

3.2.3 BIMETAL ROD THERMOSTATS



It is currently the main application of bimetallic systems. The bimetallic rod actuates a contact system. The setting can be fixed or with a graduated knob. The contacts are control , manual reset or mixed types.

The main applications are:

- Household storage water heaters. They are controlled by a screwdriver adjustment, with single-pole switching thermostat for temperature control , with temperature sensing made by the rod, and double pole switching for the manual reset, with temperature sensing usually made by a bimetal disc located at the bottom of the tank. They are protected by the cover mounted under the water heater.
- In water heaters and industrial tanks. The temperature control devices are then split: one for control and one for safety. They are mounted in IP65 waterproof housings.
- In hydraulic systems, where they are use for oil temperature control. They have 1,2 or 3 staggered contacts to provide different levels of alert and security.

Current temperature ranges span from -50 to 400 ° C. However, some special models can reach 800 °.

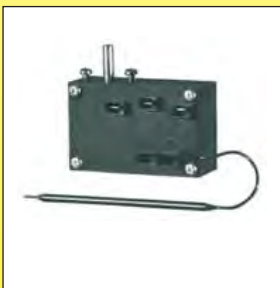
3.3 LIQUID EXPANSION THERMOSTATS

3.3.1 MERCURY EXPANSION IN GLASS TUBE

This is one of the first thermostat systems, invented after the mercury thermometers. A wire is inserted in the capillary glass tube. When the mercury touches the wire, the contact is established. This type of thermometer has long been the reference instrument for precise temperature control . It has no more serial applications .



3.3.2 BULB AND CAPILLARY THERMOSTAT



This is the most common remote measurement and temperature control. The capillary lengths can be up to 3 meters but with a significant drift due to the amount of liquid within the capillary.

In this series, fail safe devices may be produced . Current ranges of temperature span from -50 ° C to 400 ° C, exceptionally up to 760 ° C.