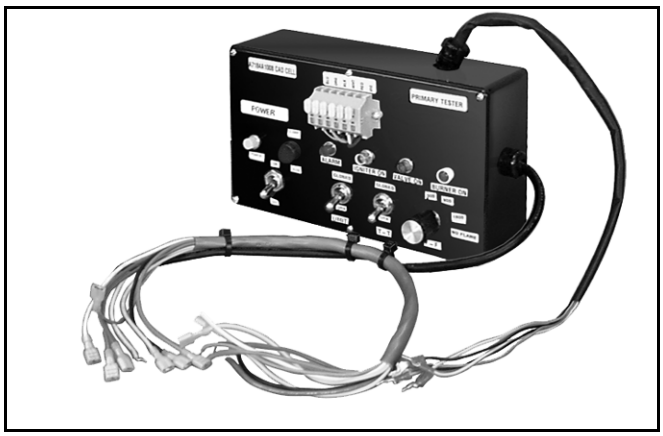
Honeywell

# A7184
# Cad Cell Primary Tester

**OPERATING INSTRUCTIONS**



## APPLICATION

The A7184 Cad Cell Primary Tester is a convenient on-the-job tester that can be used for all R8184 and R7184 Cad Cell Primaries. It lets the service technician check out the primary quickly and easily by simply connecting it to the tester and plugging the tester into a standard 120 or 240 volt ac electrical outlet.

This is an extremely rugged instrument with a minimum of electrical components and switches to use. It's an ideal carry-around that should be in every service person's tool kit.

See Fig. 1 for identification of cables and switches.

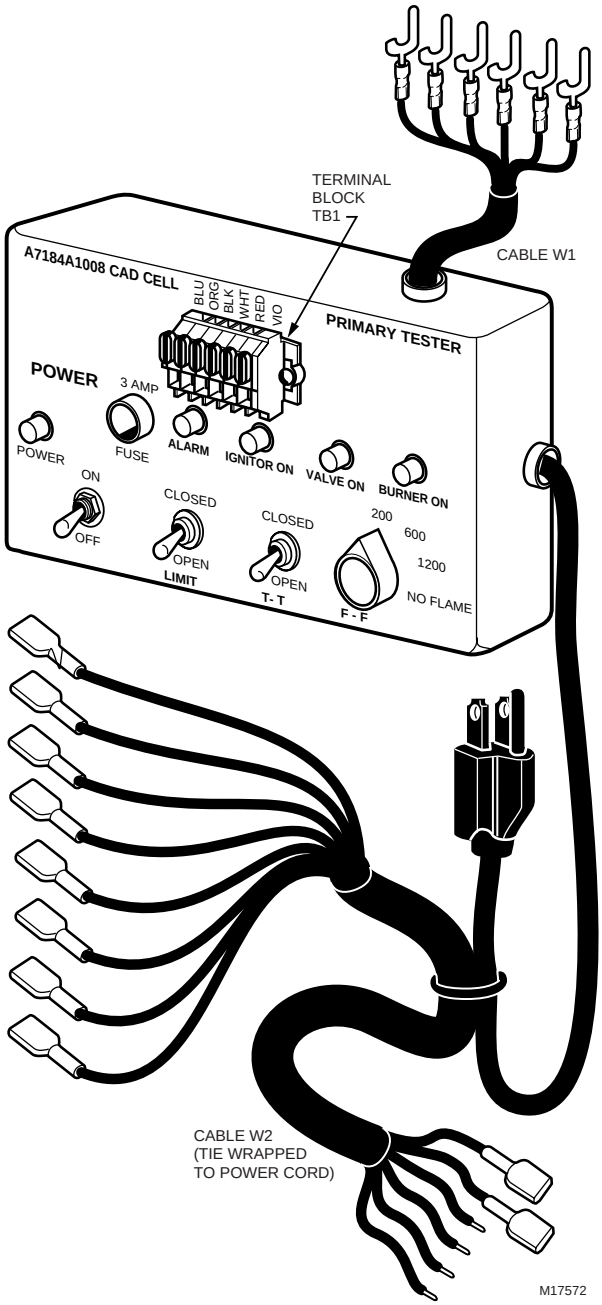



**Fig. 1. A7184 Cad Cell Primary Tester.**

# OPERATION

## Testing R7184A Series 2 Devices

## ⚠ WARNING

**Electrical Shock Hazard.**
**Can cause severe injury or death.**
Line voltage is present during testing. Observe all electrical safety rules during testing.

