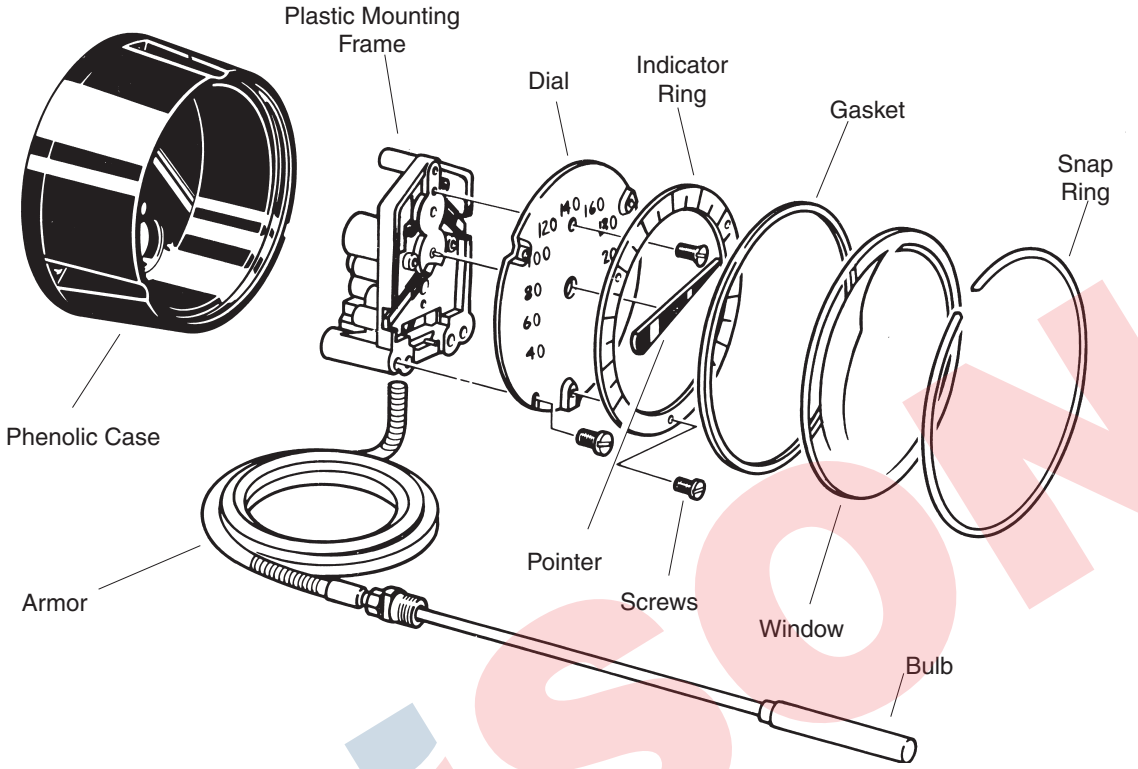
ASHCROFT®

Product Selection Information
Duratemp® Remote-Mount Thermometers



The superiority of a Duratemp® thermometer is revealed by comparison to conventional thermometry. Conventional gas thermometers operate on the principle that the absolute pressure is proportional to the absolute temperature. To obtain a usable temperature span, elevated working pressures must be used which frequently produce high stresses in the Bourdon tube. These high stresses reduce instrument life and may be hazardous.

The Duratemp thermometer on the other hand utilizes a combination of inert gas and activated carbon called a molecular sieve. This combination produces much lower internal pressures than conventional thermometers for the same temperature span. These lower pressures are transmitted to a compact helical Bourdon tube. The Bourdon tube connects directly to the pointer shaft thus eliminating the traditional movement assembly.

With this advantage the Duratemp thermometer is able to provide long life and sustained accuracy under the most adverse shock and vibration conditions.

Accuracy: ±1% of range span.

Bulb Size: 3″ long by ⅜″ O.D. bulb.

Bulb Material: 316SS

Ambient Error: Ambient error is a function of line length, ambient temperature and other system parameters. The error at mid-scale will be ±½% of range span for a ±25°F change in ambient temperature, for a typical thermometer. Consult factory for details.

Vibration and Shock Resistance: Extreme resistance similar to that required by MIL-T-19646.

Actuation: Gas/activated carbon. Pointer driven directly by lightweight helical Bourdon tube which is silicone damped.

Field Zero Adjustment: Adjustable pointer.

Over-range: Minimum 25% of span beyond top of range. If greater over-range is anticipated, consult Customer Service.

Head Error: None. No correction required for any mounting configuration.

Capillary Material: 300 series stainless steel.

Line Length: 5-80 ft in standard increments.

Armor: AISI 302 Spring Armor as standard.

Dial Sizes: Maxivision® anti-parallax two piece dial design 4½″ and 6″ sizes – Celcius or Fahrenheit. Single plane design for all dual scales and 8½″ size.

Ranges: Standard Fahrenheit ranges available from –320°F to 1200°F. Celsius and dual scale also available.

Cases: 5 basic cases with lower or back connections, surface or flush mounted in stainless steel, phenolic or aluminum. All remote mount cases are field interchangeable, within the same range. Direct mount units available 4½″ stainless steel case only. (Everyangle)

Direct Mount Stem Lengths: Four standard increment of semi-rigid stainless steel from 6 inches to 15 inches. (Consult factory for longer stem lengths.)

Direct Mount Union: ½ NPT union connection fixed at the top of the stem.

Operating Conditions: The maximum case temperature should not exceed 160°F (71°C). The line should be laid so that it will not be exposed to extreme temperatures such as nearby steam pipes, ovens or other heated surfaces.

Thermowells: Thermowells must be used on any application where the bulb of the thermometer may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchangeability or recalibration without shutting down the process.

Dials: Aluminum dials have highly legible black markings on a white background. The Maxivision dial is a linear anti-parallax dial for excellent readability in the 4½″ and 6″ sizes. The divisions and the pointer are in the same plane which allows readability from any angle without parallax error.

Windows: The standard window for the Duratemp thermometer is glass. Shatterproof glass and plastic disc windows are optional.

MERCURY FREE

Gas Filled: NIOSH and OSHA compliance for mercury contamination hazards. Protects personnel and processes from accidental contamination.

No Head or Elevation Error: Gear and pinion movements are eliminated, resulting in increased instrument life and reduced replacement costs.

Silicone damped Bourdon tube eliminates damage from shock and vibration.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com