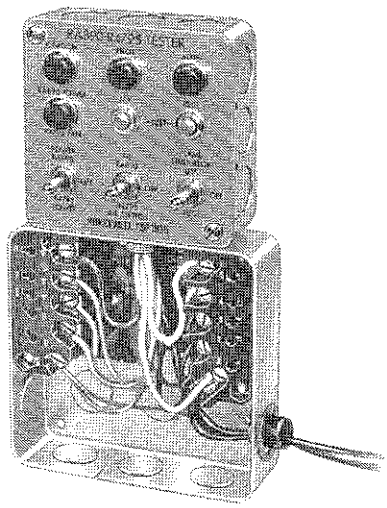
Honeywell

FSP1535 TESTER FOR RA890 AND R4795 PRIMARY CONTROLS

APPLICATION

The FSP1535 Tester provides a quick operational check of a Honeywell RA890 or R4795 Protectorelay Primary Control. Indicator lights visually represent the functions of ignition, pilot, and main valve as the unit operates through its sequence. Units with rated voltage from 100 to 240 V, 50/60 Hz, can be tested by connecting the line cord to a voltage source equal to the rating of the unit under test. Pushing the proper test button drops the flame current below the normal operating range to test for flame relay drop-out. The flame current can be monitored by plugging a W136 Microammeter (or equivalent meter) into the unit's flame current jack.



PRELIMINARY STEPS FOR BOTH RA890 AND R4795

CAUTION

1. Make sure the line cord of the tester is unplugged before mounting the Protectorelay Primary Control. Mounting screws complete electrical circuits; line voltage is present on some screws if tester is plugged in.
2. Use extreme caution if testing the primary control with the cover removed; line voltage is present on some terminals and relay contacts.

1. Remove RA890 or R4795 cover and position the device on the mounting subbase of the tester. Start all 10 mounting screws and tighten uniformly.

CAUTION

Do not overtighten the mounting screws; damage to the circuit board may result. Maximum recommended torque is 15 lb.-in. [1.7 N·m].

2. Place the 3 switches (POWER, T-T—AIR SWITCH, and FLAME SIMULATOR) in the OFF position.

3. Connect the line cord of the tester to a power supply with the same voltage and frequency as the device to be tested.

CAUTION

Be sure power supply is of the same voltage and frequency as the RA890 or R4795 before connecting tester to avoid equipment damage.

4. Turn on power source if disconnected in step 3.
5. Stand the tester upright.
6. Reset safety switch on RA890 or R4795 by pushing reset button.

TEST PROCEDURE FOR RA890

For detailed checkout procedures, refer to appropriate instruction sheet:

RA890E—form 95-2812.
RA890F—form 60-2034.
RA890G—form 60-2035 (or 60-2294 for single transformer models).
RA890H,J,K—form 60-2074.

IMPORTANT

Before testing an RA890E or F used in a standing pilot system, replace the jumper screw in the top edge of the RA890E base, or jumper the clipped pilot link on the RA890F base. If this cannot be done (jumper screw discarded, screw hole plugged, or pilot link ends clipped too short), the RA890 cannot be checked for SAFE START or FLAME FAILURE DURING RUN CYCLE. However, the FSP1535 will check the RA890 for other functions it is performing in the standing pilot system.

SAFE START
(Flame present or simulated)

1. Place POWER switch in RA890 position; the RA890 POWER lamp lights.

IMPORTANT

If testing an RA890E, allow 30 seconds for tube filaments to heat before proceeding.

2. Place FLAME SIMULATOR switch in RECT position for RA890E,F,H,J, or K; in UV position for RA890G.

3. Immediately, place T-T—AIR SWITCH in T-T RA890 position. The flame relay (2K) in the RA890E,F, or G should pull in and prevent the load relay from being energized. In the RA890H or K, *2K will not pull in,* but an internal relay (4K) should pull in and prevent the load relay from being energized. (The RA890J should start normally; PILOT lamp will light.) No lamps (other than the RA890-POWER lamp) should light on the tester. If any lamps light, replace the RA890.

NOTE: On the RA890H,J, or K, the green signal light should begin blinking.

4. Return T-T—AIR SWITCH and FLAME SIMULATOR switch to OFF position and continue test. (The green signal light on RA890H,J, or K will go out.)

