



**WHITE-RODGERS**

**3094**

**PLUG-IN FLAME SENSORS  
FOR WHITE-RODGERS PLUG-IN GAS VALVES  
INSTALLATION INSTRUCTIONS**

**Operator: Save these instructions for future use!**

**FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY  
BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE  
PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

## DESCRIPTION

These flame sensors are designed for use with the White-Rodgers gas valves having plug-in receptacle. The sensors are simply plugged in with no additional electrical connections or mounting devices required.

When used with these valves, they prevent the flow of gas to the main burner if the pilot flame is not burning or is insufficient to properly ignite the main burner.

The 3094 Flame Sensors are SPDT (single-pole double-throw) devices. Some models have an EQSO (electrical quick shut-off) resistor in parallel with the cold contact to prevent gas flow with a momentary loss of power. Other models have a .250" spade terminal connected to the hot

terminal for operation of a fan relay. The sensing bulbs are the slip-in type with a retaining ring installed in a specific groove for correct positioning of the bulb in the pilot flame.

**These flame sensors are not universal replacements.** Each flame sensor type has been designed for a specific application and voltage. They can replace only the identical type in applications where it was originally installed by the equipment manufacturer. If the mercury flame sensor is not the same type number as the one being replaced, contact the original equipment manufacturer (OEM) for a suggested replacement.

## PRECAUTIONS

If in doubt about whether your wiring is millivolt, line, or low voltage, have it inspected by a qualified heating and air conditioning contractor or a licensed electrician.

Do not exceed the specification ratings.

All wiring must conform to local and national electrical codes and ordinances.

This control is a precision instrument, and should be handled carefully. Rough handling or distorting components could cause the control to malfunction.

### **⚠ WARNING**

**To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.**

### **⚠ CAUTION**

**Shut off main gas to heating system until installation is complete.**

**Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.**

**Following installation or replacement, follow appliance manufacturer's recommended installation and/or service instructions to insure proper operation.**

### **ATTENTION!**

This product contains mercury. There will not be any exposure to mercury under normal conditions of use. This product may replace a unit which contains mercury. Do not open mercury cells. If a cell becomes damaged, do not touch any spilled mercury. Wearing nonabsorbent gloves, take up the spilled mercury with sand or other absorbent material and place into a container which can be sealed. If a cell becomes damaged, the unit should be discarded. Mercury must not be discarded in household trash. When this unit or the unit it is replacing is to be discarded, place in a suitable container and return to us .



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**PART NO. 37-5742A**

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## SPECIFICATIONS

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**Switch Action:** SPDT

**Electrical Ratings:** See rating label on sensor for specific electrical rating.

**Terminal Designations:**

- 1 - Normally closed
- 2 - Normally open
- 4 - Common

**Sensing Bulb Type:** Slip-in

**Timing:** Normally open contacts close approximately 60 seconds after the pilot is ignited. Contacts open approximately 40 seconds after the flame is extinguished.

## INSTALLATION

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### CAUTION

**To avoid personal injury and/or property damage, shut off gas and electric to heating system until installation is complete.**

1. Turn off gas and power until replacement is complete.
2. Remove defective flame sensor from pilot burner and unplug from gas valve.
3. Align tip of defective flame sensor with tip of replacement sensor and compare the locations of the C-rings. If the C-rings are not positioned the same distance from the tip of the bulb, the replacement sensor is incorrect for this application and cannot be used. Contact the OEM for a suggested replacement.
4. If the position of the C-ring is correct, insert replacement sensor in pilot burner. Uncoil only enough capillary to allow sensor to be installed. Be sure new sensing bulb is in the same position as the unit it is replacing.
5. Carefully uncoil capillary of new sensor by grasping capillary at switchcase and sensing bulb, then "stretch" coil until switchcase reaches gas valve plug. Carefully align switchcase with gas valve socket and plug flame sensor into valve.
6. Turn on gas and electrical power to the system. Check system for proper operation by following the appliance manufacturer's recommended installation and/or service instructions.

The general sequence of operation is: the pilot flame will heat the sensor to close the (HOT) contact and allow the main burner to ignite when the thermostat calls for heat. Upon loss of pilot flame, the sensor will cool and transfer to the (COLD) contact, which prevents the gas valve from being energized.