

Bimetal Thermometers Process Industry Series, Model TB

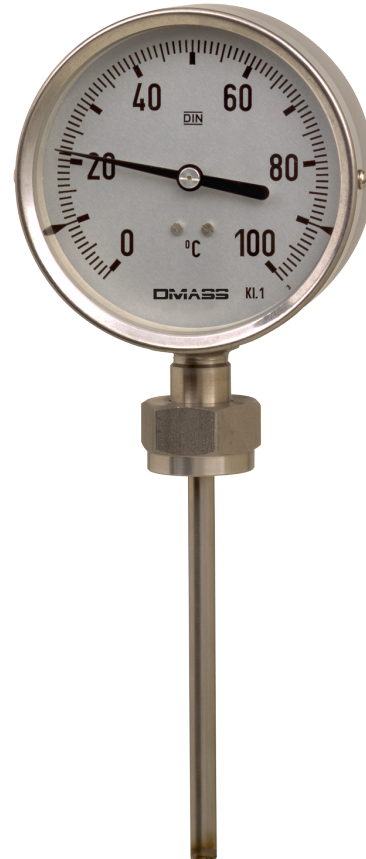


Applications

- Chemical industry, petrochemical industry, process technology and food industry
- For aggressive medium

Special Features

- Universal application
- Case and stem material stainless steel



Bimetal Thermometer Model TBB

Description

This series of thermometers is designed for installation in pipes, tanks, plants and machinery.

The stem and the case of the instrument are made of stainless steel. Various insertion lengths and process connections are available to match the requirements of any process optimally. Due to their high ingress protection (IP 65) and liquid damping these thermometers can be used in applications with extreme vibrations.

Standard version

Temperature element

Bimetal helix

Nominal size in mm

63, 100, 160

Design of connection

- S Standard (male thread connection)
- 1 Plain stem (without thread)
- 2 Male nut
- 3 Union nut
- 4 Compression fitting (sliding on stem)
- 5 Union nut with fitting

Location of stem

- TBU centre back (axial)
- TBB bottom (radial)
- TBS centre back, adjustable stem and dial

Accuracy class

DIN EN 13 190

Working range

Normal (1 year): Measuring range (DIN EN 13 190)
 Short time (24 h max.): Scale range (DIN EN 13 190)

Case and cam ring (bayonet type)

Stainless steel

Stem and process connection

Stainless steel 1.4571

Scale range, measuring range, error limit (DIN EN 13 190)

Scale graduation per DMASS standard

Scale range in °C	Scale spacing in °C	Measuring range ¹⁾ in °C	Error limit in °C
-70 ... +30	1	-60 ... +20	1
-50 ... +50	1	-40 ... +40	1
-30 ... +50	1	-20 ... +40	1
-20 ... +60	1	-10 ... +50	1
0 ... 60	1	10 ... 50	1
0 ... 80	1	10 ... 70	1
0 ... 100	1	10 ... 90	1
0 ... 120	2	10 ... 110	2
0 ... 160	2	20 ... 150	2
0 ... 200	2	20 ... 180	2
0 ... 250	5	30 ... 220	2.5
0 ... 300	5	30 ... 270	5
0 ... 400	5	50 ... 350	5
0 ... 500	5	40 ... 450	5
0 ... 600	10	100 ... 500	10

Models

Version		Nominal size			Design					
		63	100	160	S	1	2	3	4	5
Model TBU and TBB	axial, lower back	x	x	x	x	x	x	x	x	x
	radial, bottom	x	x	x	x	x	x	x	x	x
Model TBS	adjustable stem/dial	-	x	x	-	x	x	x	x	x

Dial

Aluminium white, lettering black

Window

Instrument glass

Pointer

Aluminium, black, micro adjustable pointer

Zero adjustment

on case back side, external only adjustable stem/dial (option)

Pressure rating of stem

max. 25 bar, static

Ambient temperature limit at the case

+60 °C max. (others on request)

Ingress protection

IP 65 per EN 60 529

Options

- Scale range °F, °C / °F (dual scale)
- Liquid damping to 250 °C max. (at stem)
- Window of laminated safety glass or acrylic plastic
- Stem diameter 6, 8, 10 mm
- Ingress protection IP 66
- Thermometers with switch contacts
- Special temperature range or dial printing to customer specifications (on request)