***IMPORTANT***

*Read the appropriate Installation Instructions packed with the R7184A before testing. R7184 devices may need to be reset from restricted lockout prior to testing and should be reset after testing. To reset, press and hold the Reset Button for 30 seconds. When the R7184 LED flashes twice, release the Reset Button (on earlier models, the LED will flash during the 30-second period and then turn off).*

1. With no power applied to the tester and the power cord unplugged, connect the black wires with altered spade lugs from cable W1 to the T-T screw terminals on the front of the R7184.
2. Connect the yellow wires from cable W1 to the yellow wires with insulated quick-connects on cable W2.
3. Connect the rest of the colored wires with insulated quick-connects on cable W2 to the connectors on the bottom of the R7184 (see Fig. 2) according to the following table:

**Table 1. Cable connections from A7184 to R7184A.**

| A7184 Wire Color | R7184 Wiring Connector |
|---|---|
| Blue | Ignitor—Interrupted |
| Orange | Burner Motor |
| Black | L1 |
| White | L2 |
| Yellow | Cad Cell |

4. Attach the colored wires with stripped leads from the other end of cable W2 to the matching color-coded connections on terminal block TB1 mounted on the top of the tester.
5. Make sure all connections and wires are separate and isolated from each other.
6. Make sure the A7184 switches are in the following positions:
   a. Power: OFF.
   b. Limit: OPEN.
   c. T-T (Thermostat): OPEN.
   d. Cad Cell F-F: 200.
7. Plug the tester into 120 Vac outlet.
8. Place the tester Power switch in the ON position. Power indicator light on the tester should light as should the LED on the R7184. (If the R7184 LED is flashing, follow the reset procedure in the *IMPORTANT* note above.
9. Place the T-T and Limit switches in the CLOSED position.
10. If neither of the lights (Burner or Ignitor) comes on, proceed to step 11. If either light comes on, the R7184 is defective and should be replaced.

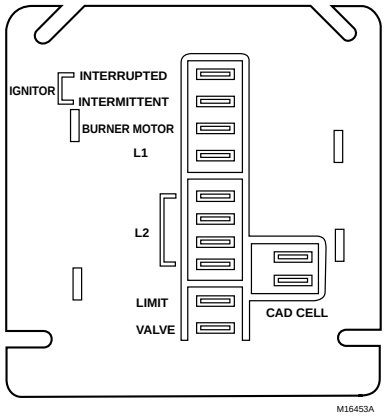



**Fig. 2. R7184 wiring connections.**

11. Place the F-F switch in the NO FLAME position. R7184 enters Safe Start Check . After five seconds, Burner and Ignitor lights should come on. If lights come on, wait 5 seconds and place F-F switch in the 200 position and proceed to step 12. If lights do not come on, R7184 is defective and should be replaced.
12. With the F-F switch in the 200 position, the Burner and Ignitor lights should remain On. After the appropriate ON delay time the Ignitor light should go OFF. Proceed to step 13. (If this sequence does not occur, the R7184 is defective and should be replaced.)
13. To test flame quality:
    a. With the F-F switch in the 200 position, press and release the Reset switch on the R7184. The LED should flash once, then return to constant On.
    b. Set the F-F switch to the 600 position, press and release the Reset switch on the R7184. The LED should flash twice, then return to constant On.
    c. Set the F-F switch to the 1200 position, press and release the Reset switch on the R7184. The LED should flash three times, then return to constant On.
    d. If these sequences do occur, proceed to step 13. If they do not occur, the R7184 is defective and should be replaced.
14. Return the F-F switch to the 200 position and set the T-T switch to the OPEN position. The Burner light should go off immediately. Proceed to step 15. If the Burner light stays on, the R7184 is defective and should be replaced.
15. Place the F-F switch in the NO FLAME position. The R7184 LED should go off. Wait approximately 15 seconds and proceed to step 16.
16. Place the T-T switch in the CLOSED position. Burner and Ignitor light should come on in approximately 5 seconds. Proceed to step 17.
17. With the F-F switch in the NO FLAME position, after the appropriate lockout time, the Burner and Ignitor lights should go off and the R7184 being tested should go into lockout (R7184 LED flashing on and off at 1/2-second intervals). If these events occur, the device tested is okay. Proceed to step 18. If the events do not occur, the R7184 is defective and should be replaced.
18. Set the F-F switch to the 200 position and push and release the R7184 Reset Button. The R7184 LED returns to constant On.
19. Turn the Power switch on the tester to OFF and disconnect all tester leads from the R7184.
20. Return the R7184 to service.

