

# INSTRUCTION MANUAL



## CD100 Mountable Display with Keypad

Revision: 1/17



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# **Limited Warranty**

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“Products manufactured by CSI are warranted by CSI to be free from defects in materials and workmanship under normal use and service for twelve months from the date of shipment unless otherwise specified in the corresponding product manual. (Product manuals are available for review online at [www.campbellsci.com](http://www.campbellsci.com).) Products not manufactured by CSI, but that are resold by CSI, are warranted only to the limits extended by the original manufacturer. Batteries, fine-wire thermocouples, desiccant, and other consumables have no warranty. CSI’s obligation under this warranty is limited to repairing or replacing (at CSI’s option) defective Products, which shall be the sole and exclusive remedy under this warranty. The Customer assumes all costs of removing, reinstalling, and shipping defective Products to CSI. CSI will return such Products by surface carrier prepaid within the continental United States of America. To all other locations, CSI will return such Products best way CIP (port of entry) per Incoterms ® 2010. This warranty shall not apply to any Products which have been subjected to modification, misuse, neglect, improper service, accidents of nature, or shipping damage. This warranty is in lieu of all other warranties, expressed or implied. The warranty for installation services performed by CSI such as programming to customer specifications, electrical connections to Products manufactured by CSI, and Product specific training, is part of CSI’s product warranty. **CSI EXPRESSLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CSI hereby disclaims, to the fullest extent allowed by applicable law, any and all warranties and conditions with respect to the Products, whether express, implied or statutory, other than those expressly provided herein.”**

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Products may not be returned without prior authorization. The following contact information is for US and international customers residing in countries served by Campbell Scientific, Inc. directly. Affiliate companies handle repairs for customers within their territories. Please visit [www.campbellsci.com](http://www.campbellsci.com) to determine which Campbell Scientific company serves your country.

To obtain a Returned Materials Authorization (RMA), contact CAMPBELL SCIENTIFIC, INC., phone (435) 227-9000. Please write the issued RMA number clearly on the outside of the shipping container. Campbell Scientific's shipping address is:

**CAMPBELL SCIENTIFIC, INC.**

RMA# \_\_\_\_\_  
815 West 1800 North  
Logan, Utah 84321-1784

For all returns, the customer must fill out a "Statement of Product Cleanliness and Decontamination" form and comply with the requirements specified in it. The form is available from our website at [www.campbellsci.com/repair](http://www.campbellsci.com/repair). A completed form must be either emailed to [repair@campbellsci.com](mailto:repair@campbellsci.com) or faxed to (435) 227-9106. Campbell Scientific is unable to process any returns until we receive this form. If the form is not received within three days of product receipt or is incomplete, the product will be returned to the customer at the customer's expense. Campbell Scientific reserves the right to refuse service on products that were exposed to contaminants that may cause health or safety concerns for our employees.

# Safety

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**DANGER — MANY HAZARDS ARE ASSOCIATED WITH INSTALLING, USING, MAINTAINING, AND WORKING ON OR AROUND TRIPODS, TOWERS, AND ANY ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC. FAILURE TO PROPERLY AND COMPLETELY ASSEMBLE, INSTALL, OPERATE, USE, AND MAINTAIN TRIPODS, TOWERS, AND ATTACHMENTS, AND FAILURE TO HEED WARNINGS, INCREASES THE RISK OF DEATH, ACCIDENT, SERIOUS INJURY, PROPERTY DAMAGE, AND PRODUCT FAILURE. TAKE ALL REASONABLE PRECAUTIONS TO AVOID THESE HAZARDS. CHECK WITH YOUR ORGANIZATION'S SAFETY COORDINATOR (OR POLICY) FOR PROCEDURES AND REQUIRED PROTECTIVE EQUIPMENT PRIOR TO PERFORMING ANY WORK.**

Use tripods, towers, and attachments to tripods and towers only for purposes for which they are designed. Do not exceed design limits. Be familiar and comply with all instructions provided in product manuals. Manuals are available at [www.campbellsci.com](http://www.campbellsci.com) or by telephoning (435) 227-9000 (USA). You are responsible for conformance with governing codes and regulations, including safety regulations, and the integrity and location of structures or land to which towers, tripods, and any attachments are attached. Installation sites should be evaluated and approved by a qualified engineer. If questions or concerns arise regarding installation, use, or maintenance of tripods, towers, attachments, or electrical connections, consult with a licensed and qualified engineer or electrician.

