

# Bimetal Thermometer - Process Grade - All Stainless Steel Construction Type TI.31, 3" Dial Size - Bottom Connected

Datasheet TI.31

## Applications

- General process instrumentation in the chemical, petrochemical, oil and gas, energy and water/wastewater industries
- Temperature measurement in harsh and aggressive environments
- With liquid dampening suitable for applications with high vibrations

## Product features

- Process grade design
- Lower (bottom) connection with external reset
- All stainless steel case construction
- Hermetically sealed per ASME B40.3
- Accurate to 1% of full scale value
- Available with silicone case filling for vibration



## Specifications

### Size

3" (76.2 mm) Type TI.31

### Accuracy

± 1.0% full scale value per ASME B40.3, Grade 3A

### Ranges

From -100°F (-70°C) to +1000°F (+540°C)

From -50°C to +550°C (as single scale)

Reference table on page 2

### Working Range

Steady: full scale value

Short time: 110% of full scale value

### Over/Under Range Protection

≤ +500°F (+260°C): Temporary up to 50% of full scale

> +500°F (+260°C): Continuous to 800°F (+427°C)

Intermittant up to 1000°F (+538°C)

### Connection

Material: 304 stainless steel

Lower mount (LM), 1/2" NPT

### Stem

Material: 304 stainless steel

Diameter: 1/4" (6.35 mm)

Length: 2 1/2" to 72" (63.5 mm to 1,828.8 mm)

## Thermometer TI.31

### Measuring Element

Bi-metal helix

### Case

Material: 304 stainless steel

Hermetically sealed per ASME B40.3 standard

Weather protection NEMA 4X (IP 66)

External reset slotted hex head on back of case

### Dial

White aluminum, dished, with black markings

### Pointer

Black aluminum

### Standard Scales

Single: Fahrenheit or Celsius

Dual: Fahrenheit (outer) and Celsius (inner)

### Window Gasket

Neoprene

Silicone for ranges -100°F (-70°C) and

ranges > +550°F (+260°C)

### Dampening

Inert gel to minimize pointer oscillation

### Window

Flat instrument glass

### Weight

11 oz. (311 g) - 3" dial (76.2 mm)

Add 1 oz (28 g) for every 2" (50 mm) of stem length

## Optional Extras

- Thermowells
- Silicone fill
- Dampened Movement
- Special scales and dial markings
- Acrylic and safety glass windows
- Calibration certification traceable to NIST

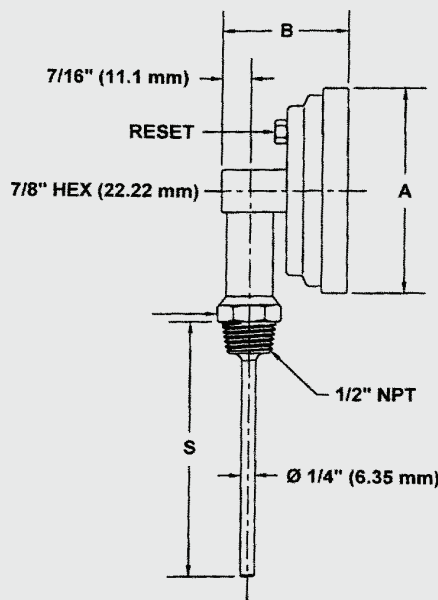
STANDARD RANGES		
Fahrenheit Single Scale	Dual Scale F & C F Outer, C Inner	Celsius Single Scale
-100/150 F	-100/150 F & -70/70 C	-50/50 C
-40/120 F	40/120 F & -40/50 C	-20/120 C
0/140 F	0/140 F & -20/60 C	0/50 C <sup>1</sup>
0/200 F	0/200 F & -15/90 C	0/100 C
0/250 F	0/250 F & -20/120 C	0/150 C
20/240 F	20/240 F & -5/115 C	0/200 C
25/125 F <sup>1</sup>	25/125 F & -5/50 C <sup>1</sup>	0/250 C
50/300 F	50/300 F & 10/150 C	0/300 C
50/400 F	50/400 F & 10/200 C	0/450 C <sup>2</sup>
50/550 F	50/500 F & 10/260 C	100/550 C <sup>2</sup>
150/750 F	150/750 F & 65/400 C	
200/1000 F <sup>2</sup>	200/1000 F & 100/540 C <sup>2</sup>	

<sup>1</sup> Minimum length 4" for Types 31, 34, 51, 52, 54

<sup>2</sup> Not recommended for continuous service over 800°F (425°C)

## Dimensions

### Standard versions



Stem Length
2½" (63.5 mm)
4" (101.6 mm)
6" (152.4 mm)
9" (228.6 mm)
12" (304.8 mm)
15" (381.0 mm)
18" (457.2 mm)
24" (609.6 mm)

WIKA Type	DIAL SIZE	A	B	S (Stem Length)
31	3" (76.2 mm)	3-1/4" (82.6 mm)	1-7/8" (47.6 mm)	As Specified

Note: Thermowells for temperature instruments are recommended for all process systems where pressure, velocity, or viscous, abrasive and corrosive materials are present individually or in combination. A properly selected thermowell protects the temperature instrument from possible damage resulting from these process variables. Furthermore, a thermowell permits removal of the temperature instrument for replacement, repair or testing without effecting the process media or the system.

### Ordering information

State computer part number (if available) /type number/size/range/connection size and locations/options required. WIKA reserves the right to make changes without prior notice.



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