NORMAL RUN CYCLE

1. Place T-T—AIR SWITCH in T-T RA890 position. The load relay in the RA890 should pull in; IGNITION and PILOT lamps should light for RA890E,F,G,H, or K; PILOT lamp only for RA890J (IGNITION lamp will *never* light for RA890J).

NOTE: 4 second nominal delay of load relay pull-in is normal for RA890F,G,H, or J (may be as long as 30 seconds if cold).

2. Place FLAME SIMULATOR switch in RECT position for RA890E,F,H,J, or K; in UV position for RA890G. The flame relay in the RA890 should pull in; MAIN lamp should light and IGNITION lamp should go out.

NOTE: On the RA890H,J, or K, the green signal light begins blinking.

3. If either the load relay or flame relay fails to pull in, replace the RA890.

4. If RA890 operates properly, continue test.

FLAME FAILURE DURING RUN CYCLE

1. Depress and *hold* RECT-TEST button for RA890E, F,H,J, or K; UV-TEST button for RA890G. The flame relay (2K) should drop out in the RA890E,F,G, or J, *but not in the RA890H or K.* In the RA890H or K, the load relay (1K) should drop out. MAIN lamp should go out; IGNITION lamp should light for RA890E,F, or G; PILOT lamp should go out for RA890H or K. If flame relay (or load relay in the RA890H or K) does not drop out, replace the RA890.

NOTE: Green signal light on RA890H,J, or K will go out.

2. For RA890E,F,G, or J, continue to hold in the Test button for at least 30 seconds. (If Test button is released too soon, MAIN lamp will relight and IGNITION lamp will go out.) The safety switch should lock out the device in either 15 or 30 seconds (depending on timing) for RA890E or F; 15 seconds for RA890G or J. IGNITION and PILOT lamps should go out. Proceed to step 4.

3. For RA890H or K, release Test button when MAIN lamp goes out. The safety switch should lock out the device in about 15 seconds. Wait about 30 seconds; then proceed to step 4.

4. Without resetting safety switch, repeat NORMAL RUN CYCLE above. The load relay should not pull in; no lamps (other than the RA890-POWER lamp) should light.

5. If safety switch does not lock out the device, replace the RA890.

TEST PROCEDURE FOR R4795

For detailed checkout procedures, refer to instruction sheet 60-2285.

SAFE START
(Flame present or simulated)

1. Place POWER switch in R4795 position; the burner motor relay should pull in; R4795-FAN lamp lights.

2. Place T-T—AIR SWITCH in R4795 AIR SWITCH position. The R4795 purge period begins (see timing stamped on plug-in timer in R4795).

3. Place FLAME SIMULATOR switch in RECT position for units with green amplifiers; in UV position for units with violet amplifiers. The flame relay in the R4795 should pull in immediately and prevent the load relay from energizing at the end of the purge period. No lamps (other than the R4795-FAN lamp) should light on the tester at the end of the purge period. If any lamps light, replace the R4795.

4. Return FLAME SIMULATOR switch to OFF position and continue with test.

NORMAL RUN CYCLE

1. With timer at end of purge period, the load relay should pull in; IGNITION and PILOT lamps should light.

2. Place FLAME SIMULATOR switch in RECT position for units with green amplifiers, in UV position for units with violet amplifiers. The flame relay should pull in; MAIN lamp should light and IGNITION lamp should go out.

3. If either the load relay or flame relay fails to pull in, replace the R4795.

4. If R4795 operates properly, continue test.

FLAME FAILURE DURING RUN CYCLE

1. Depress and hold RECT-TEST button for units with green amplifiers; UV-TEST button for units with violet amplifiers. Flame and load relays in the R4795 should drop out; MAIN, PILOT, and IGNITION lamps should go out. If flame relay does not drop out, replace the amplifier and repeat test. If relays still do not drop out, replace the R4795.

2. For the R4795A, purge period should begin. Load relay should pull in at end of purge period; IGNITION and PILOT lamps should light. If failure occurs, replace R4795A.

3. For the R4795D, the safety switch should lock out the device in 15 seconds; purge period should *not* begin. If safety switch fails, replace the R4795D.

For further checkout instructions, refer to appropriate instruction sheet for the RA890 or R4795.

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