

Bimetal Thermometers, Every Angle

Crimped-on ring case stainless steel, turnable and adjustable

TBiGelChg
TBiGelChgG

Standard Versions

This data sheet contains detailed information on our standard versions and available options. In overview 8000 you will find additional information on selection, metrological features, permissible ambient and storage temperatures as well as error limits, etc. Information on the metrologically optimal design of thermometers can be found in our technical information sheet T08-000-031.

Measuring Unit

Bimetal coil

Accuracy (DIN EN 13 190)

Class 1

Case

With polished crimped-on ring, stainless steel 1.4301 (304)

Degree of Protection (DIN EN 60 529/IEC 529)

IP65

Case Filling

For model TBiGelChgG

Temperature ranges:

from -20 °C up to +100 °C: glycerin

from -40 °C and above +100 °C up to +250 °C: silicone oil

Nominal Case Sizes

63, 80, 100, 125, 160 mm (2 ½, 3, 4, 5, 6")

Case Configuration

Connection temperature

sensor (stem):

pivot (every angle)

Stem position:

centre back position,

compared to case approx.

135° adjustable and 360° turnable

Mounting device:

without

Temperature Ranges (DIN EN 13 190)

Temperature differences from 60 K up to 600 K

Temperature Sensor (Stem)

Made of stainless steel 1.4571 (316Ti)

Max. static operating pressure: 25 bar

Stem models:

B1, B3, B4, B4.1, B5 or B6

Stem Ø dF:

6 or 8 mm

Stem length L:

from Lmin or L1min up to 400 mm

Please regard the minimum stem length depending on active length (La) and stem model, see page 3

Window

Instrument glass

Dial

Aluminum white, scale black

Pointer

Aluminum black

Indication Adjustment (±4 %)

Externally via screw



Ordering Information, Standard Ranges, Options

See page 4

Special Versions and Further Options

- Other connection threads and materials upon request
- Other temperature ranges and/or special scales, e.g. dual scale °C/°F, coloured fields or ranges, dial inscriptions
- Case parts stainless steel 1.4404 (316L) upon request
- Model TBiGelChg for ambient temperatures to -60 °C
- Model TBiGelChgG for ambient temperatures to -40 °C to -60 °C NCS 100, 125 and 160
- GOST version for Russia, Ukraine, Kazakhstan, Belarus

Thermowells

See data sheets 8.8110 ff.



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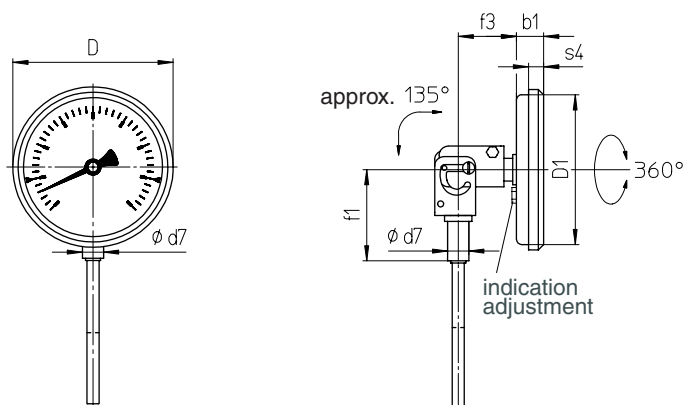
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Stem Position, Dimensional Data and Weights

Centre Back Stem Position, with Pivot (Every Angle)

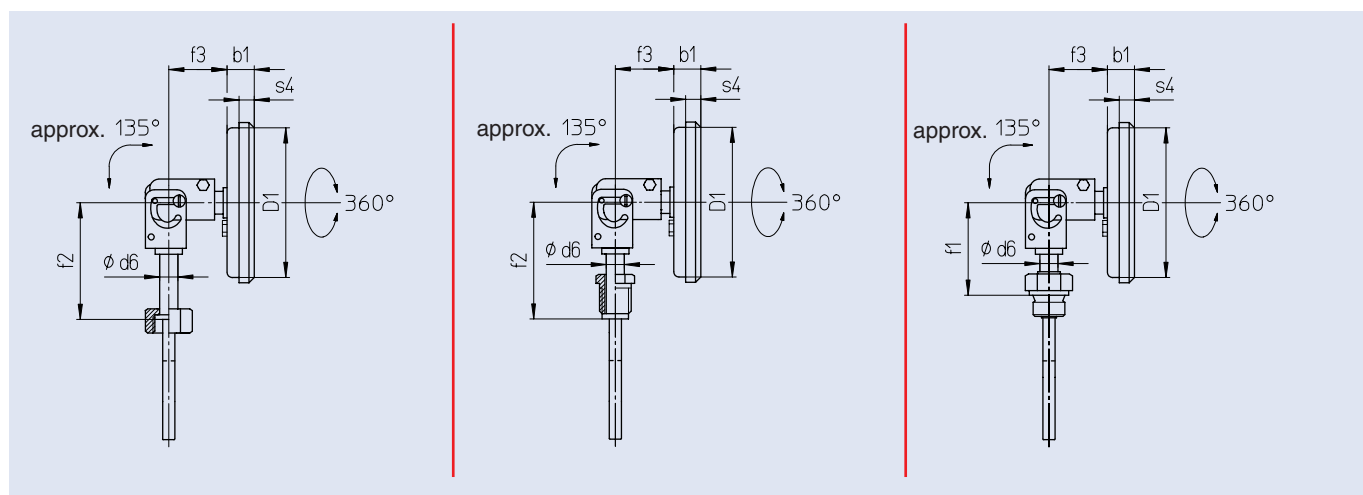
Stem model B1 (also B5)



