

## DR80 Display Upgrade Kit Instruction Sheet

### Caution

Do not disassemble the Meter beyond what is described in the *Instruction Sheet*. Doing so might cause the Meter to be out of calibration.

### Introduction

The Fluke Models 83, 85, 87, and 88 multimeters (hereafter "the Meter") use elastomeric connectors to transfer electrical signals from the Meter's Circuit Board to the liquid crystal display (LCD). Over time, resistance in contact areas can cause some display segments to become dim or not light.

The DR80 Display Upgrade Kit allows you to fix this by cleaning the contacts and replacing the elastomeric strips. If you have a Fluke Model 87, 87 III, or 88, you can upgrade to a bright-white backlight at the same time.

### Contacting Fluke

To contact Fluke, call:

1-888-993-5853 in USA and Canada  
+31 402-678-200 in Europe  
+81-3-3434-0181 in Japan  
+65-276-6196 in Singapore  
+1-425-446-5500 anywhere in the world

Visit Fluke's web site at: [www.fluke.com](http://www.fluke.com).

### Kit Contents

Item	Fluke P/N
Elastomeric Connectors (2), LCD-to-Circuit Board	944483
Backlight, White	609922
Alkaline Battery, 9 V	614487
Gold Guard™ Wipe	1586679
Foam Swab	1591096
Instruction Sheet	1586693

### Upgrade Procedure

To upgrade the display on your Meter, refer to Figures 1 and 2 as necessary, and perform the following procedure.

The only tools required are a small phillips-head screwdriver, a small flathead screwdriver, and a set of tweezers:

#### ⚠ Warning

To avoid shock, remove the test leads and any input signals before opening the case or replacing the battery or fuses.

#### Caution

To avoid damage due to static discharge, follow standard practices for handling static-sensitive devices. The Meter contains parts that can be damaged by static discharge.

### Disassembly

- Turn the Meter OFF and remove it from its holster.  
The Case Top is secured to the Case Bottom by three Case Screws on the back of the Meter and two internal snaps at the display end of the Meter.
- Remove the three Case Screws from the back of the Case Bottom.
- Holding the Meter face up, lift the terminal end of the Case Top and then carefully disengage the Case Top at the display end. Remove the Pushbutton Switchpad and set it aside.
- Lift out the battery and disconnect it from the battery leads. Take care not to put too much tension on the battery leads.
- Holding the Circuit Board / LCD Assembly by its edges, carefully lift it out of the Case Bottom.

### Caution

To avoid damaging the Circuit Board / LCD Assembly or shorting out its connections, always place the uncovered Circuit Board / LCD Assembly on a protective surface. When the Circuit Board / LCD Assembly has been removed from the case, circuit components are exposed.

Do not touch the exposed electronic components. Only touch the edges when handling the Circuit / LCD Assembly!

- Hold the Circuit Board / LCD Assembly in your hand so that the display end faces you.
- Notice that the Liquid Crystal Display (LCD) is held in place by the LCD Mask which, in turn, is held in place by several detent clips.
- Using your fingernails or a small flathead screwdriver, unsnap the LCD Mask and remove it (Figure 2).
- Lift the LCD from the Circuit / LCD Assembly. The two Elastomeric Connectors are likely stuck to the LCD.
- Remove the Elastomeric Connectors from the LCD and set the LCD aside. Remember its top to bottom orientation.
- Using your fingers or a small flathead screwdriver, gently lift the Backlight and unplug it from its socket (Figure 2).

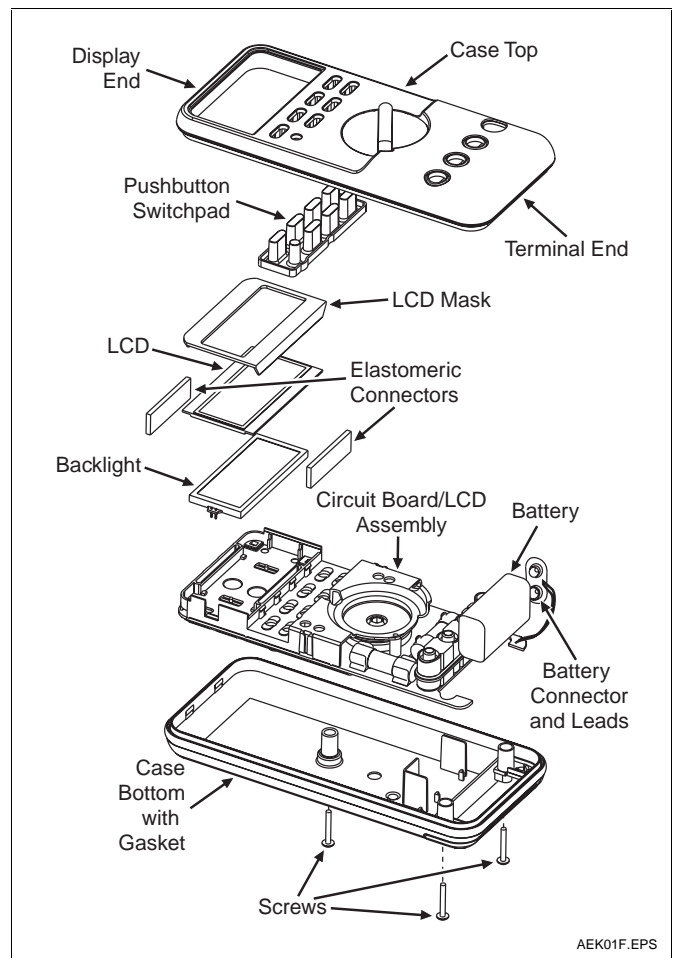


Figure 1. Parts

**Replacing the Elastomeric Connectors and Backlight and Reassembling the Meter**

The Circuit Board contacts of older Meters require cleaning; the contacts on newer Meters do not.

