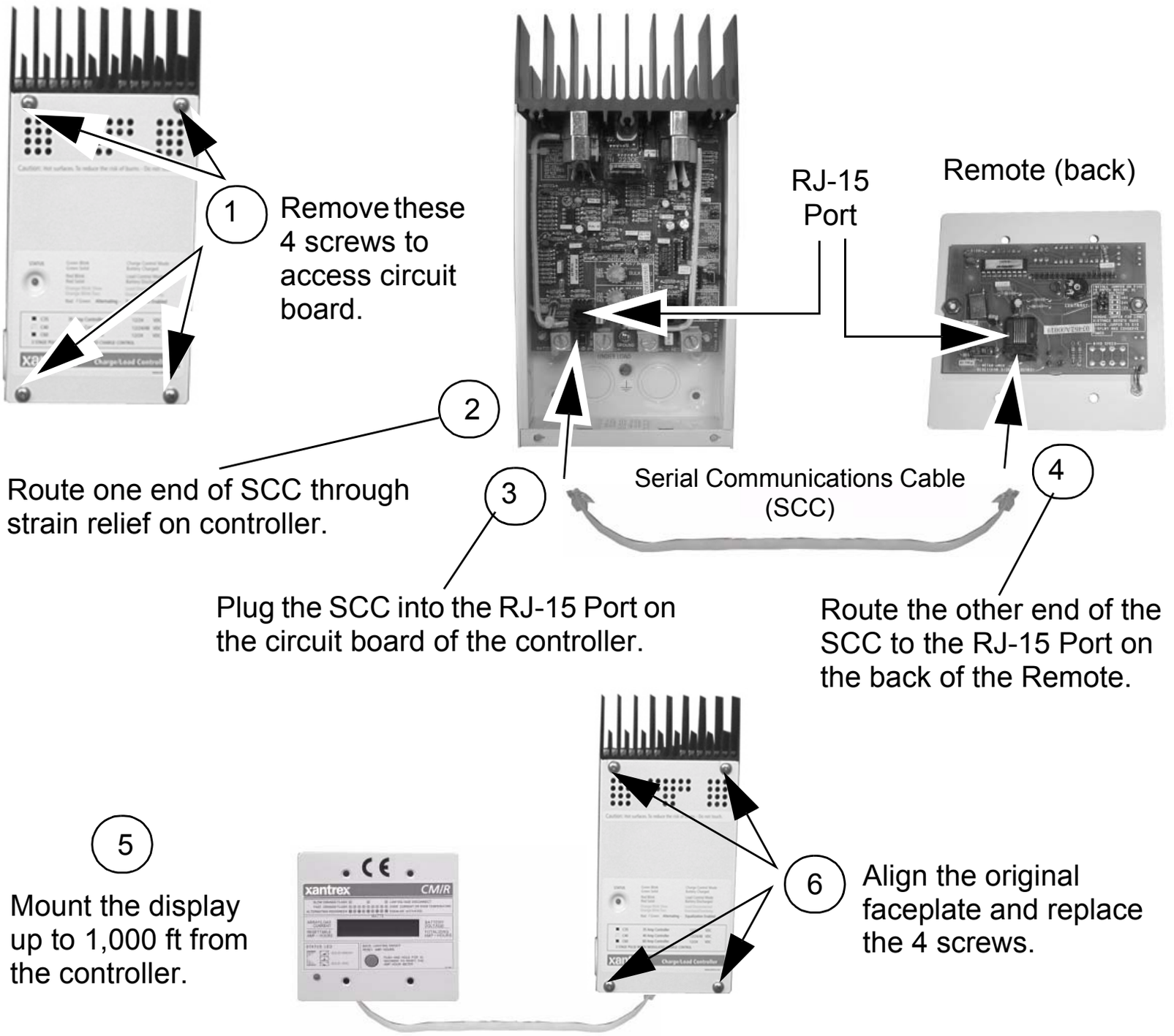


Figure 7 Connecting the Remote

Mounting the Remote (Step 3)

The remote can be permanently installed in a wall or cabinet.

The unit can also be flush-mounted into a rectangular opening in a wall or surface-mounted using a double-gang, non-metallic outlet box.