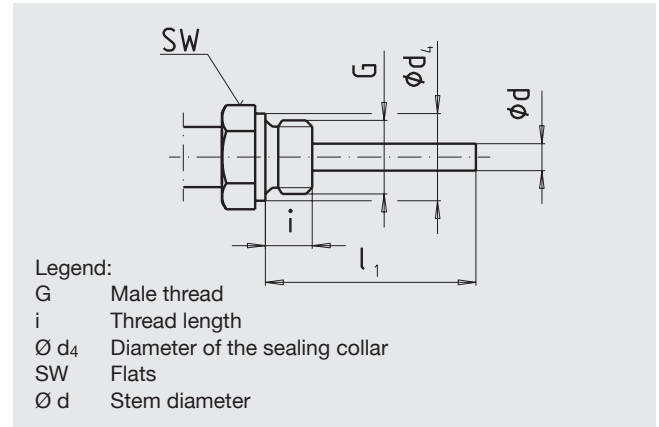
Design of connection

Design standard

Connection, male: G 1/2 B, G 3/4 B, 1/2 NPT, 3/4 NPT

Stem lengths: $l_1 = 63, 100, 160, 200, 250$ mm

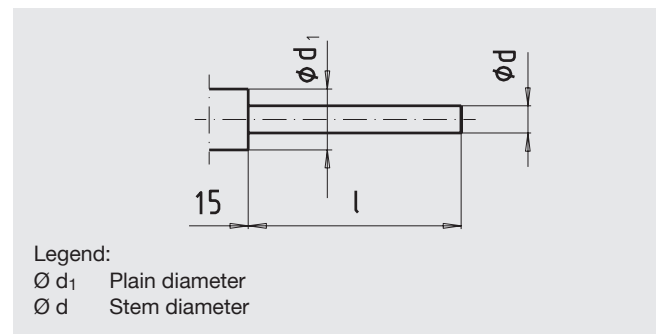
Nominal size NS	Process connection		Dimensions in mm		
	G	i	SW	d_4	$\varnothing d$
63, 100, 160	G 1/2 B	14	27	26	8
	G 3/4 B	16	32	32	8
	1/2 NPT	19	22	-	8
	3/4 NPT	20	30	-	8



Design 1, plain stem (without thread)

Stem lengths: $l = 140, 200, 240, 290$ mm

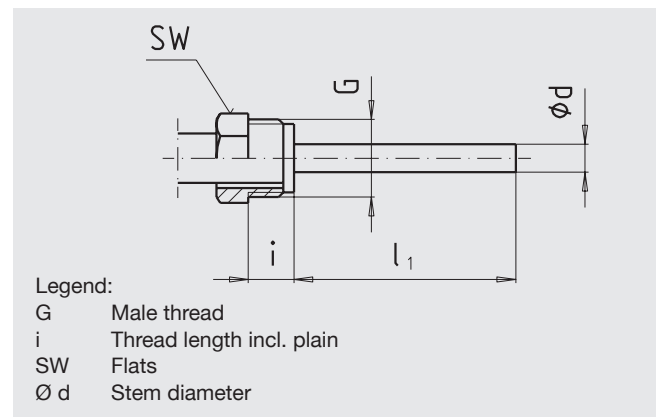
Nominal size NS	Dimensions in mm	
	d_1	$\varnothing d$
63	14	8
100, 160	18	8



Design 2, male nut

Stem lengths: $l_1 = 80, 140, 180, 230$ mm

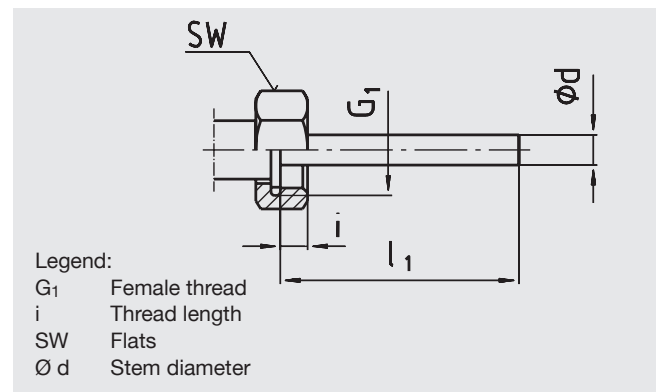
Nominal size NS	Process connection		Dimensions in mm	
	G	i	SW	$\varnothing d$
63, 100, 160	G 1/2 B	20	27	8