Stem model B3 (also B6)

Stem model B4

Stem model B4.1

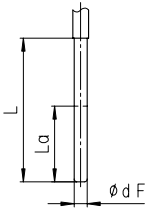
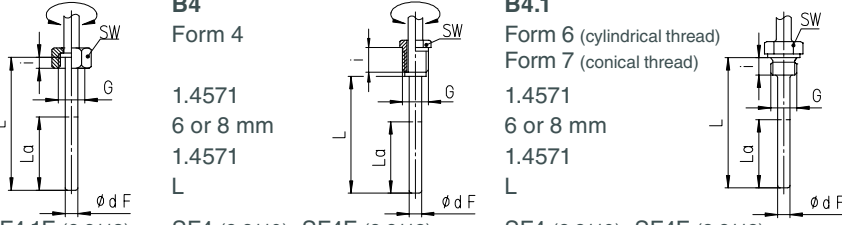
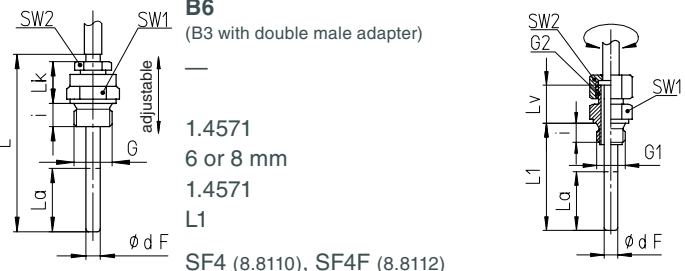


Dimensional Data (mm) and Weights (kg)

NCS	b1	D	D1	d6	d7	f1 ¹⁾	f2 ¹⁾	f3	s4	approx. weight ²⁾	
										TBiGelChg	TBiGelChgG
63	17	67	62	12	14	63	80	40	8	0.28	0.31
80	18	86	79	12	14	63	80	40	8	0.32	0.37
100	18	106	98	12	14	63	80	40	10	0.39	0.46
125	20	136	125	12	14	63	80	40	11	0.49	0.65
160	21	167	159	12	14	63	80	40	11	0.64	0.84

¹⁾ Temperature ranges ≥ 400 °C: extended dimension for small stem lengths, see T08-000-031
²⁾ The data are examples and relate to the version with stem B1, Ø 8 mm, length 100 mm.

Stem Models

Stem Models											
Process connection:		Without screw fitting, plain stem									
Stem model:	B1										
Form acc. to DIN EN 13 190:	Form 1										
Stem material:	1.4571										
Stem Ø dF:	6 or 8 mm										
Order length:	L										
Suitable thermowell models: (data sheet)	SK1 (8.8140), SK2 (8.8141) SK3.B (8.8150), SK4.B (8.8151)										
											
Process connection:		Union nut			Male thread, turnable			Male thread, rigid			
Stem model:	B3										
Form acc. to DIN EN 13 190:	Form 5										
Stem material:	1.4571										
Stem Ø dF:	6 or 8 mm										
Screw fitting material:	1.4571										
Order length:	L										
Suitable thermowell models: (data sheet)	SF4.1 (8.8111), SF4.1F (8.8113) SF8 (8.8130), SF9 (8.8131)			SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)			SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)				
											