To flush mount the remote, an opening must be cut in the backing material to allow room for the circuit board, wires, and connectors. Allow at least 1 ½ inch minimum clearance behind the circuit board for the connectors and wires.

Important: Use great care when cutting out the area for the circuit board from the backing material (i.e., wallboard). Ensure there is enough area left to securely hold the screws.

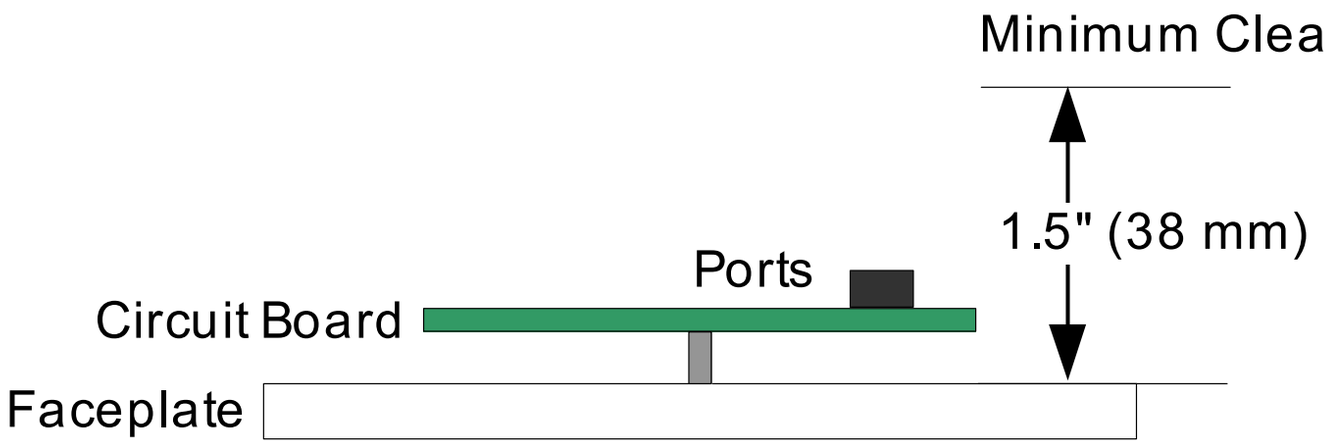


Figure 8 Minimum Clearance for the Remote

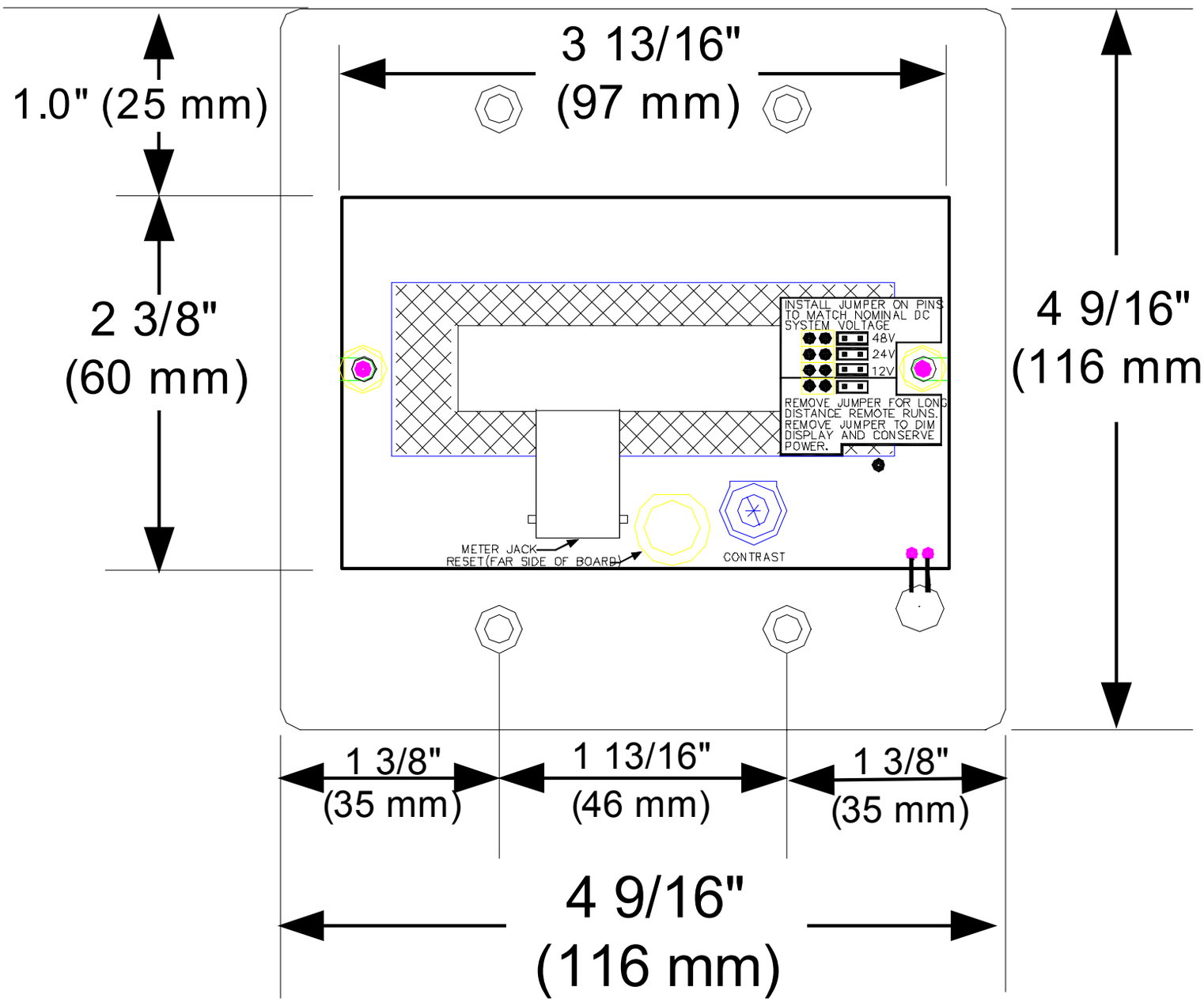


Figure 9 Remote Dimensions (not to scale)

To Mount the Remote:

1. Use the remote as a template and mark the positions for the screw holes. Mark the open area to be cut out for the circuit board.
2. Drill out the four screw's holes and prepare wire access opening/clearance. If using a double-gang, non-metallic, outlet box, install it according to the manufacturer's instructions.
3. Connect the communications cable (from the C-Series controller).
4. Secure the faceplate using screws (and anchors if necessary).