Design 3, union nut

Stem lengths: $l_1 = 89, 126, 186, 226, 276$ mm

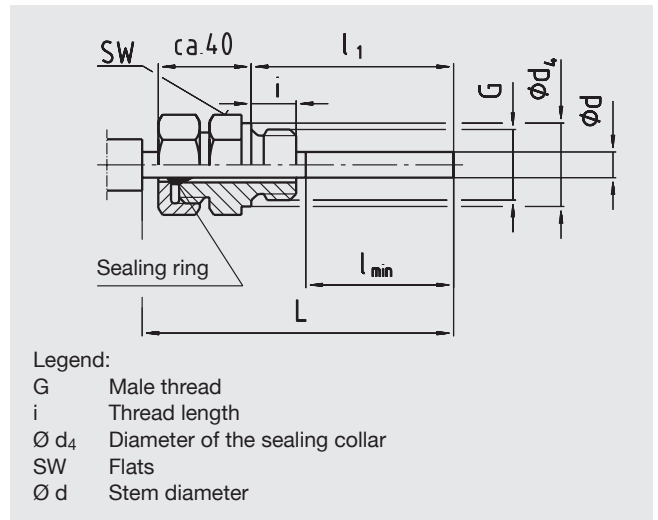
Nominal size NS	Process connection		Dimensions in mm	
	G_1	i	SW	$\varnothing d$
63, 100, 160	G 1/2	8.5	27	8
	G 3/4	10.5	32	8
	M24 x 1.5	13.5	32	8



Design 4, compression fitting (sliding on stem)

Minimum insertion depth l_{min} approx. 60 mm
 Standard stem lengths: $l_1 = 63, 100, 160, 200, 250$ mm
 Lengths $L = l_1 + 40$ mm

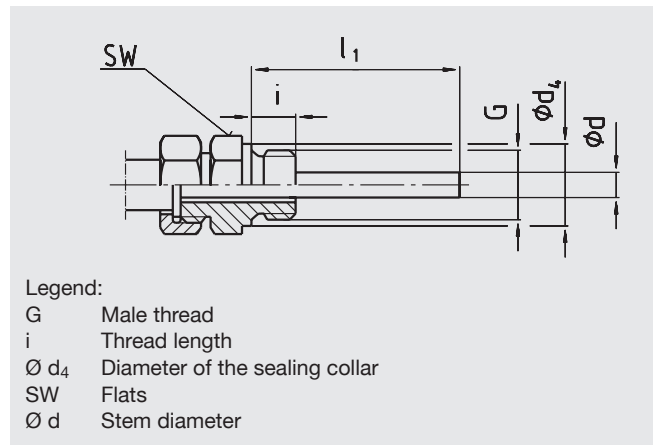
Nominal size NS	Process connection		Dimensions in mm		
	G	i	SW	d_4	$\varnothing d$
63, 100, 160	G 1/2 B	14	27	26	8
	G 3/4 B	16	32	32	8
	M18 x 1.5	12	24	23	8
	1/2 NPT	19	22	-	8
	3/4 NPT	20	30	-	8



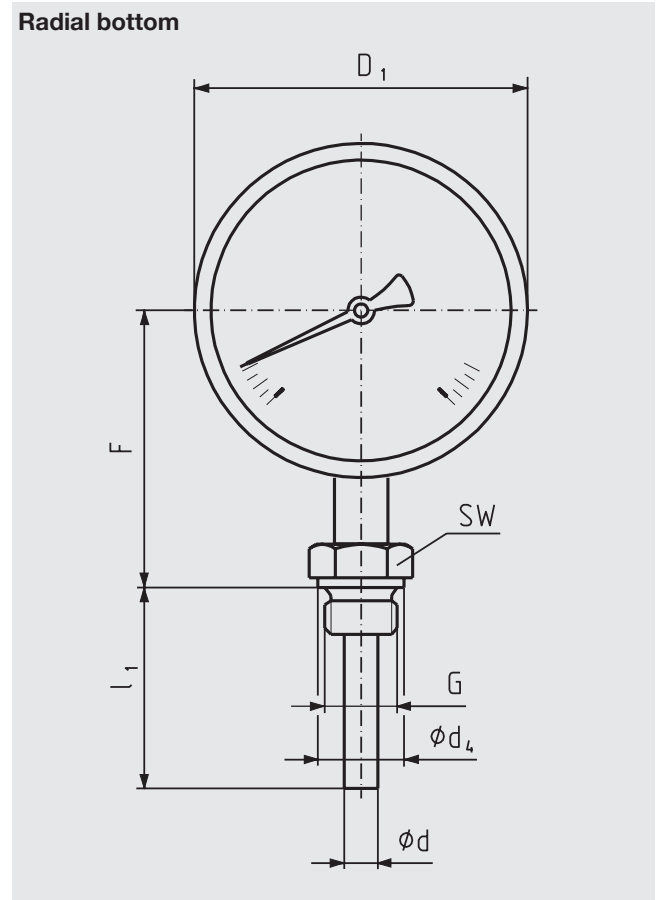
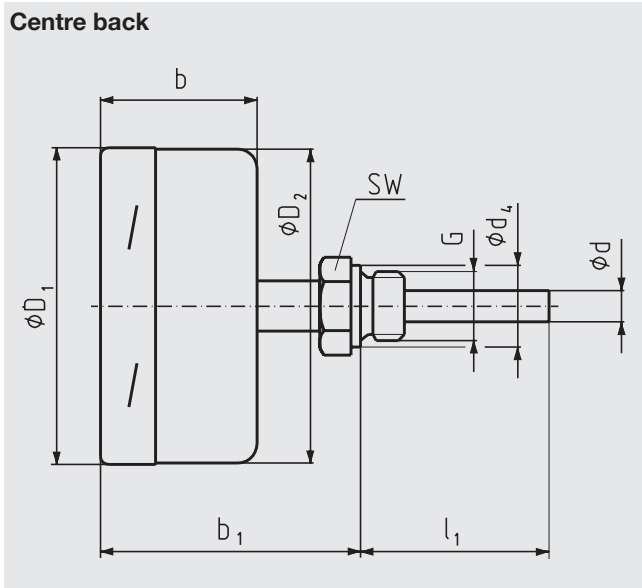
Design 5, union nut with fitting

