

hp Model 4800A Vector Impedance Meter  
serials prefixed 805 and below

Thermistor A17R14 Replacement  
hp Modification Kit 04800-61043

Modification Kit 04800-61043 is a replacement kit for thermistor 0837-0045 in the hp Model 4800A Vector Impedance Meter, serials prefixed 805 and below. Later instruments do not use the thermistor.

Parts Furnished in Modification Kit 04800-61043

| Quantity | Description                                  | hp Stock No. |
|----------|--|--------------|
| 1        | Photocell-lamp module                        | 1990-0079    |
| 1        | R: fxd, met flm, 6.19 K $\Omega$ , 1%, 1/8 w | 0757-0290    |
| 1        | R: fxd, met flm, 348 $\Omega$ , 1%, 1/2 w    | 0698-3403    |
| 1        | Transistor: NPN, Si, 2N3053                  | 1854-0039    |
| 1        | Heat dissipator                              | 1205-0033    |
| 2        | Feedthru, teflon insulated                   | 0340-0105    |
| 1        | R: fxd, met flm, 6.81 K $\Omega$ , 1%, 1/8 w | 0757-0439    |
| 1        | C: fxd, ta, 10 $\mu$ F, 10%, 20 vdcw         | 0180-0374    |

Modification Procedure

1. Remove power from instrument.
2. Remove R1, 2.87 K resistor mounted on TEST-OPERATE Switch, S1. (located between XA14 and XA16).
3. Remove A17 (Stock No. 04800-61002) from the instrument. Remove thermistors R14 and R15 including shock absorber and strap.
4. Replace R13 with jumper.
5. Drill ( $7/32''$ ) (5.5 mm.) hole in location shown in Figure 1. **CAUTION:** Start with a small size drill and enlarge hole in steps to prevent drill from seizing.
6. Install press-fit feedthru.

7. Connect short wire from hole "A" (Figure 2) to feedthru on back side of board.

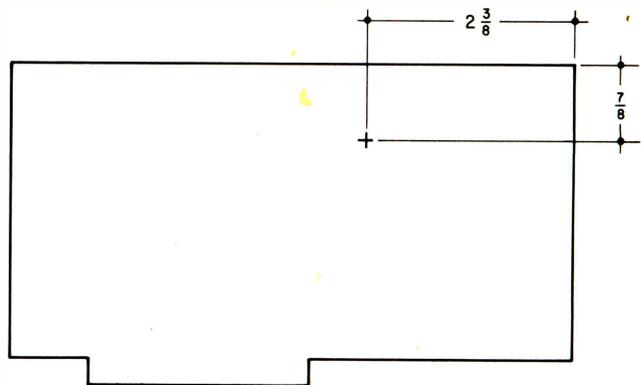


Figure 1. Feedthru Location - A17 Board



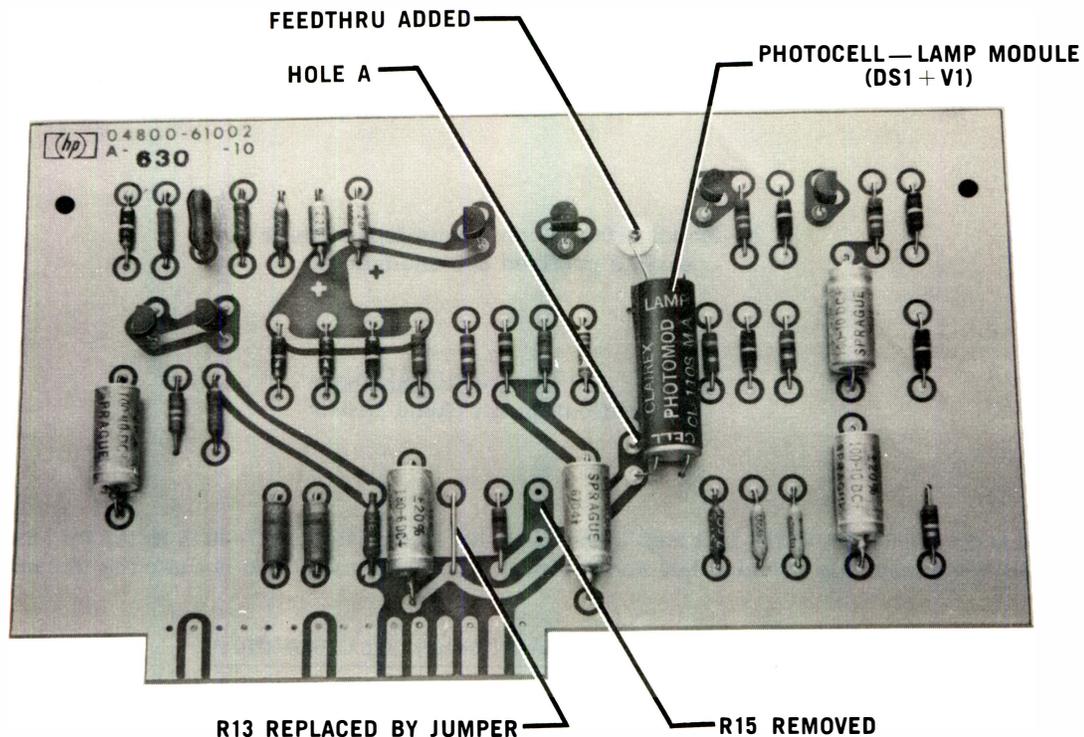


Figure 2. A17 After Modification

8. Install photocell-lamp module, DS1 + V1. Cell end of module is mounted closest to the plug-in connections.

## NOTE

Figure 2 shows A17 after modification.

