



Technical Brief

TEMPERATURE

Extending the Life of your Industrial Thermometer

Quality thermometers are built to provide a long service life. Here are a few tips to help you get the most out of your instruments.

Environmental conditions:

The ambient temperature could have a negative impact on the performance of your thermometer. Electronic thermometers tend to have a lower ambient operating range, typically -40° to 160° F, than mechanical types like bimetal thermometers which can operate in an ambient temperature of up to 200° F.

Most quality industrial thermometers are hermetically sealed and are suited for use in environments where humidity or moisture is high. If your thermometer is submerged or subjected to high pressure spray and not rated for those conditions, water damage will likely result.

Vibration:

Vibration is a main cause of loss of accuracy and failure for industrial thermometers. A silicone filled case should be used in applications where high vibration is present. The fluid will assist in dampening the internals of the thermometer, improving readability, and helping prolong its life. Use of silicone fill should be avoided where strong oxidizing agents such as oxygen, chlorine, nitric acid, and hydrogen peroxide are present.



Vibration can cause accuracy problems and premature failure.

Out of range:

The measuring range should be selected so that the system temperature falls at approximately the mid-point of the scale. Care should be exercised for mechanical instruments (Bimetal, Gas and Vapor Tension) to ensure that they are not exposed to temperatures higher or lower than the measuring range, thus preventing damage to the bimetal element and other components. Bimetal thermometers should not be exposed continuously to process temperatures over 800° F (425° C) to avoid damaging the bimetal element.

Process fluid:

The type of the process fluid may have a damaging effect on the thermometer wetted parts. The use of a thermowell for applications with corrosive or caustic fluids, or those contained under pressure, will protect the stem of the thermometer and also allow it to be removed from the process without shutting down the system.



Corrosive fluids can cause premature stem failure.

Impact:

For applications that are prone to possible impact, lens materials such as acrylic, polycarbonate or shatterproof glass will highly reduce the risk of damage.

To discuss thermometer care or applications, feel free to call our experts to discuss your application at 800-232-5335 or visit <https://www.teltru.com>



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