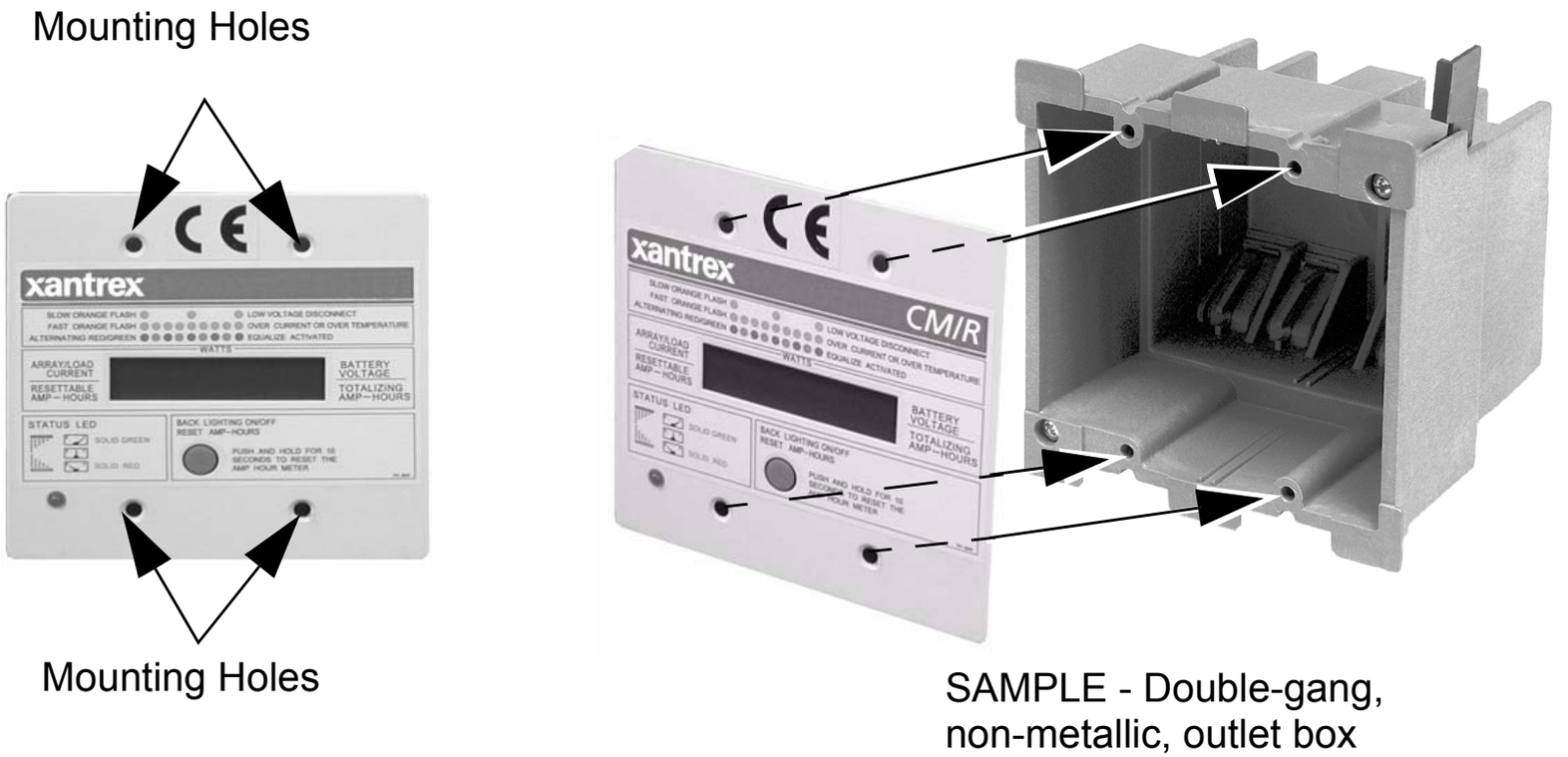


Figure 10 Mounting the Remote

5 Operation

Status Indicator

The multicolor LED indicates the operating status of the controller. A color-coded label is included on the cover of the controller explaining the status LED's indications.

- When in Charge Control mode, the LED will be green.
- When in Load Control mode, the LED will be red.
- When an Error Condition exists or the load has been disconnected, the LED will be orange.
- When battery equalization is in process, the LED alternates between red and green.

Important: The green and red LEDs only indicates the particular operating mode and the battery voltage level. It does not indicate whether the charging source is functioning properly.

See the Owner's Manual for the C-Series Multifunction DC Controller for additional information about the LED Status Indicator.

Resetting the Amp-Hour Meter

To manually reset the amp-hour meter, press and hold the push-button on the front of the meter until the display resets.

The meter automatically resets if power is disrupted (for example, DC cable is removed and replaced).

Turning the Display Backlight On or Off

Press and release the Amp-hour Reset button to turn the backlight on or off.

6 Troubleshooting

If using long cable runs on the remote (greater than 100 feet) or if the meter seems inaccurate, remove the jumper located below the voltage configuration pins on the circuit board on the back of the unit. This dims the LCD backlight, reduces power consumption, and improves meter accuracy.

See the Owner's Manual for the C-Series Multifunction DC Controller for additional information about Troubleshooting.

7 Warranty and Return

Warranty

What does this warranty cover? This Limited Warranty is provided by Xantrex Technology, Inc. ("Xantrex") and covers defects in workmanship and materials in your C-Series Meter Display. This warranty period lasts for two years from the date of purchase at the point of sale to you, the original end user customer. Proof of purchase is required to make warranty claims.

