

## DIAL THERMOMETERS - LIQUID EXPANSION

### Liquid expansion - what does this mean & why is it used?

A liquid expansion thermometer works by using the thermal expansion of a liquid within a capillary tube to measure temperature. The precision of this method varies by the liquid used, but all use the fact that when most liquids are heated, they expand.

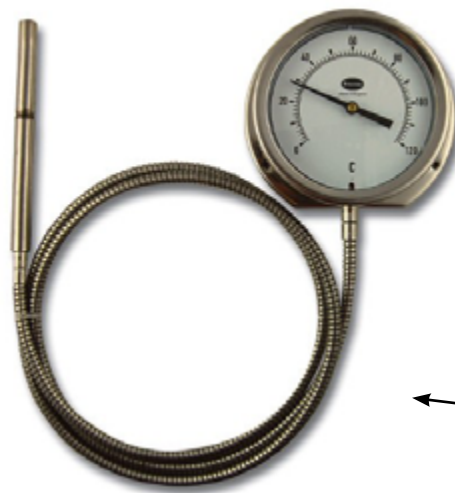
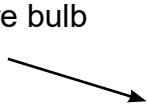
The liquids used in dial thermometers are generally industrial alcohols.

Liquid-expansion thermometers work according to the same principle as glass thermometers. In principle, they consist of an immersed stem with a pressure bulb and display. Both parts are connected via a capillary. The bulb is regarded as the active part of the immersed stem and is filled with a liquid as the expanding medium. The expansion of the liquid will lead to a pressure increase in the enclosed system. The pressure change is displayed by means of a bourdon tube measuring system.

Liquid expansion is generally used due to the following –

- comparatively cheaper than other temperature measurement devices,
- practical and convenient to use,
- does not need an external power source to operate, and
- provides very good repeatability and calibration remains unaffected.

Immersed stem with  
pressure bulb



Display



Capillary



For more information about any of our dial thermometers, please contact [sales@brannan.co.uk](mailto:sales@brannan.co.uk).