## General

- Prior to performing site or installation work, obtain required approvals and permits. Comply with all governing structure-height regulations, such as those of the FAA in the USA.
- Use only qualified personnel for installation, use, and maintenance of tripods and towers, and any attachments to tripods and towers. The use of licensed and qualified contractors is highly recommended.
- Read all applicable instructions carefully and understand procedures thoroughly before beginning work.
- Wear a **hardhat** and **eye protection**, and take **other appropriate safety precautions** while working on or around tripods and towers.
- **Do not climb** tripods or towers at any time, and prohibit climbing by other persons. Take reasonable precautions to secure tripod and tower sites from trespassers.
- Use only manufacturer recommended parts, materials, and tools.

## Utility and Electrical

- **You can be killed** or sustain serious bodily injury if the tripod, tower, or attachments you are installing, constructing, using, or maintaining, or a tool, stake, or anchor, come in **contact with overhead or underground utility lines**.
- Maintain a distance of at least one-and-one-half times structure height, 20 feet, or the distance required by applicable law, **whichever is greater**, between overhead utility lines and the structure (tripod, tower, attachments, or tools).
- Prior to performing site or installation work, inform all utility companies and have all underground utilities marked.
- Comply with all electrical codes. Electrical equipment and related grounding devices should be installed by a licensed and qualified electrician.

## Elevated Work and Weather

- Exercise extreme caution when performing elevated work.
- Use appropriate equipment and safety practices.
- During installation and maintenance, keep tower and tripod sites clear of un-trained or non-essential personnel. Take precautions to prevent elevated tools and objects from dropping.
- Do not perform any work in inclement weather, including wind, rain, snow, lightning, etc.

## Maintenance

- Periodically (at least yearly) check for wear and damage, including corrosion, stress cracks, frayed cables, loose cable clamps, cable tightness, etc. and take necessary corrective actions.
- Periodically (at least yearly) check electrical ground connections.

WHILE EVERY ATTEMPT IS MADE TO EMBODY THE HIGHEST DEGREE OF SAFETY IN ALL CAMPBELL SCIENTIFIC PRODUCTS, THE CUSTOMER ASSUMES ALL RISK FROM ANY INJURY RESULTING FROM IMPROPER INSTALLATION, USE, OR MAINTENANCE OF TRIPODS, TOWERS, OR ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC.



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# ***CD100 Mountable Display with Keypad***

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## **1. Introduction**

The CD100 is an easy-to-read panel-mountable datalogger data display. It includes a large-format keypad for input. The CD100 is compatible with several Campbell Scientific dataloggers. Refer to Section 5, *Specifications (p. 3)*, for a complete list. When properly installed, the CD100 is weather and dust resistant. As a purchased service, Campbell Scientific offers the option of installing the CD100 into an enclosure.

## **2. Cautionary Statements**

- The CD100 is not compatible with the CR850 datalogger, nor should it be used in tandem with the CR1000KD keyboard and display on any datalogger.
- Weather resistance of the CD100 is dependent on proper installation into the bulkhead of a weather tight enclosure. See Section 6, *Installation (p. 3)*, for details of proper installation.
- The CD100 is easily damaged if disassembled. If disassembly is required, refer to Section 8, *Maintenance (p. 8)*.

### 3. Quickstart

1. If the CD100 is to be mounted into an enclosure bulkhead, refer to Section 6, *Installation* (p. 3), for instructions.
2. Using an SC12 cable as shown in FIGURE 3-1, connect the 9-pin CS I/O port of a CR1000 or other compatible datalogger to the 9-pin CS I/O port on the back of the CD100.



