

APPLICATION NOTE

CR10 PROM Replacement Procedure



CAMPBELL SCIENTIFIC, INC.

815 W. 1800 N. • Logan, Utah 84321-1784 • (435) 753-2342 • FAX (435) 750-9540 • www.campbellsci.com

CR10 PROM Replacement Procedure

This document will walk you through the procedure for replacing the firmware (PROM) in a Campbell Scientific CR10 Measurement and Control System. If you prefer to have Campbell Scientific install the PROMs (for a nominal fee), request a Returned Materials Authorization (RMA) from Campbell Scientific.



CAUTION

This procedure erases data and programs stored in the CR10. Before you begin, transfer all data and programs you wish to save to a computer or storage module. For information about transferring data and programs between the CR10 and a computer, see the CR10 Operator's Manual.

To prevent components from being damaged by the discharge of static electricity, the PROMs should be replaced at a grounded work station by a person wearing a grounding strap.

Tools Required

- Phillips screwdriver #1

- PROM puller
or
Flat-blade screwdriver (shipped with CR10)

- New PROM

Procedure

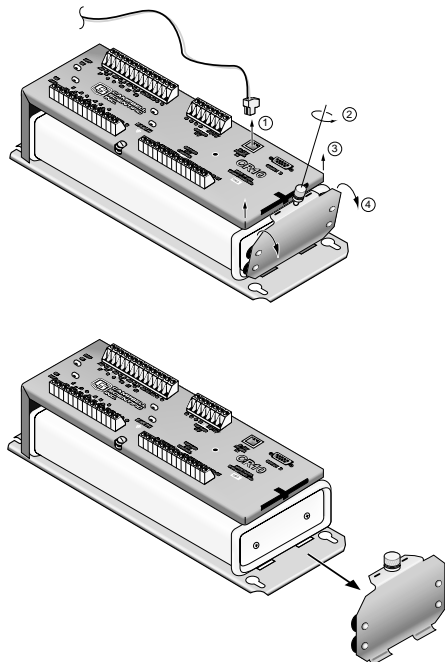


FIGURE 1. Removing Wiring Panel End Bracket

1. Confirm that all necessary data and programs stored in the CR10 have been saved to a computer or storage module.
2. Disconnect the power supply from the CR10 (① on Figure 1).
3. With fingers, remove thumbscrew from the end bracket (② on Figure 1).
4. Separate the end bracket by removing the flanges from the slots on the baseplate (③ and ④ on Figure 1).

