



Fluid Power Specialist



## Instructions for the Installation and Use of LENZ Bimetal Dial Thermometers

### GENERAL

When removing the thermometer from the packing box, handle it by the case assembly or the fitting. Do not handle the thermometer by the stem. Do not bend the stem this will cause misalignment of the internal parts, resulting in permanent damage.

### INSTALLATION OF THERMOMETERS

The thermometer should be mounted at any convenient location where it will be subjected to the average temperature variations to be indicated.

Avoid bending the stem, as this will cause misalignment of the internal parts, resulting in permanent damage. To tighten the thermometer to the apparatus use a wrench applied to the hexagon head of the threaded connection located just outside of the case.

### INSTALLATION

Locate the free end stem so that at least the last two to three inches of the free end will be subjected to the average temperature to be measured. Do not expose the stem to a temperature in excess of the maximum dial reading.

The thermometer is normally provided with a threaded connection. To tighten the thermometer to the apparatus or into a thermowell, use an open-end wrench applied to the hexagonal head of the threaded connection. Turn until reasonably tight, then tighten still further in the same manner as a pipe elbow or similar pipe fitting until the scale is in the desired position for reading. **DO NOT TIGHTEN BY TURNING THE THERMOMETER CASE.** Install the thermometer so that the maximum case temperature is kept below 200° F at all times.

When a thermometer is equipped with a thermowell, the thermowell should be installed onto the apparatus first. The stem of the thermometer should then be coated with a heat-conducting medium (a mixture of glycerin and graphite or any other heavy lubricant may be used), after which the thermometer stem is inserted and tightened into the thermowell.

**CAUTION:** Thermowells should be used for all process systems where pressure, velocity, or viscous, abrasive, or corrosive material are present individually or in combination to protect the thermometer stem from corrosion or physical damage, and to facilitate removal of the thermometer without disturbing the process.

### TESTING

LENZ Bimetal Dial Thermometers are carefully calibrated at the factory and under most operating conditions will retain their accuracy indefinitely. However, as in the case of all instruments, it is beneficial to make periodic checks for accuracy against known standards.

### ADJUSTMENT

If it is necessary to make an adjustment to the thermometer, proceed as follows: For thermometers with an external adjustment, use a small wrench, screwdriver or coin to turn the slotted hexagonal "RESET" adjustment in the back of the case until the pointer indicates the proper temperature on the dial. All adjustments must be made using a well agitated temperature bath operating at a known temperature. Instruments used to monitor the temperature bath must have an accuracy greater than the thermometer being adjusted.

### MAINTENANCE OF DIAL THERMOMETERS

Aside from occasional testing, little or no maintenance is required.

Be sure that the gasketed glass window is on the case at all times, as moisture and dirt inside the case will eventually cause the thermometer to lose its accuracy (see caution note below).

If the thermometer is used for measuring the temperature of a material that may harden and build up an insulating layer on the stem, the thermometer should be removed from the apparatus occasionally and the stem cleaned. Observe this precaution to insure the sensitivity of the instrument.

### FILLED THERMOMETER POLICY

LENZ does not recommend use of filled instruments for continual use at operating temperatures above 400° F (204° C) or below -100° F (-70° C). Under no circumstances will an instrument warrant apply or will LENZ assume any liability for use above these temperatures.

**CAUTION:** Bimetal Thermometers operating below freezing must have a perfectly tight case to prevent entrance of moisture, which eventually will condense and freeze inside the stem. This condition shows up as a failure of the thermometer to read accurately below 32° F or 0° C. For this reason it is important to avoid damage of the glass window, while the stem temperature is at freezing or below.