FIGURE 3-1. Connecting the CD100 to the CR1000 datalogger

3. Power the datalogger; the display should power up and be ready for use. Keyboard commands are summarized in Section 7, *Operation* (p. 7), and in the datalogger manual.

### 4. Overview

The CD100 is a panel-mountable display with keypad. It facilitates user input and the display of data over a wide temperature range. The vacuum fluorescent element gives the CD100 high contrast, so it is easy to read in daylight conditions.

The CD100 is compatible with the dataloggers listed in Section 5, *Specifications* (p. 3). It will not operate properly with the CR850 datalogger or in tandem with the CR1000KD on any datalogger.

When properly installed, the polyvinyl face and rear gasket make the CD100 weather resistant and prevent ingress of water and dust. The back of the CD100 is not weather resistant. If used outdoors, or in a condensing environment, the CD100 should be bulkhead mounted as recommended in Section 6, *Installation* (p. 3).

## 5. Specifications

### Features:

- Operable with gloved hand
- 16 key alpha numeric keypad
- 8 line x 21 character display (64 x 128 pixel)

**Compatibility:** CR800 (not CR850)  
CR1000  
CR3000

**Interface:** CS I/O, SDC address 2

### Temperature

**Operating:** –45° to 85°C

**Storage:** –50° to 85°C

**Transit:** 1 hour at –60°C

### Power Requirement

**Source:** 12 Vdc from datalogger CS I/O port

### Current Draw

**Inactive:** 0.02 mA

**Active:** 140 mA

### Rating

#### Water and dust ingress

#### Installed as

**recommended:** IP66

**Uninstalled:** None (vulnerable to water and dust)

**Weight:** 0.36 kg (0.80 lb)

**Dimensions:** 17.5 x 13.7 x 3.6 cm (6.9 x 5.4 x 1.4 in)

**Compliance:** View the EU Declaration of Conformity at  
[www.campbellsci.com/cd100](http://www.campbellsci.com/cd100)

## 6. Installation

### NOTE

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As a purchased service, Campbell Scientific offers the option of installing the CD100 into an enclosure.

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Install only on a flat, non-porous surface. The supplied gasket must create a weather-tight seal when installed or permanent damage to the display and other enclosure contents may occur.

1. Use the template shipped with the CD100 or create a template using the measurements shown in FIGURE 6-1, *Template measurements for serial numbers less than 1311*.
2. Make the required cuts in the bulkhead.
3. Remove cutting debris from bulkhead.

4. Mount the CD100 as shown in FIGURE 6-3, *Profile of installed CD100*.
5. Before tightening screws, adjust the gasket to align it just inside the edges of the display. Uniformly tighten the screws, but do not over-tighten.