This Limited Warranty is transferable to subsequent owners but only for the unexpired portion of the Warranty Period. Subsequent owners also require proof of purchase to validate this warranty.

What will Xantrex do? Xantrex will, at its option, repair or replace the defective product free of charge, provided that you notify Xantrex of the product defect within the Warranty Period, and provided that Xantrex through inspection establishes the existence of such a defect and that it is covered by this Limited Warranty.

Xantrex will, at its option, use new and/or reconditioned parts in performing warranty repair and building replacement products. Xantrex reserves the right to use parts or products of original or improved design in the repair or replacement. If Xantrex repairs or replaces a product, its warranty continues for the remaining portion of the original Warranty Period or 90 days from the date of the return shipment to the customer, whichever is greater. All replaced products and all parts removed from repaired products become the property of Xantrex.

Xantrex covers both parts and labor necessary to repair the product, and return shipment to the customer via a Xantrex-selected non-expedited surface freight within the contiguous United States and Canada. Alaska and Hawaii are excluded. Contact Xantrex Customer Service for details on freight policy for return shipments outside of the contiguous United States and Canada.

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:

Telephone:	**1 800 670 0707 (toll free North America)** **1 360 925 5097 (direct)**
Fax:	**1 800 994 7828 (toll free North America)** **1 360 925 5143 (direct)**
Email:	**customerservice@xantrex.com**

Direct returns may be performed according to the Xantrex Return Material Authorization Policy described in your product manual. For some products, Xantrex maintains a network of regional Authorized Service Centers. Call Xantrex or check our website to see if your product can be repaired at one of these facilities.

What proof of purchase is required? In any warranty claim, dated proof of purchase must accompany the product and the product must not have been disassembled or modified without prior written authorization by Xantrex.

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 dealer invoice or purchase receipt showing original equipment manufacturer (OEM) status, or
- The dated invoice or purchase receipt showing the product exchanged under warranty

What does this warranty not cover? This Limited Warranty does not cover normal wear and tear of the product or costs related to the removal, installation, or troubleshooting of the customer's electrical systems. This warranty does not apply to and Xantrex will not be responsible for any defect in or damage to:

a) the product if it has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment;

b) the product if it has been subjected to fire, water, generalized corrosion, biological infestations, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the Xantrex product specifications including high input voltage from generators and lightning strikes;

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 it is used as a component part of a product expressly warranted by another manufacturer;

e) the product if its original identification (trade-mark, serial number) markings have been defaced, altered, or removed.

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Exclusions

If this product is a consumer product, federal law does not allow an exclusion of implied warranties. To the extent you are entitled to implied warranties under federal law, to the extent permitted by applicable law they are limited to the duration of this Limited Warranty. Some states and provinces do not allow limitations or exclusions on implied warranties or on the duration of an implied warranty or on the limitation or exclusion of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to you. This Limited Warranty gives you specific legal rights. You may have other rights which may vary from state to state or province to province.

Warning: Limitations On Use

Please refer to your product manual for limitations on uses of the product.

SPECIFICALLY, PLEASE NOTE THAT THE C-SERIES METER DISPLAY SHOULD NOT BE USED IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR OTHER MEDICAL EQUIPMENT OR DEVICES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, XANTREX MAKES NO REPRESENTATIONS OR WARRANTIES REGARDING THE USE OF THE XANTREX C-SERIES METER DISPLAY IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR OTHER MEDICAL EQUIPMENT OR DEVICES.

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, if they are shipped collect, or if they are 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.

Out of Warranty Service

If the warranty period for your C-Series Meter Display has expired, if the unit was damaged by misuse or incorrect installation, if other conditions of the warranty have not been met, or if no dated proof of purchase is available, your C-Series Meter Display may be serviced or replaced for a flat fee.

To return your C-Series Meter Display for out of warranty service, contact Xantrex Customer Service for a Return Material Authorization (RMA) number and follow the other steps outlined in “Return Procedure” on page 25.

Payment options such as credit card or money order will be explained by the Customer Service Representative. In cases where the minimum flat fee does not apply, as with incomplete units or units with excessive damage, an additional fee will be charged. If applicable, you will be contacted by Customer Service once your unit has been received.

8 Other Xantrex Products

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