If your Meter has a serial number higher than those listed below, skip step 12 and replace the Elastomeric Connectors as described in steps 13-14. Cleaning the contacts on newer meters could damage the Meter.

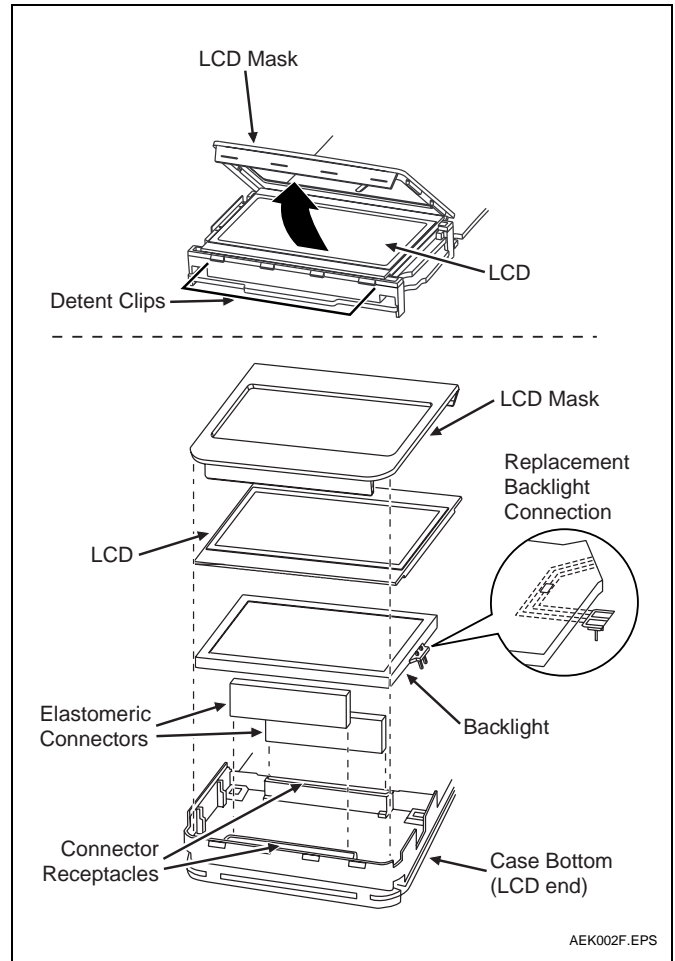
Model	Serial Number
88	59970000
83,85,87	59170000

12. Clean the contacts of the LCD with the Gold Guard wipe.
13. For each Elastomeric Connector Receptacle:  
 Insert a folded Gold Guard wipe into the receptacle and wipe back and forth across the Circuit Board. Remove the wipe and wet the foam swab with it.  
 Rub the damp swab across the connectors on the Circuit Board. Insert the folded Gold Guard wipe into the receptacle and wipe the connectors once.

**Caution**

**To avoid contaminating the contacts of an Elastomeric Connector:**

- Do not handle the Elastomeric Connectors with your fingers.
  - Do not touch the conductive edges of the Elastomeric Connector with your fingers.
  - Use tweezers to remove or reinsert the Elastomeric Connectors.
14. Using tweezers, insert the replacement Elastomeric Connectors into the Connector Receptacles (Figure 2).
  15. Plug the Backlight into its socket. (87, 87 III, 88 Only: Plug the replacement Backlight included in your kit into its socket.)
  16. Place the LCD on top of the Backlight, making sure that the top of the LCD is oriented to the top of the Meter.  
 To orient the LCD properly, hold it face up in such a way that the LCD segments can be faintly seen. Orient the LCD so that the bar graph is at the bottom of the display. If the LCD is improperly oriented, when you turn the Meter on, the LCD will be upside down and will not function correctly.
  17. Place the LCD Mask over the LCD and, pressing gently, snap the LCD Mask in place. Do not exert too much pressure; you might damage the LCD.
  18. Place the Circuit Board / LCD Assembly back in the Case Bottom.
  19. Put the Pushbutton Switchpad back in place.
  20. Connect the battery to the battery leads, and place the battery in the battery receptacle.
  21. Verify that the rotary switch and the Circuit Board / LCD Assembly switch are in the OFF position and that the Gasket remains secure to the Case Bottom.
  22. Place the Case Top on the Case Bottom. Ensure that the gasket is properly sealed and that the battery leads are not caught between the Case Top and Case Bottom.
  23. Snap the Case Top and Case Bottom together above the LCD end of the Meter.
  24. Make sure that you have performed this procedure properly by holding down any pushbutton while you turn the Meter on. All LCD segments should light. Press the backlight button to make sure the backlight turns on. Turn the Meter OFF.
  25. Secure the Case Top to the Case Bottom by reinstalling the three Case Screws.



**Figure 2. LCD Assembly**

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Fluke Corporation  
 P.O. Box 9090  
 Everett, WA 98206-9090  
 U.S.A.

Fluke Europe B.V.  
 P.O. Box 1186  
 5602 BD Eindhoven  
 The Netherlands