

## Bimetal Thermometer

### FEATURES

- Robust hermetically sealed all SS unit
- External adjustment, EI and EL only
- Maxivision dial for precise readings (minimize parallax reading errors)
- Silicone dampened coil for vibration dampening and improved response time
- 5-Year warranty



### SPECIFICATIONS

Accuracy:	±1% of span ASME B40.200 (B40.3 Grade A)
Stem Length:	EI: 2" to 60" CI: 2" to 24" EL: 2" to 36"
Process Connection:	¼ NPT Fixed ½ NPT Fixed ½ NPT Union ½ NPT Adjustable Union Plain Pointed Plain (N/A for all configurations)
Stem diameter:	0.250"
Case & Stem:	304 SS, hermetically sealed
Connection Location:	Every Angle (3" & 5" only), Rear and Lower (N/A on 2")
Pointer:	Black
Window:	EI & CI: Heavy-duty glass, plastic or shatter-proof glass (OPT.). EL: Durable polycarbonate

### TEMPERATURE RANGES

Dual scales are available in 3" & 5" dial sizes in the following ranges:			
°F	°C	Inner (°F)	Outer (°C)
-80/120	-50/50	-80/120	-60/50
-20/120 <sup>(2)</sup>	-10/110	-40/120	-40/50
-40/120	-20/120	-40/160	-40/170
30/130 <sup>(2)</sup>		-20/120	-30/50 <sup>(2)</sup>
0/100 <sup>(2)</sup>	0/50 <sup>(1)</sup>		
0/200	0/100	0/200	-20/90
20/120 <sup>(2)</sup>	10/150 <sup>(1)</sup>		
0/250	0/200	0/250	-20/120
50/300	0/300 <sup>(1)</sup>	30/130	0/55 <sup>(2)</sup>
50/400	0/400	50/300	10/150
50/550	50/450 <sup>(1)</sup>	50/400	0/400
200/700 <sup>(1)</sup>	100/500 <sup>(1)</sup>	50/550	10/290
100/800 <sup>(1)</sup>		100/800	50/400 <sup>(1)</sup>
		200/700	100/370 <sup>(1)</sup>
200/1,000 <sup>(1)</sup>			
		200/1,000	100/550 <sup>(1) (3)</sup>

**EI Bimetal**  
3" dial size



**EI Bimetal**  
5" dial size



### LIQUID FILLED TEMPERATURE RANGES

°F	°C
-40/160	-40/100
-20/120 <sup>(2)</sup>	-20/120
30/130 <sup>(2)</sup>	-10/110
0/200	0/50 <sup>(2)</sup>
0/250	0/100
50/300	10/150
50/400	0/200
50/550	0/300

Liquid filled ranges are available as single scale or dual scale.

#### NOTES:

<sup>(1)</sup> Minimum stem length for these ranges is 4".

<sup>(2)</sup> Minimum stem length for lower connection and Everyangle is 4".

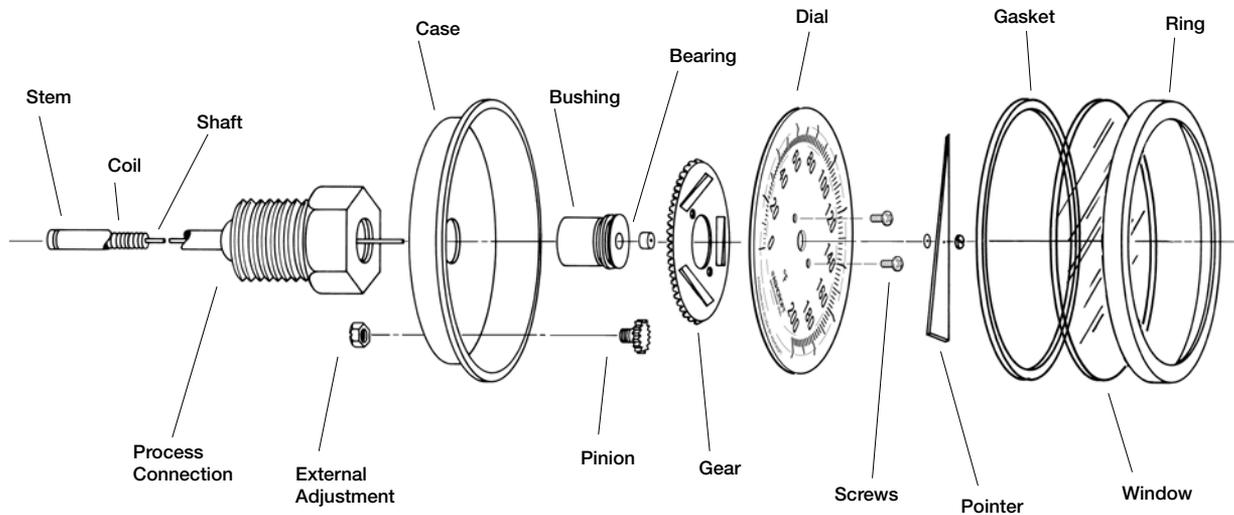
<sup>(3)</sup> Satisfactory for continuous service up to 800°F or 425°C. Can be used for intermittent service from 800 to 1000°F, or 425 to 500°C. Use Ashcroft Duratemp® thermometers for ranges above and below those listed above.