Thread (dimensional data in mm):	G	SW	i	G	SW	i	G	SW	i		
	G 1/2	27	10	G 1/2 B	22	20	G 1/2 B	27	14		
	G 3/4	32	12	G 3/4 B	27	23	G 3/4 B	32	16		
	M20x1.5	27	10	M18x1.5	22	14	1/2" NPT	27	19		
	M24x1.5	32	12	M20x1.5	22	20	3/4" NPT	27	19		
	M27x2	32	12	Thermowell required!			M18x1.5	24	14		
							M20x1.5	27	14		
Process connection:		Male thread/compression fitting				Male thread, turnable/double male adapter					
Stem model:	B5										
	(B1 with compression fitting)										
Form acc. to DIN EN 13 190:	Form 2 (cylindrical thread) Form 3 (conical thread)										
Stem material:	1.4571										
Stem Ø dF:	6 or 8 mm										
Screw fitting material:	1.4571										
Order length:	L										
Suitable thermowell models: (data sheet)	SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)				SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)						
											
Thread (dimensional data in mm):	G	SW1	SW2	i	Lk	G1	G2	SW1	SW2	i	Lv
	G 1/2 B	27	22	14	42	G 1/2 B	G 1/2 B	27	27	14	28
	G 3/4 B	32	22	16	42	G 3/4 B	G 1/2 B	32	27	16	28
	1/2" NPT	27	22	19	42	1/2" NPT	G 1/2 B	27	27	19	28
	3/4" NPT	27	22	19	42	3/4" NPT	G 1/2 B	27	27	19	28
	M20x1.5	27	22	14	42	M20x1.5	M20x1.5	27	27	14	28
						M24x1.5	M20x1.5	32	27	14	28
						M27x2	M20x1.5	32	27	16	28
Minimum Stem Length and Active Length (mm)											
			Stem Ø dF:								
			6		8						
			Span ΔT¹⁾								
Stem model:	Length:	Thread:	≥ 100 K	= 80 K	= 60 K	≥ 80 K	= 60 K				
all models	L _a	all standard threads	40	60	70	40	60				
B1 / B4	L _{min}	all standard threads	45	65	75	45	65				
B3	L _{min}	all standard threads	52	72	82	52	72				
B4.1	L _{min}	all standard threads	60	80	90	60	80				
B5	L _{min}	all standard threads	95	115	125	95	115				
B6	L _{1min}	all standard threads	60	80	90	60	80				
others			upon request			upon request					
<p>The minimum length L_{min}/L_{1min} is the smallest feasible stem length. Important: Please note the technical information sheet T08-000-031 on the metrologically optimal stem length.</p> <p>The active length L_a is the temperature-sensitive part of the stem.</p>											

¹⁾ The temperature difference (span) ΔT = 60 K corresponds e.g. to the temperature range 0–60 °C, but also to –20/+40 °C, see table page 4.

Ordering Information

Basic Model: Bimetal Thermometer Every Angle		TBiGelChg
Case filling:	without depending on version: glycerin or silicone oil	without code letters G
Nominal case size:	case Ø 63, 80, 100, 125, 160 mm (2½, 3, 4, 5, 6")	63, 80, 100, 125, 160
Stem position/ case configuration:	centre back position, with pivot (every angle)	without code letters
Temperature ranges:	scale: ΔT (K):	
	0 – 60 °C 60	
	0 – 80 °C 80	
	0 – 100 °C 100	e.g. 0–100 °C
	0 – 120 °C 120	
	0 – 160 °C 160	
	0 – 200 °C 200	
	0 – 250 °C 250	
	0 – 300 °C 300	
	0 – 400 °C 400	
	0 – 500 °C 500	
	0 – 600 °C 600	
	–50 / +50 °C 100	
	–40 / +40 °C 80	
	–40 / +60 °C 100	
	–30 / +50 °C 80	e.g. –30/+50 °C
	–30 / +70 °C 100	
	–20 / +40 °C 60	
	–20 / +60 °C 80	
	–20 / +80 °C 100	
	50 – 300 °C 250	
Stem:	without screw fitting, plain stem	B1
	union nut	B3
	male thread, turnable	B4
	male thread, rigid	B4.1
	male thread/compression fitting	B5
	male thread, turnable/double male adapter	B6
Stem Ø dF:	6 or 8 mm	dF 6, 8
Stem length:	L or L1 in mm	e.g. L = 100 mm
Process connection:	see page 3	e.g. G½B
Options:	red mark on the dial	
	plastic clip red or green, external at crimped-on ring for NCS 80, 100, 125, 160	
	window tempered safety glass for NCS 80, 100, 125 and 160	
	acrylic glass (PMMA) for NCS 80 and 100	
	polycarbonate (PC) NCS 63, 80 and 100	
	case polished	
	stem Ø dF 10 mm	
	case filling temperature ranges from –20 °C up to +100 °C: silicone oil	
	stem length >400 mm, max. 800 mm	
	instrument tag stainless steel plate 12 x 55 mm (0.47 x 2.17") with wire mounting or sticker upon the case	

Example:

TBiGelChg 80, 0–100 °C, B3, dF 8, L = 100 mm, G½

Special Versions: Please describe your requirements in cleartext!