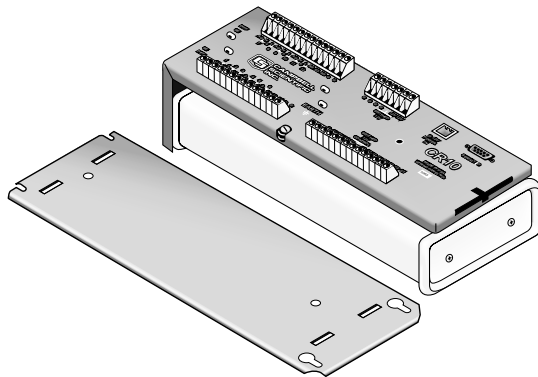


FIGURE 2. Removing Baseplate

5. Separate the baseplate from the wiring panel (Figure 2).

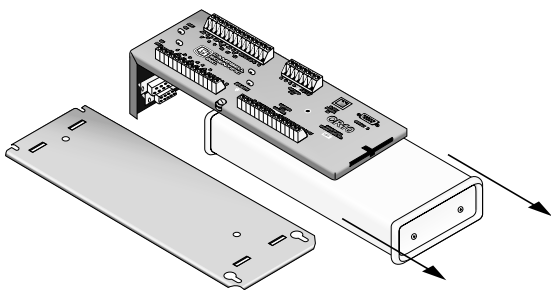


FIGURE 3. Separating the Wiring Panel from the Control Module

6. Pull the control module forward to separate it from the wiring panel (Figure 3).

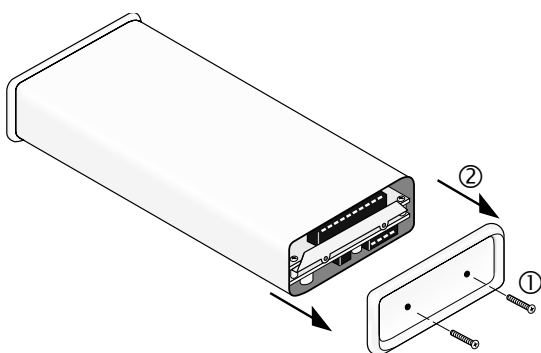


FIGURE 4. Removing the End Cap to Expose RF Shield

7. With a Phillips screwdriver, remove from the control module the two screws on the side opposite the connectors (① on Figure 4).
8. Pull the end cap away from the control module and expose the RF shield (② on Figure 4).

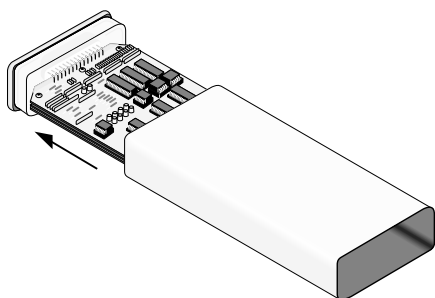


FIGURE 5. Removing the Circuit Card from the Can

9. Lay the control module on a flat surface (e.g., table) and push the RF shield with your thumb while grasping the can to remove the circuit card from the can (Figure 5).

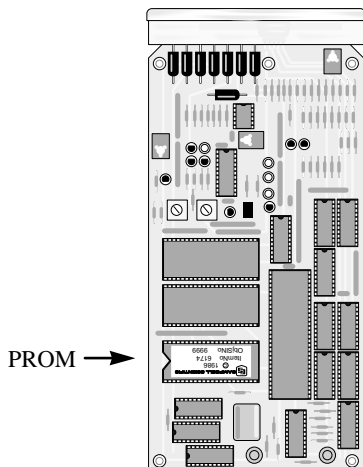


FIGURE 6. CR10 CPU Board Oriented so that the Connectors are on the Top of the Drawing

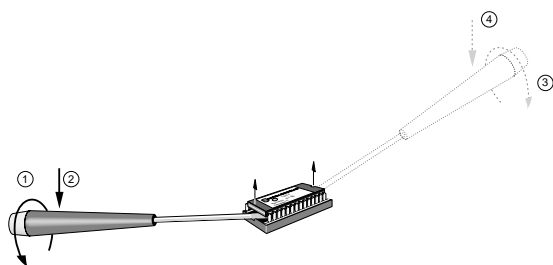


FIGURE 7. Removing the PROM with a Screwdriver



FIGURE 8. Inserting the New PROM

10. See Figure 6 to locate the PROM on the CR10 CPU board. The installed PROM has a notch on the left side when the CPU board is oriented as in Figure 6. The replacement PROMs must also be installed with the notch on that side.
11. Use a PROM puller to remove the PROM. If you don't have a PROM puller, use the less elegant procedure described below:
 - a) Insert the end of a small flat-blade screwdriver underneath the PROM, then gently rotate the screwdriver to slightly lift the PROM from the PROM socket (① on Figure 7).
 - b) Gently pry up the end of the PROM to about 1/8" off the socket (② on Figure 7).
 - c) Move the screwdriver to the other end of the PROM and perform the same procedure (③ and ④ on Figure 7).
 - d) Alternate prying the PROM from either end. Lift the PROM approximately 1/8" with each pry until the pins clear the sockets and the PROM can be lifted out of the socket.
12. Hold the new PROM by either end as shown in Figure 8. Position the PROM over the sockets with the circular notch on the end of the PROM oriented the same direction as the surrounding PROMs.



CAUTION

The notch must be on the correct side. Inserting the PROM in the wrong direction can damage it.

Set the pins of the PROM on the sockets and press gently. Make sure individual pins are being inserted straight into the socket clips and are not bending. Gently push the PROM in until it seats fully in the socket.



NOTE

Inspect the PROM assuring that none of the pins have been bent or are not seated in their corresponding socket clips.

13. Repeat steps 9 through 1 (in reverse order) to reassemble the CR10.

