

**TECHNICAL UPDATE - TU-3002**

**SUBJECT: Application and Installation of Dekoron Line Sensing Thermostats in Electric Traced Tubing Bundles**

One of the methods of controlling the tube temperature in Dekoron/Unitherm Electric Traced Tubing Bundles is to install a model 1660-13A11 or 1660-13A12 line sensing thermostat.

These devices use a oil-filled bulb to sense the temperature in the heated core. The heated oil expands and causes a bellows in the thermostat housing to move. This actuates a switch, which switches the power to the electrical heating element.

The bulb sensor is a stainless steel tube, approximately 3/16 inches (4.7 mm) in diameter and 10 inches (254 mm) long. The bulb senses the average temperature along its length. To operate properly, the entire length of this bulb must be within the heated core.

Some advantages to using a thermostat to control bundle temperature are:

1. the system is extremely rugged and requires little maintenance;
2. the system can be installed in hazardous location (using approved kits and seals);
3. the thermostat does not require an external power source;
4. the long sensing bulb senses an average temperature within the heated core, not the operating temperature of a single tube or of the electrical heating element;
5. the thermostat can be used as a high temperature limit or low temperature alarm simply by changing the connection inside.

Some additional items to consider:

1. a thermostat is a mechanical switch and cannot control the temperature with the same resolution as an electronic temperature controller;
2. a thermostat generally has a "deadband" of about 16°F (9°C), and the temperature will fluctuate within this range;
3. thermostats are generally designed to operate within a narrower temperature range than an electronic temperature controller;
4. most thermostats have limited or no readout and are unable to communicate with central monitoring systems;
5. thermostats must be mouted to a structure within 10 feet (3 meters) of the sensing point;
6. wires run to the thermostat must be large enough to handle the total current of the bundle.

For more information on Dekoron/Unitherm thermostats, see our catalog.

For installation information, request drawings "tstat1" and "tstat2" from your Unitherm representative.