

# TEMPERATURE SENSOR FOR GREASE EXHAUST HOOD

( 5/8" DIAMETER MODEL )

PART # 40-STAT



Tube Shell Material:

304 stainless steel

Tube Shell Diameters:

5/8" model diameter = .625" +.000/- .004" actual

**Temperature Ranges:**

1/2" dia. and 5/8" dia. models: -100° F to 600° F standard (up to 700° F available)

**Set Point Definition:**

Temperature at which switch contacts open or close

**Standard Factory Set Point:**

75° F +/- 15° F (24° C +/- 8° C)

(Optional Factory Setting Available)

**Contact Switch Ratings:**

5/8" dia. models: 10.0 amps @120 VAC, 5 amps @240 VAC, 2 amps @120 VDC

**Sensitivity:**

1/2" dia. and 5/8" dia. models: As low 1/2° F depending on application

**Maximum Temperature Overshoot:**

100° F above set point temperature

**Standard Termination:**

5/8" dia. models: 8" long- #16 AWG stranded nickel clad copper w/fiberglass insulation

**Mounting Fitting Material:**

300 series stainless steel

**UL Recognitions:**

1/2" dia. and 5/8" dia. models  
File E36322

**CSA Certifications:**

5/8" dia. models  
File LR23541

# TEMPERATURE SETTING INSTRUCTIONS



Normally Open CAL-STAT (N.O.): Contacts close on temperature rise at setpoint temperature.

Normally Closed CAL-STAT (N.C.): Contacts open on temperature rise at setpoint temperature.

Unless otherwise specified, the temperature setting of a CAL—STAT should be made in the following manner:

## **For all 1/2" and 5/8" diameter CAL-STAT temperature adjustments:**

**NOTE:** Counterclockwise rotation of the adjusting screw INCREASES temperature setpoint.

**NOTE:** Clockwise rotation of the adjusting screw DECREASES temperature setpoint.

1. Connect test light or other device suitable for determining contact position across CAL-STAT leads.
- 2.1 Install CAL-STAT in media to be controlled.
- 2.2 Allow the temperature of media to increase 10 to 20 degrees above required temperature setpoint by turning the adjusting screw counterclockwise. (Note: adjusting rate for the 5/8" diameter CAL-STAT is approximately 90 degrees F per revolution; for 1/2" diameter CAL-STAT, rate is 120 degrees F per revolution.) Allow media to stabilize at this temperature.
- 2.3 Turn adjusting screw clockwise in small increments until desired control temperature (setpoint) is reached.
- 2.4 CAL-STAT is now set.
3. If an over adjustment is made during step 2.3 or if a readjustment is required, restart at step 2.2 and repeat the procedure. Remember that all readjustments must be made by turning the adjusting screw CLOCKWISE to reach the desired setpoint.

## **For 1/4" diameter CAL-STAT temperature adjustments:**

**NOTE:** Counterclockwise rotations of the adjusting screw DECREASES temperature setpoint.

**NOTE:** Clockwise rotations of the adjusting screw INCREASES temperature setpoint.

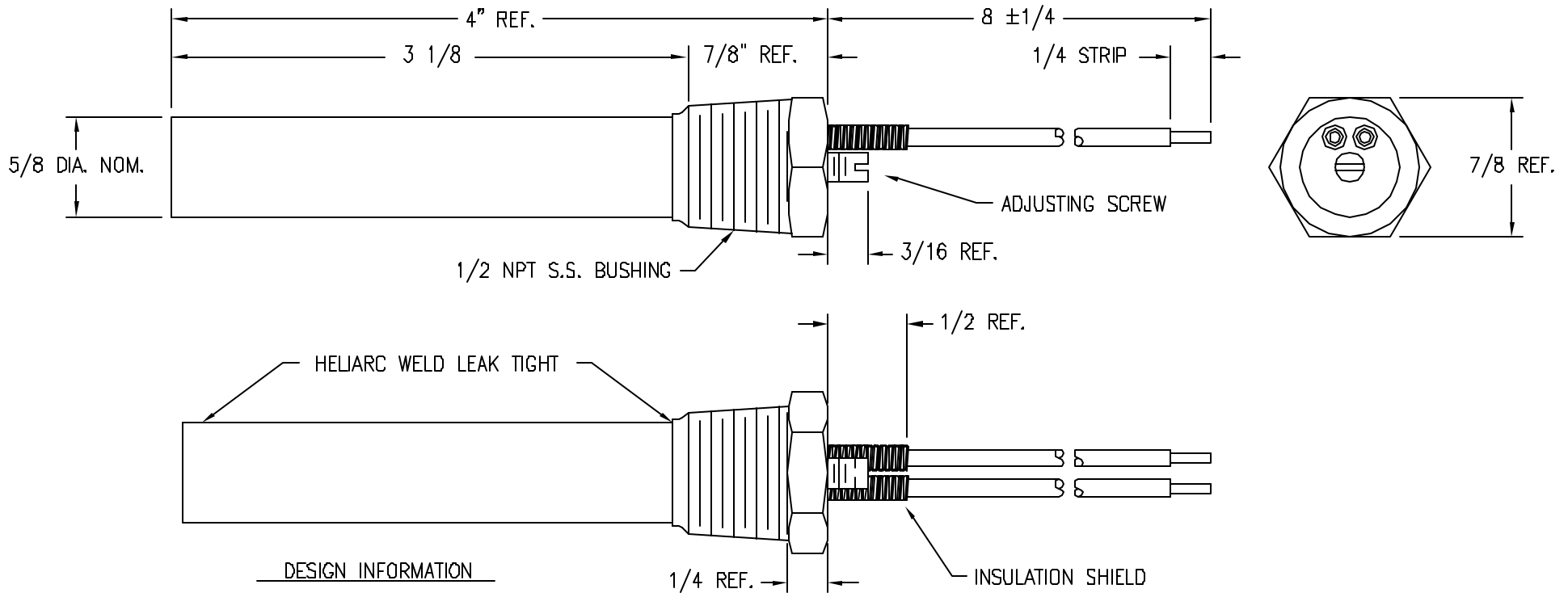
1. Connect test light or other device suitable for determining contact position across CAL-STAT leads.
- 2.1 Install CAL-STAT in media to be controlled.
- 2.2 Allow the temperature of media to increase 10 to 20 degrees above required temperature setpoint by turning the adjusting screw clockwise. Do not turn adjusting screw more than 1/4 revolution in either direction from room temperature without checking setpoint. (Adjusting rate is approximately 700 degrees F per revolution.)
- 2.3 Turn adjusting screw clockwise in small increments until desired control temperature (setpoint) is reached.
- 2.4 CAL-STAT is now set.
3. If an over adjustment is made during step 2.3 or if a readjustment is required, restart at step 2.2 and repeat the procedure. Remember that all readjustments must be made by turning the adjusting screw COUNTERCLOCKWISE to reach the desired setpoint.