## Testing R7184B,P,U Series 2 Devices

**⚠ WARNING**

**Electrical Shock Hazard.**
**Can cause severe injury or death.**
Line voltage is present during testing. Observe all electrical safety rules during testing.

***IMPORTANT***

*Read the appropriate Installation Instructions packed with the R7184B,P or U before testing. R7184 devices may need to be reset from restricted lockout prior to testing and should be reset after testing. To reset, press and hold the Reset Button for 30 seconds. When the R7184 LED flashes twice, release the Reset Button (on earlier models, the LED will flash during the 30-second period and then turn off).*

1. With no power applied to the tester and the power cord unplugged, connect the black wires from cable W1 to the T-T screw terminals on the front of the R7184. (If the R7184 has the Alarm feature, attach the blue wires from this cable to the Alarm screw terminals on the front of the R7184.)
2. Connect the yellow wires from cable W1 to the yellow wires with insulated quick-connects on cable W2.
3. Connect the rest of the colored wires with insulated quick-connects on cable W2 to the connectors on the bottom of the R7184 (see Fig. 2) according to the following table:

**Table 2. Cable connections from A7184 to R7184B,P,U.**

| A7184 Wire Color | R7184B,P,U Wiring Connector |
|---|---|
| Blue | Ignitor—Interrupted |
| Orange | Burner Motor |
| Black | L1 |
| White | L2 |
| Red | Limit |
| Violet | Valve |
| Yellow | Cad Cell |

4. Attach the colored wires with stripped leads from the other end of cable W2 to the matching color-coded connections on terminal block TB1 mounted on the top of the tester.
5. Make sure all connections and wires are separate and isolated from each other.
6. Make sure the A7184 switches are in the following positions:
   a. Power: OFF.
   b. Limit: OPEN.
   c. T-T (Thermostat): OPEN.
   d. Cad Cell F-F: 200.
7. Plug the tester into 120 Vac outlet.
8. Place the tester Power switch in the ON position. Power indicator light on the tester should light as should the LED on the R7184. (If the R7184 LED is flashing, follow the reset procedure in the *IMPORTANT* note above.)
9. Place the T-T and Limit switches in the Closed position.
10. If none of the lights (Burner, Valve or Ignitor) comes On, proceed to step 11. Otherwise, the R7184 is defective and should be replaced.
11. Place the F-F switch in the NO FLAME position. After 5 seconds, Burner and Ignitor lights should come On. If lights come on, wait 5 seconds and place F-F switch in the 200 position and proceed to step 12. If lights do not come On, R7184 is defective and should be replaced.
12. With the F-F switch in the 200 position, the Burner and Ignitor lights should remain on. After appropriate On delay time, the Valve light should come On and the Ignitor light go Off. Proceed to step 13. (If this sequence does not occur, the R7184 is defective and should be replaced.)
13. To test flame quality:
    a. With the F-F switch in the 200 position, press and release the Reset switch on the R7184. The LED should flash once, then return to constant On.
    b. Set the F-F switch to the 600 position, press and release the Reset switch on the R7184. The LED should flash twice, then return to constant On.
    c. Set the F-F switch to the 1200 position, press and release the Reset switch on the R7184. The LED should flash three times, then return to constant On.
    d. If these sequences do occur, proceed to step 14. If they do not occur, the R7184 is defective and should be replaced.
14. Return the F-F switch to the 200 position and set the Limit switch to the OPEN position. The Valve light should go Off immediately and the Burner light go Off after the appropriate OFF delay time. If this occurs, proceed to step 15. If the Valve and Burner light stay On, the R7184 is defective and should be replaced.
15. Place the F-F switch in the NO FLAME position. The R7184 LED should go off. Wait approximately 15 seconds and proceed to step 16.
16. Place the Limit switch in the CLOSED position. Burner and Ignitor lights should come On in approximately 5 seconds. Proceed to step 17.
17. With the F-F switch in the NO FLAME position, the Valve light should come On after appropriate ON delay time. After appropriate lockout time the Burner, Valve and Ignitor lights should go Off, the Alarm light should come On (assuming that the device has Alarm features), and the R7184 should go into lockout (LED flashing on and off at 1/2 second intervals). If these events occur, the device tested is okay. Proceed to step 18. If the events do not occur, the R7184 is defective and should be replaced.
18. Set the F-F Switch to 200 position and push and release the Reset Button on the R7184. The R7184 LED returns to constant On.
19. Turn the A7184 Power switch OFF and disconnect all tester leads from the R7184.
20. Return the R7184 to service.