G 1/2 B, G 3/4 B, M18 x 1.5 as well as 1/2 NPT, 3/4 NPT
 Minimum insertion depth l_{min} approx. 60 mm
 Stem lengths $l_1 =$ variable
 Lengths $L = l_1 + 40$ mm
 Stainless steel 1.4571

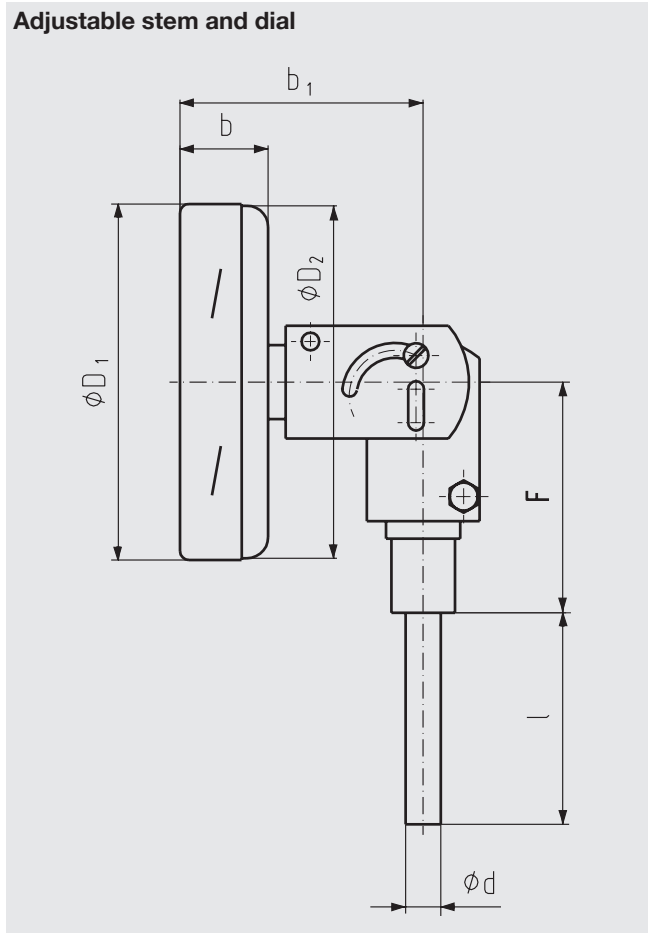
Nominal size NS	Process connection		Dimensions in mm		
	G	i	SW	d_4	$\varnothing d$
63, 100, 160	G 1/2 B	14	27	26	8
	G 3/4 B	16	32	32	8
	M18 x 1.5	12	24	23	8
	1/2 NPT	19	22	-	8
	3/4 NPT	20	30	-	8



Dimensions in mm



NS	Dimensions in mm								Weight in kg		
	b	b ₁	d ¹⁾	d ₄	Ø D ₁	Ø D ₂	F	G	SW	Model TBU	Model TBB
63	35	60	8	26	64	62	57	G ½ B	27	0.25	0.25
100	50	83	8	26	101	99	83	G ½ B	27	0.8	0.8
160	50	83	8	26	161	159	113	G ½ B	27	1.1	1.1



NS	Dimensions in mm						Weight in kg Model TBS
	b	b ₁	d ¹⁾	Ø D ₁	Ø D ₂	F	
100	25	68	8	101	99	68	0.5
160	25	68	8	161	159	68	0.7

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