

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: 2½" 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

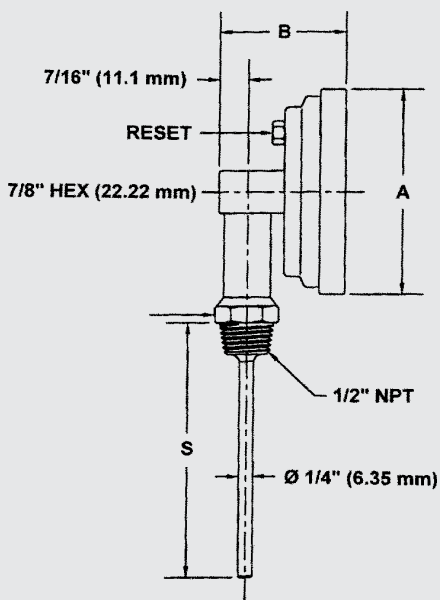
STANDARD RANGES		
Fahrenheit Single Scale	Dual Scale F & C F Outer, C Inner	Celsius Single Scale
-100/150 F	-100/150 F & -70/70 C	-50/50 C
-40/120 F	40/120 F & -40/50 C	-20/120 C
0/140 F	0/140 F & -20/60 C	0/50 C ¹
0/200 F	0/200 F & -15/90 C	0/100 C
0/250 F	0/250 F & -20/120 C	0/150 C
20/240 F	20/240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

¹ Minimum length 4" for Types 31, 34, 51, 52, 54

² 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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