

Bimetallic Temperature Gauge (TG-BM)

Precise Measurement of Temperature Guaranteed

Introduction

The bimetallic thermometer has a quick reacting bi-metal coil. It is manufactured from two cold-welded metal strips with different thermal expansion coefficients which rotate in proportion to temperature. The rotary movement is conveyed to the pointer taking care that the friction is minimum.

A comprehensive range of the standard version facilitates a variety of applications and uses. In addition, special versions are also manufactured to customer specifications.



This gauge is available in

Nominal sizes: 63 mm, 100 mm and 150 mm

Ranges: 0 to 60 deg. C up to 400 deg. C

Features

Compliance to latest EN 13190

Standard range: 0 to 60°C till 400°C

Overload capacity 110 % of FSD

Protection to IP67*

Accuracy class: tolerance class 1 as per EN 13190

Stainless steel casing

Dry or liquid filled version

External zero adjustment

Applications

Some industries where bimetallic temperature gauges are used are:

Chemical / petrochemical industry

Thermal / nuclear / hydro power stations

Pharmaceutical industry

Food processing industries / hygienic applications

Water treatment plants

Iron and steel industry

Rubber molding / processing plants

Hydraulics and pneumatics

Sugar / fertilizer industries

Refineries

Cryogenics

* Enclosure protection to IP67 for 100 and 150 mm dial size gauges only

Standard Product Specifications

Standards	Description
Reference standard	EN 13190
Mounting	Direct bottom entry
Connection	1/2" NPT (M)
Stem diameter	6 mm
Case and bezel	SS304 (Bayonet type bezel)
Stem	SS 316
Connection	SS 316
Sensing element	Bimetal coil
Dial	Aluminum, white background with black marking
Pointer	Aluminum, black color micrometer pointer with zero adjustable
Window	Toughened glass
Protection	IP67*
Filling plug	Neoprene
Gasket	Neoprene
Accuracy	Class 1 as per EN 13190 (as standard)
Dampening liquid**	Glycerin up to 65°C *
	Silicon oil -40 to 120°C *
Over pressure limit	110 % of full scale value
Ambient temperature	-25°C to +65°C
Process temperature	Max. 400°C (for dry gauge)
	Max. 120°C (for silicon oil filled gauges)

*For customer requests, please consult Forbes Marshall. Dampening liquid for only 63 mm dial size gauges

** Enclosure protection to IP67 for 100 and 150 mm dial sizes only

Temperature Range Details

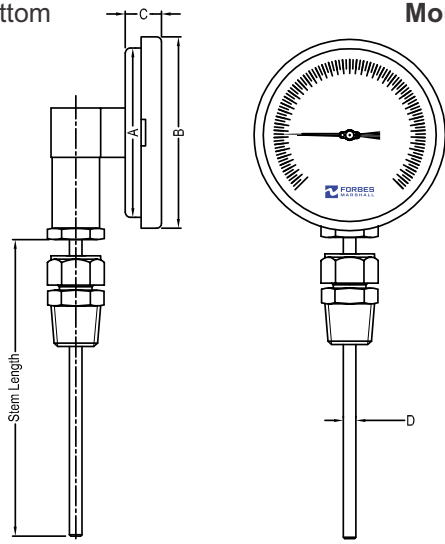
Immersion length vs. bulb diameter (Bulb)

Code	Temperature ranges in °C	Min. immersion length for bulb diameter 6 mm	Min. immersion length for bulb diameter 8 mm	Min. immersion length for bulb diameter 10 mm
A1	0 + 50	130	130	130
A2	0 + 60	120	120	120
A3	0 + 80	100	100	100
A4	0 + 100	90	90	90
A5	0 + 120	80	80	80
A6	0 + 150	70	80	70
A7	0 + 200	60	60	60
A8	0 + 250	60	60	60
A9	0 + 300	60	60	60
B0	0 + 400	50	50	50

*General note: While selecting the range for your temperature gauge, please take into account the relative immersion length required for proper sensing. The maximum length recommended for bimetallic temperature gauge should be taken as 700 mm

