Honeywell

# L6008A Remote Bulb Aquastat® Controller

Installation Instructions for the Trained Service Technician.

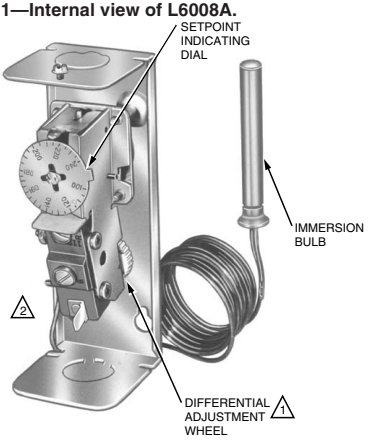
## Application

This remote bulb, immersion-type controller operates in response to temperature changes in hydronic heating systems and in other heated liquids. It provides spdt switching for three wire circuit applications, combining low limit and circulator control.

Switch ratings are shown on the inside cover. The electrical requirements of controlled equipment must not exceed these ratings.

The R to B contacts make to start the boiler when the boiler water temperature drops to the dial setting less the differential. The R to W contact breaks to prevent circulator operation. When the boiler water temperature rises to the dial setting, R to B breaks and R to W makes. See Fig. 1.

**Fig. 1—Internal view of L6008A.**




1 ONLY MODELS WITH ADJUSTABLE DIFFERENTIAL HAVE ADJUSTMENT WHEEL. STANDARD MODELS ARE FIXED AT APPROXIMATELY 5° F (3° C).

2 SELECT MODELS HAVE SCREW TERMINAL, NOT TAB TERMINAL.

M8814

## Installation

**WHEN INSTALLING THIS PRODUCT…**

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

### ⚠ WARNING

**CAN CAUSE PROPERTY DAMAGE, SEVERE INJURY OR DEATH.**

This product is intended for use only in systems with a pressure relief valve.

### ⚠ CAUTION

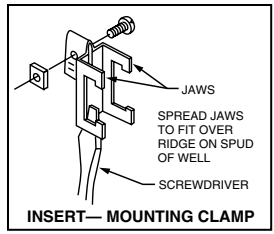
Disconnect the power supply before beginning installation to prevent electrical shock or equipment damage.

The installation should be done only by a qualified service person.

The remote temperature-sensing bulb can either be installed in an immersion well that extends into the boiler or tank, or it can be directly immersed in the liquid. See Fig. 2. For installations not using a well, secure the remote bulb with a compression fitting or boiler fitting. See Fig. 3 and 4.

Order well, compression fitting, or boiler fitting separately. Sizes available: 1/2-in., 3/4-in. N. P. T. spud. Well, if used, must snugly fit sensing bulb for good thermal response. Insert bulb until it rests against bottom of well, then hold it there while tightening the tubing clamp.

**Fig. 2—Immersion well mounting.**




**INSERT— MOUNTING CLAMP**

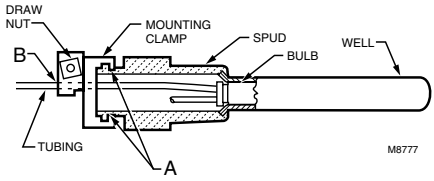



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**Fig. 3—Mounting with compression fitting.**

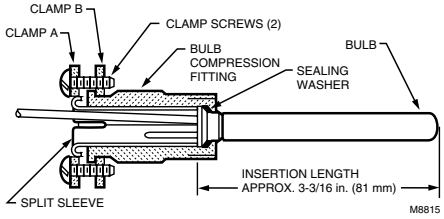
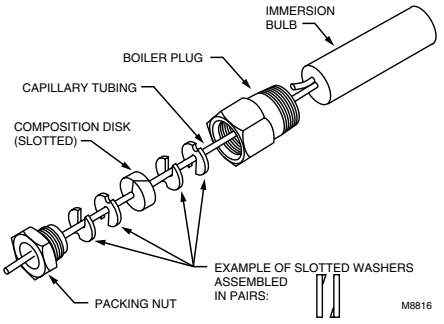



**Fig. 4—Mounting with boiler fitting.**




The boiler manufacturer usually provides a tapping for inserting the Aquastat® Controller sensing element. Locate this tapping in a representative point where typical water temperature can be measured. Do not locate the bulb or protecting immersion well close to a hot or cold water inlet or a steam coil.