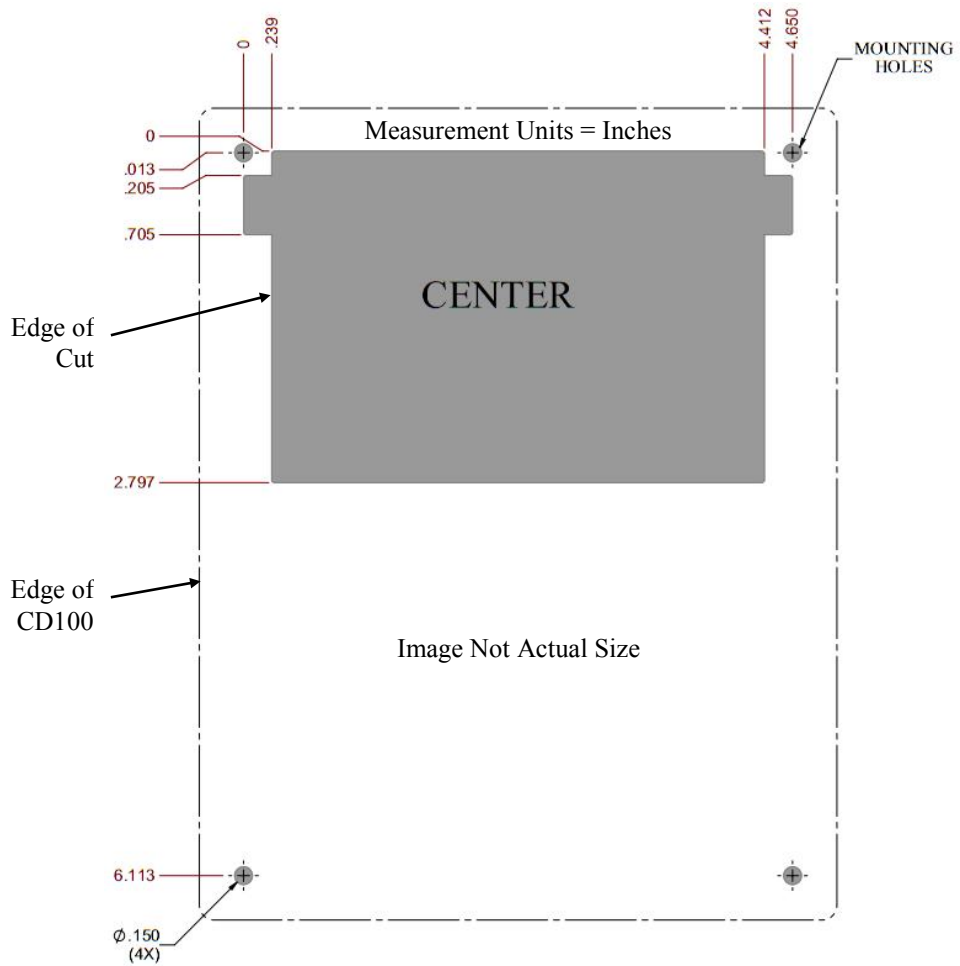


FIGURE 6-1. Template measurements for serial numbers less than 1311

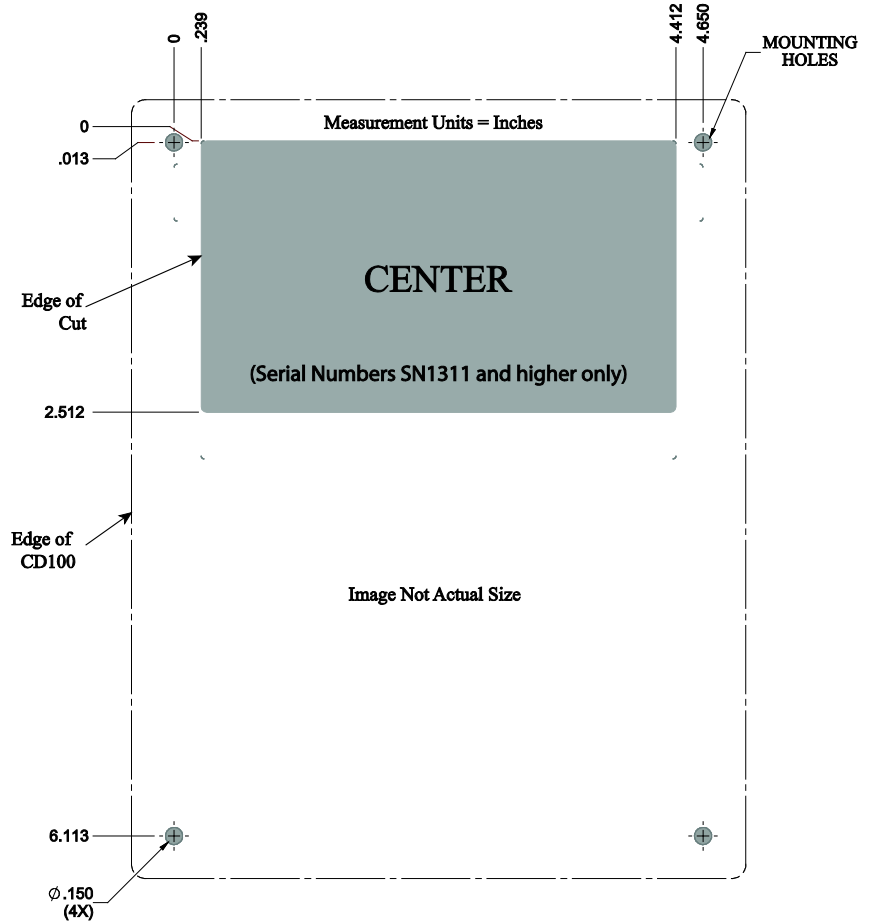


FIGURE 6-2. Template measurements for serial numbers 1311 and higher

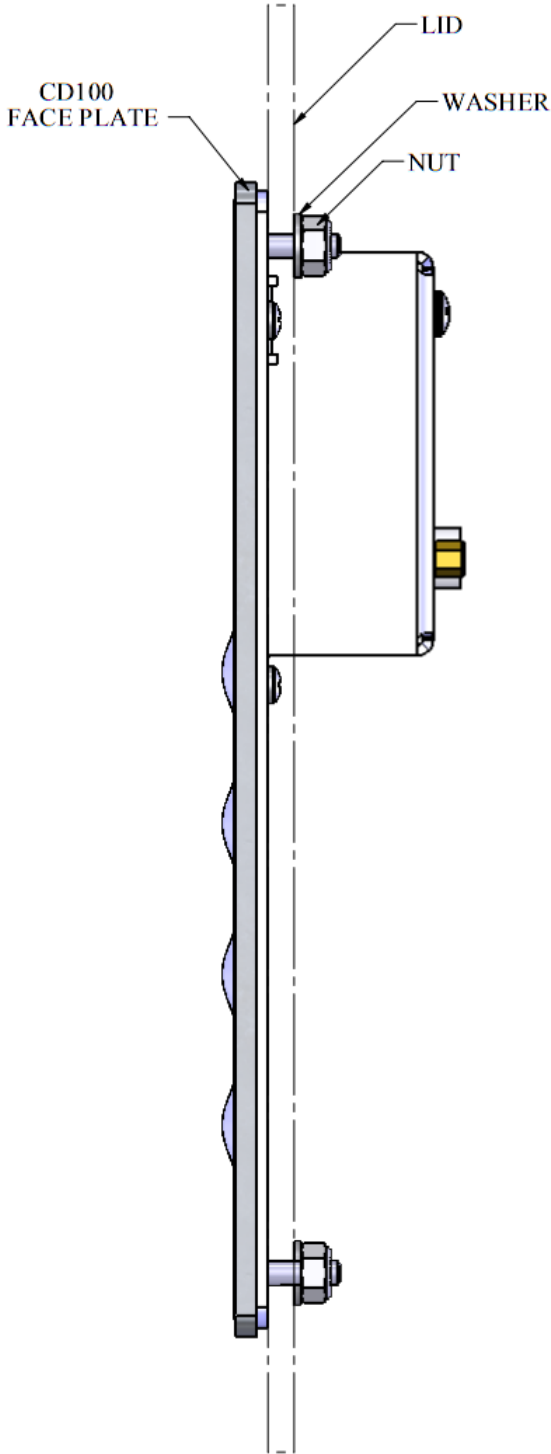


FIGURE 6-3. Profile of installed CD100

## 7. Operation

An overview of keyboard functions is presented in TABLE 7-1, *Keyboard Display Key Functions*, and FIGURE 7-1, *Display Menu Overview*. Detailed descriptions are available in the datalogger manual.