## Testing R8184 Devices

# ⚠ WARNING

**Electrical Shock Hazard.**
**Can cause severe injury or death.**
Line voltage is present during testing. Observe all electrical safety rules during testing.

1. With no power to the tester and the power cord unplugged, connect the line voltage primary leads to their respective color-coded terminals on the terminal block mounted on top of the tester:
   a. Constant ignition primary—black, white and orange.
   b. Intermittent ignition primary—black, white and orange.
   c. Connect the tester low voltage leads to the low voltage primary terminals on cable W1, black leads to the T-T terminals and yellow leads to the F-F terminals.
2. Make sure the tester switches are in the following positions:
   a. Power—OFF.
   b. Limit—OPEN.
   c. Thermostat T-T—OPEN.
   d. Flame F-F—200 setting.
3. Plug the tester into 120 Vac outlet for 120 volt models or 240 Vac for 240 volt models.
4. Place the tester power switch in the ON position. Power indicator light on tester comes on.
5. Place the Thermostat T-T and Limit switches in the CLOSED position.
   a. If the Burner light does not come On (intermittent-ignition devices), proceed to step 7.
   b. If the Burner light does come On, the R8184 is defective and should be replaced.
6. Place the Flame F-F switch in the NO FLAME position.
   a. Burner light should come on almost immediately (in the case of intermittent-ignition device).
   b. If the Burner light comes on, place the Flame F-F switch in the 200 position within 5 seconds and proceed to the next step.
   c. If the Burner light does not come On, the R8184 is defective and should be replaced.
7. With the Flame F-F switch in the 200 position:
   a. In the constant-ignition primary, the Burner light should remain On. Wait for 60 seconds. If the Burner light stays on, proceed to step 8. If the Burner light goes out, the R8184 is defective and should be replaced.
   b. In the intermittent-ignition primary, the Burner light should remain on; wait approximately 75 seconds. If the light stays on, proceed to step 8. If the Burner light goes out , the R8184 is defective and should be replaced.

NOTE: The R8185D is a special intermittent-ignition device that cuts off ignition as soon as flame is proven, rather than remaining on for a time period of around 75 seconds.

8. Place the Thermostat T-T switch in the OPEN position.
   a. If the Burner (intermittent-ignition primary only) light goes out immediately, proceed to step 9.
   b. If the lights do not go out, the R8184 is defective and should be replaced.
9. Place the Flame F-F switch in the NO FLAME position.

NOTE: With intermittent-ignition primary (R8185E), wait three minutes before proceeding to the next step.

10. Place the Thermostat T-T switch in the CLOSED position.
    a. Burner light should come on almost immediately (in case of intermittent-ignition units). Proceed to step 11.
11. With the Flame F-F switch remaining in the NO FLAME position:
    a. With a constant-ignition device, the Burner light should remain On for the safety switch timing of the primary, and then go out as the safety switch locks out. If this occurs, the device is operational; remove it from the tester.
       (1) If this does not occur, the primary is defective and should be replaced.
    b. With intermittent-ignition devices, the Burner light should remain On for the safety switch timing of the primary and then go out as the safety switch locks out. If this occurs, the device is operational; remove it from the tester.
       (1) If this does not occur, the primary is defective and should be replaced.

NOTE: Safety switch timings vary with primary model numbers.

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