If the system is filled, drain the system to a point below the boiler tapping, or wherever the sensing bulb is to be installed.

Install the bulb in the supply line of an indirect water heater, in the direct water heater itself, or in the feed riser, about 6 in. above the boiler. If the riser is valved, the bulb can be installed between the boiler and the valve.

## TO MOUNT THE CASE

1. Remove the cover and fasten the case to the wall or panel, using the three mounting holes in the back of the case.
2. If desirable, reroute tubing to run through any of the other three corner notches in the case. Be careful not to bend tubing sharply or kink it. Bends should be at least one in. radius.

## TO INSTALL REMOTE BULB

### Immersion Well Mounting

1. Screw the well into the boiler, tank, or pipe tapping.
2. Insert bulb into the well, pushing tubing until the bulb bottoms in the well.
3. Attach a retainer clamp to the end of the well spud. Loosen the draw nut and spread the jaws of the clamp with a screwdriver if necessary.
4. With the retainer clamp attached to the well spud (be sure jaws of clamp hook over ridge at end of spud, as shown at points A), adjust tubing to fit through retainer clamp groove, as shown at point B.
5. Tighten draw nut so that retainer clamp is firmly attached to well spud and tubing is held securely in place.

**! CAUTION**

Do not secure draw nut so tightly that retainer clamp could collapse tubing.

### MOUNTING WITH COMPRESSION FITTING

1. Screw the fitting into the boiler or pipe tapping.
2. Slide the sealing washer onto the bulb.
3. Insert the bulb into the boiler fitting until the bulb bottoms.
4. Slide the split sleeve into the fitting.
5. Place the clamps A and B on the assembly so that the sleeve is drawn into the fitting when the screws are tightened.

NOTE: Be sure that the nub on clamp A engages space between the sleeve and the clamp.

6. Tighten clamp screws evenly.

### MOUNTING WITH BOILER FITTING

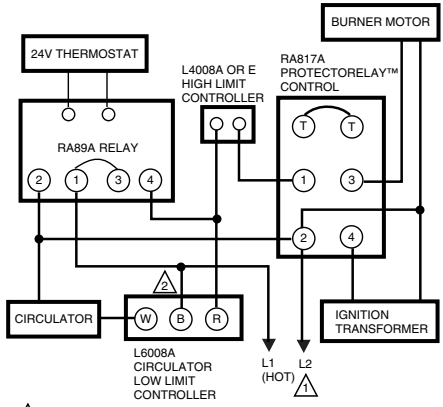
1. Screw the fitting into the boiler or pipe tapping.
2. Place the packing nut on the tubing.
3. Slide the bulb completely through the fitting.
4. Place the composition disk and four slotted brass washers on the tubing in the order shown in Fig. 4. Turn brass washers so that the slots are 180 degrees to each other.
5. Slide the seal assembly into the fitting and tighten the packing nut.

## WIRING

Be sure all wiring agrees with applicable codes, ordinances, and regulations for wire size, type of insulation, and enclosure. The controllers are provided with conduit knockouts in the top and bottom of case.

Refer to Fig. 5 for a typical connection diagram.

**Fig. 5—Typical connection diagram for an oil-fired hydronic heating system that provides year around domestic hot water.**



# Adjustments

Set the differential to correspond with the boiler manufacturer recommendations. To adjust models with adjustable differential, rotate the wheel on the back of the snap switch until the desired reading is aligned with the V notch in the frame. The wheel provides an adjustment from 5 to 30 degrees (F). Replace the cover on the Aquastat® Controller.

Adjust the control point to correspond with the boiler manufacturer's recommendations. To adjust, insert a screwdriver in the slotted screw-type head located beneath the window in the cover. Turn the scale to the desired control point.

# Checkout

Check to make certain that the Aquastat® Controller is installed and adjusted properly.Operate the system and observe the action of the device through several cycles to make certain that it provides proper low limit cut-out protection and circulator control. Make any further adjustments needed.

Honeywell

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