Product Drawing

Direct Bottom Mount

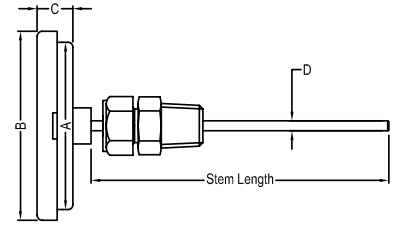
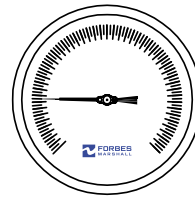


Mounting - 1

→ Parameters

Dial Size	A	B	C	D
100	100	110	21	6/8/9.5/10/12/14/16
150	150	160	21	6/8/9.5/10/12/14/16

Center Back Mount

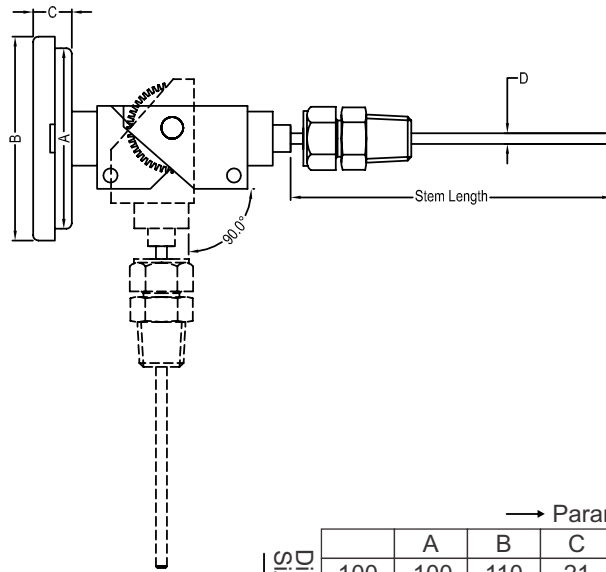
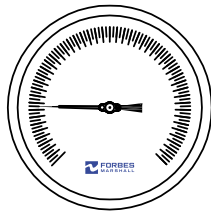


Mounting - 3

→ Parameters

Dial Size	A	B	C	D
100	100	110	21	6/8/9.5/10/12/14/16
150	150	160	21	6/8/9.5/10/12/14/16

Every Angle Mount



Mounting - 0

→ Parameters

Dial Size	A	B	C	D
100	100	110	21	6/8/9.5/10/12/14/16
150	150	160	21	6/8/9.5/10/12/14/16

Ordering Information

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Model	
Bimetallic (Adjustable connection)	BA
Bimetallic (Fixed connection)	BF

Dial Size	
63 mm	D
100 mm	E
150 mm	F

Mountings	
Every angle	0
Direct bottom	1
Center back	3

Connection Size	
1/4"	A
3/8"	B
1/2"	C
3/4"	D
M20x1.5P	1

Connection Type	
NPT (M)	A
BSP (M)	B
BSPT (M)	C
Metric thread (M)	M

Range*	A5**
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Engineering Unit**	
Degree celsius	
Dual scale celsius / fahrenheit	

*For ranges, please refer to the temperature range tables

**A dual scale with both Celsius and Fahrenheit can also be provided (standard Celsius ranges available in the range table).

Configurator Generated Code

Stem Diameter

6 mm (Standard)

8 mm

10 mm

Stem Length

300 mm (Standard)

100 mm To 700 mm with steps of 25 mm – please specify

Case and Bezel

SS 304 (Standard)

SS 316

Stem

SS 316 L

Connection

SS 316 (Standard)

Pointer

Fixed pointer (standard)

Window

Toughened glass (standard)

Safety laminated shatterproof glass

Optional Features

110 % of full scale reading(standard)

Dampening liquid silicon oil (upto 120°C)

External zero adjustment

Mirror scale dial for 6" dial size only

Tag marking on dial

SS tag plate

Epoxy painted case and bezel

Custom designed dial

Special requirement – please specify

Tests and Certificates

Three point calibration certificate (standard)

Five point calibration certificate*

NABL traceability Certificate

Material test certificate

EN10204 3.1.B certificate

Third party inspection

Special requirement – please specify

*0-60°C - 4 point

*Ordering example: BAE1CAA5A-0000 (standard code)

*General note: For special requirements, please consult Forbes Marshall.



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