**NOTE:** All CAL-STATS may be subject to a small amount of setpoint drift after a few cycles under load due to relaxation of stress and other factors. Check the setpoint and readjust if required after approximately 100 cycles under load to improve performance.

## **CAL-STAT APPLICATION PRECAUTIONS (Please read carefully):**

- Do not expose this unit to more than 100 degrees Fahrenheit (38 degrees Celsius) above setpoint.
- On 1/2" and 5/8" diameter CAL-STATS, do not turn adjusting screw more than 7 revolutions in either direction from room temperature.
- On 1/4" diameter CAL-STATS, do not turn screw more than 1/4 revolution in either direction from room temperature without checking setpoint.
- Disassembly of adjusting screw may also render CAL-STAT inoperative.
- If necessary to reduce the temperature setting in a heated system, do not turn adjusting screw more than one revolution (or 100 degrees Fahrenheit temperature drop) at any one time.
- Do not exceed the rating shown on CAL-STAT shell.
- Optimum performance is achieved when the contact load is half the maximum rating. Improved performance will result when a contactor is used to control the load and the CAL-STAT is wired through the holding coil of the contactor.
- System vibration can cause contact bounce. Also, controlling systems where thermal rise over time is slow can result in overshooting the setpoint. The addition of a capacitor will reduce the bouncing and overshooting. The capacitor is wired in parallel across the leads of the CAL-STAT. Consult factory for application assistance, capacitor selection, and availability.
- Proper hole sizing for the CAL-STAT is extremely important to avoid restricting shell expansion during operation and at the same time maintaining proper fit for the best temperature control. The reamed hole sizes required are:
  - 1/4" models - .25 diameter hole; 1/2" models - .5 diameter hole; 5/8" models - .625 diameter hole
- Do not seal lead end of CAL-STAT with silicone sealant materials such as oils, caulking or grease.
- Do not distort CAL-STAT shell.

M14/0000/183 (Jan 2007)



DESIGN INFORMATION

RATED USE TEMP. RANGE: -100°F TO +600°F  
 ADJUSTMENT RATE: APPROX. 90°F/REVOLUTION. CCW RAISE  
 CONTACT RATING: 10 AMP. 120 VAC  
                   5 AMP. 240 VAC  
                   2 AMP. 120 VDC  
 CONTACT ACTION: NORMALLY OPEN (CLOSE ON TEMP. RISE)  
 TEMP. UNDERSHOOT: UNLIMITED  
 TEMP. OVERSHOOT: 100°F OVER SETPOINT INTERMITTENTLY  
 SHELL MATERIAL: 304 STAINLESS STEEL  
 LEAD MATERIAL: #16 AWG TYPE MGXN300, U.L. LISTED CSA CERTIFIED  
                   RATED 450°C 300 VAC  
 U.L. FILES #E36322, C.S.A. FILE #LR23541  
 LEADS ARE INTERNALLY CONNECTED

NOTES:

1. MARK C.S.A. IN ADDITION TO STANDARD MARKING

\*\* UNIT IS U.L. RECOGNIZED

A		CHG LENGTH OF CAL-STAT & ADJ. SCREW, & STRAIN RELIEF.	8-98	REVISED BY	EXCEPT WHERE OTHERWISE STATED DIMENSIONS ARE IN INCHES.	5/8 CENTER ADJUST CAL-STAT PIPE THREAD MOUNTING (NORMALLY OPEN)		
REV. SYM.	DESCRIPTION	DATE	REVISED BY	FOR TOLERANCES ON FINISHED DIMENSIONS SEE STD. TOLERANCE PROCEDURE	DN BY	DATE	CH BY	PAGE
					E. BEAUSOLEIL	06-20-97	[Signature]	1 of 1
REVISIONS				SCALE	FOR USE ON	SIZE	DWG NO.	
				1 : 1		A	G21/3206/1	REV. A



THIS IS A C.A.D. DRAWING. ALL CHANGES TO DRAWING MUST BE DONE ON C.A.D.