Contact factory for ranges not shown



ORDERING CODE	Example:	30CI	60	R	060	0/200°F	XSG
<b>Dial Size and Model</b>							
20CI - 2" Tamper resistant bimetal							
30CI - 3" Tamper resistant bimetal		30CI					
50CI - 5" Tamper resistant bimetal							
20EI - 2" External adjust bimetal							
30EI - 3" External adjust bimetal							
50EI - 5" External adjust bimetal							
30EL - 3" External adjust liquid filled bimetal							
50EL - 5" External adjust liquid filled bimetal							
<b>Stem and Connection</b>							
40 - Plain-no connection							
42 - ½ NPT Union (EL & EI every angle only)							
50 - Pointed stem - no connection							
60 - ½ Fixed NPT for 3 & 5" but ¼ fixed NPT for 2"			60				
70 - ½ NPT Adjustable Union (EL & EI every angle only)							
<b>Connection Location</b>							
R - Rear connection				R			
L - Lower connection, N/A on 2" or with EL							
E - Every angle connection (EL & EI only)							
<b>Stem Length</b>							
025 - 2½"							
040 - 4"							
060 - 6"					060		
090 - 9"							
120 - 12"							
150 - 15"							
180 - 18"							
240 - 24"							
<b>Temperature Ranges (see table on page 178)</b>							
0/200°F						0/200°F	
<b>Options - (if choosing an option(s) must include an "X")</b>							
C4 - Individual calibration certification							X_
CS - Dual scale							
DM - Dial marking							
NN - Paper tag							
NH - SS tag							
PD - Plastic window							
SG - Shatterproof glass							SG
3B - ⅜" stem diameter with ½ NPT							
02 - ¼ NPT when ½ NPT standard (only available on rear connection)							
S1 - Silicone free							
YW - 316 SS construction 5" EI/EL everyangle connection							

## Product Selection Information Bimetal Thermometers



**Warning:** When selecting all bimetal thermometers, consider the media and the ambient operating conditions. Improper application can be detrimental to the thermometer and can cause failure and possibly personal injury or property damage. Inaccuracies resulting from improper setting of the external adjustment by the user may cause personal injury or property damage. Consult ASME B40.200 (B40.3) for guidance in selection and use of bimetal thermometers.

**Temperature Ranges:** Standard Fahrenheit and Celsius ranges have been established to encompass all normal temperature measurement requirements. A bimetal thermometer can be used at an operating temperature anywhere throughout its dial range. Provision should be made for extreme temperature conditions. No bimetal thermometer should be exposed continuously to process temperatures over 800°F (425°C).

**Operating Conditions:** The maximum ambient temperature of the case should be no more than 200°F (95°C) or liquid-filled series 150°F (65°C). Temperatures beyond this value may cause discoloration of the dial or result in increased pressure inside the casing which would ultimately lead to failure of the window. The lowest ambient temperature should not exceed -40°F (-40°C).

**Thermowells:** Thermowells must be used on any application where the stem of the bimetal thermometer may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchange or calibration check without disturbing or closing down the process.

**Pointers:** The pointers are balanced to close tolerances, and the paint finishes are controlled to assure long-term stability under adverse ultraviolet conditions.

**Cases:** There are three case styles. The CI series has no adjustment but is hermetically sealed. The hermetic seal prevents entry of moisture into the casing, minimizing the possibility of icing or fogging inside the case. The EL series provides the same features as the EI plus the added benefit of liquid filling which prolongs instrument life. Potential wear problems caused by excessive vibration are minimized through dampening, and the liquid medium improves readability. The instruments are leak-tested to ensure the integrity of the joints. Case and stem material is 304 stainless steel.

**Coils:** The bimetallic coils are carefully wound and inspected. Each is heat treated for optimum stability and overtemperature capability. Coils are silicone dampened for improved vibration resistance. A silicone free option is available.

**Bearings:** The bearings are made of Teflon or other low-friction material.

**Shafts:** The shafts are made of specially drawn stainless steel wire with a very smooth finish.

**Dials:** The dials are based on computer-calculated temperature deflection data and have the Maxivision® format to minimize parallax error.

**Windows:** The standard window on EI and CI series are heavy-duty glass. Plastic and shatterproof glass are optional. The standard window on EL series is polycarbonate. No other options are available.

The complete line of Ashcroft® industrial bimetal thermometers and accessories provides quality choices for your temperature applications. There is a long history of superior quality in engineering, manufacturing and customer service of these products. Each Ashcroft industrial bimetal thermometer is backed by a limited five year warranty.

Each instrument is manufactured to a standard accuracy of ±1% of span (ASME B40.3, Grade A) traceable to the National Institute of Standards and Technology (NIST). The bimetal coils are heat treated for stability and overtemperature capability. A single helix is used to reduce lag time. The bearings are made of a low-friction long-life material. The shafts are made of specially drawn stainless steel with a very smooth finish. All joints are welded, and the weld between the stem and the outlet is located at the bottom of the threads to eliminate the possibility of crevice corrosion.

Silicone dampening is included for improved vibration resistance. The Ashcroft Maxivision® dial minimizes parallax error by placing the pointer in the same plane as the graduations. The dial can be rotated 360 degrees and can be angled 180 degrees with the Everyangle™ connection.

**Everyangle – Case Connection:** The Ashcroft Everyangle™ industrial bimetal thermometer dial face with Maxivision dial can be rotated 360 degrees and angled 180 degrees. It is available in the EI and EL (5" only in EL) series with either a threaded or compression type union connection.

This design provides maximum utility. Since the entire case can be rotated and angled, the instrument can be installed almost anywhere and adjusted so that the dial face can be easily read.