9. Reinstall A17 and remove A14 (Stock No. 04800-61011).

10. Replace A14CR1-4 (four diodes) with jumpers.

11. Remove Q9.

12. Drill ( $7/32''$ ) (5.5 mm.) hole in location shown in Figure 3. As in step 4 above, enlarge hole in steps to final size.

13. Install feedthru; clip lead off back of board.

14. Replace R13 with 6.19 K $\Omega$ .

15. Replace R29 with 348  $\Omega$ .

16. Connect R31, 6.81 K $\Omega$  from feedthru to R30. Tack-solder to R30.

## NOTE

Figure 4 shows A14 after modification.

17. Connect C4, 10  $\mu$ F from standoff to R13. Note polarity: + lead to feedthru.

18. Place heat dissipator on new Q9; install on board with  $1/2''$  leads. Leads must be long enough to allow moving Q9 and heat dissipator away from chassis. Q9 case must not be grounded; it is electrically connected to the collector.

19. Reinstall A14. Check clearance of A14Q9 heat dissipator. This completes the modification.

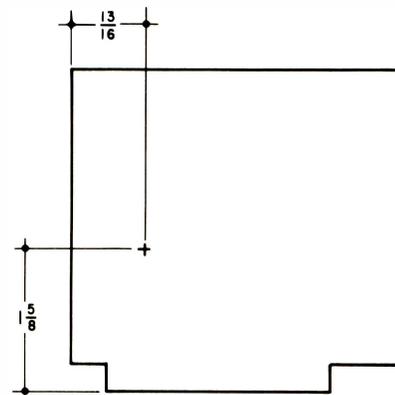


Figure 3. Feedthru Location - A14 Board

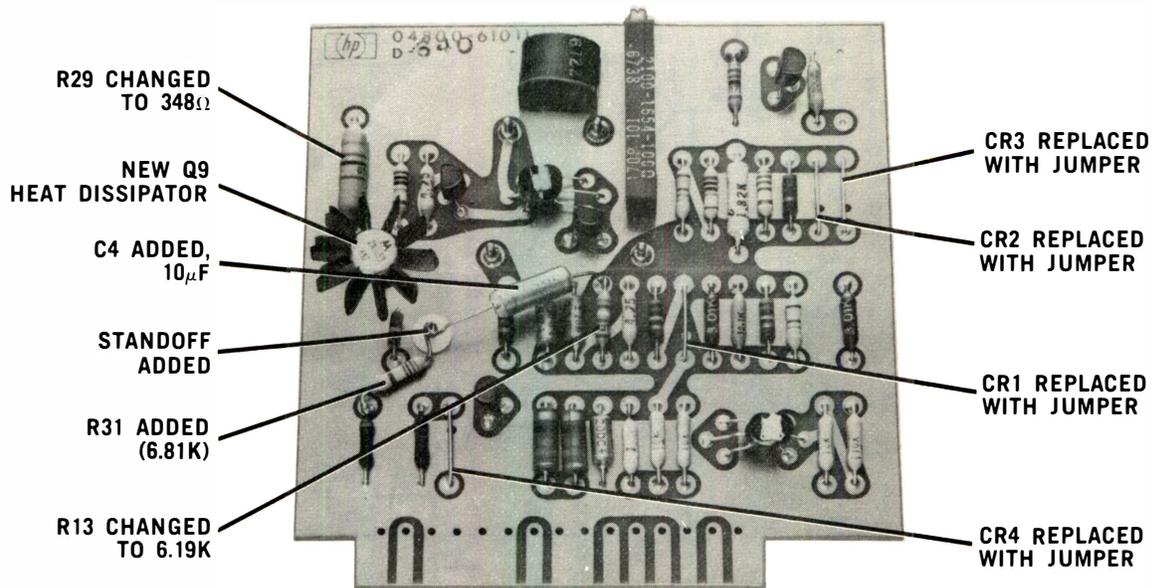


Figure 4. A14 After Modification

### Recalibration Procedure

1. Turn instrument on. Place Type 13525A calibration resistor (1 K $\Omega$ ) on test terminals.
2. Set 4800A controls as follows:
 

|                 |           |
|-----------------|-----------|
| Z RANGE         | X100      |
| FREQUENCY RANGE | X100      |
| FREQUENCY dial  | 1.59 (LC) |
3. Adjust A14R25 for full scale OHMS meter reading.
4. Switch Z RANGE to X1K. Meter reading should still be full scale. If not, readjust CHANNEL GAIN EQUALIZATION control, R2, so meter reads the same on X100 and X1K ranges. (Readjust A14R25 for full scale if necessary.)

### NOTE

For further calibration, troubleshooting, and updating information refer to Service Note 4800A-1 available from your Hewlett-Packard Sales and Service Office.

### Troubleshooting Hint

R1, the 2.87 K resistor on S1, Test-Operate Switch, was removed during the modification. When the switch is placed in the test position, the leveling loop feedback is opened and A17 gain drops to one. The resulting A17 output is now more predictable, making troubleshooting of the 4800A simpler.

Revised A14 and A17 schematics are included in this Service Note which should be kept for future reference.