<b>TABLE 7-1. Keyboard Display Key Functions</b>	
<b>Key</b>	<b>Special Function</b>
[2] and [8]	To navigate up and down through the menu list one line at a time
[Enter]	Selects the line or toggles the option of the line the cursor is on
[Esc]	Back up one level in the menu
[Home]	Move cursor to top of the list
[End]	Move cursor to bottom of the list
[Pg Up]	Move cursor up one screen
[Pg Dn]	Move cursor down one screen
[BkSpc]	Delete character to the left
[Shift]	Change alpha character selected
[Num Lock]	Change to numeric entry
[Del]	Delete
[Ins]	Insert/change graph setup
[Graph]	Graph

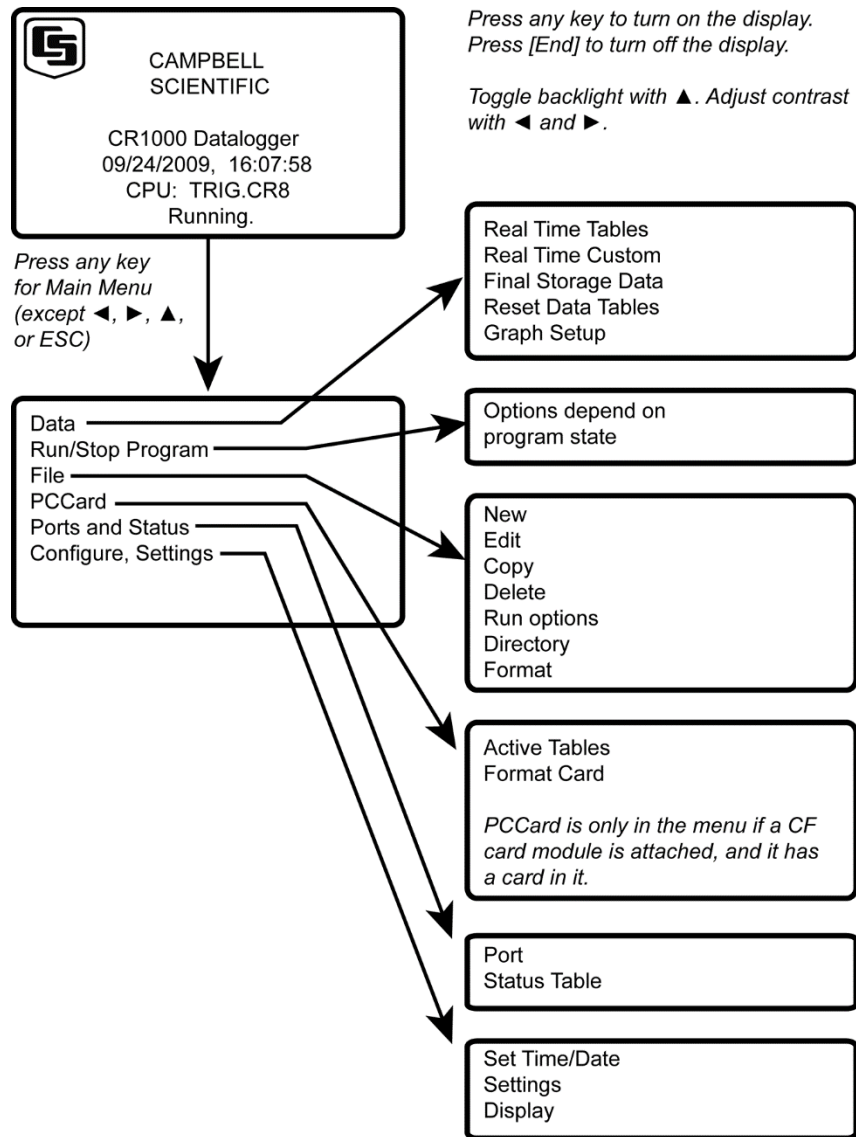


FIGURE 7-1. Display menu overview

## 8. Maintenance

Active desiccant must be maintained in the datalogger enclosure to avoid water damage to the display electronics, the datalogger, and other contents. No other maintenance is required.

Depending on the environment and weather tightness of the installation, dust may accumulate between the surface window and the underlying display elements. If this occurs, return the display to Campbell Scientific for cleaning.

Do not disassemble the CD100. The printed circuit ribbon connecting the keypad to the display can be easily torn when not removed properly. If the display must be disassembled, take care to grasp the header and not the printed circuit itself. Sheer or torsional stresses must not be put on the printed circuit. The warranty does not cover damages caused by disassembly.





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