

Bimetal Thermometer, Rigid Mount

TBiSch

Bayonet ring case stainless steel

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 bayonet ring, stainless steel 1.4301 (304)

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

IP65

Nominal Case Sizes

63, 100, 160 mm (2½, 4, 6")

Case Configuration

Connection temperature sensor (stem):

- rigid mount with neck tube

Stem position:

- vertical bottom position
- centre back position (**rm**):
for stem B1 and B4.1 without neck tube

Mounting device:

- without
- for centre back connection:
back flange for surface mounting (**rmRh**)

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

Adjustable pointer aluminum black

Indication Adjustment (±4 %)

Bottom stem position: via adjustable pointer

Centre back stem position: 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
- For ambient temperatures to -60 °C upon request
For ambient temperatures below -20 °C we recommend: thermometer with crimped-on ring case models TBiSchG or TBiSchGg
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock, others upon request or other than vertical installation (90°)
- GOST version for Russia, Ukraine, Kazakhstan, Belarus

Thermowells

See data sheets 8.8110ff.

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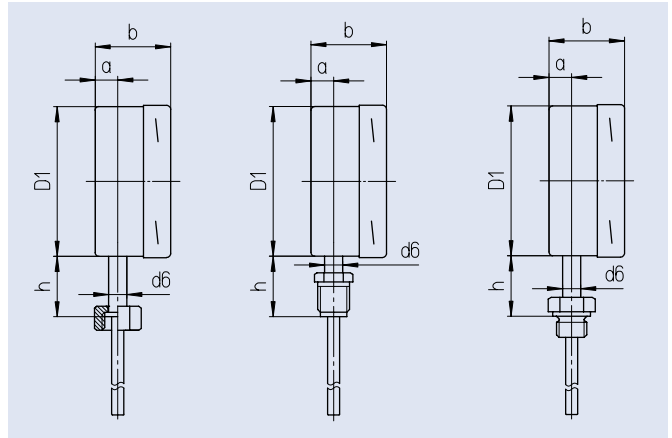
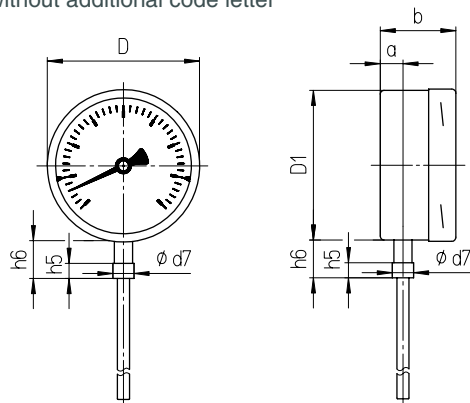
Stem Position, Code Letters, Dimensional Data and Weights

Vertical Bottom Stem Position

Stem model B1 (also B5)

Stem model B3 (also B6) Stem model B4 Stem model B4.1

without additional code letter



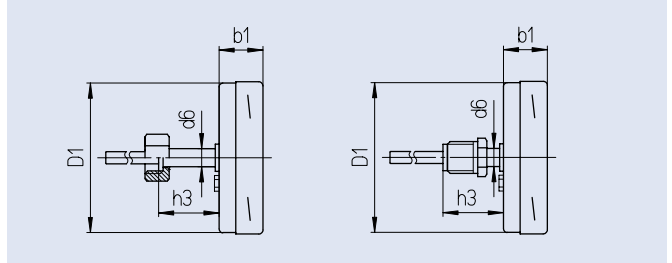
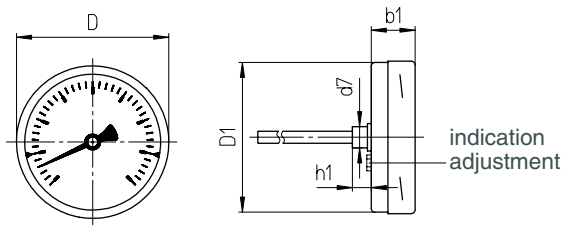
Centre Back Stem Position

Stem model B1 (also B5)

Stem model B3 (also B6)

Stem model B4

code letters **rm**

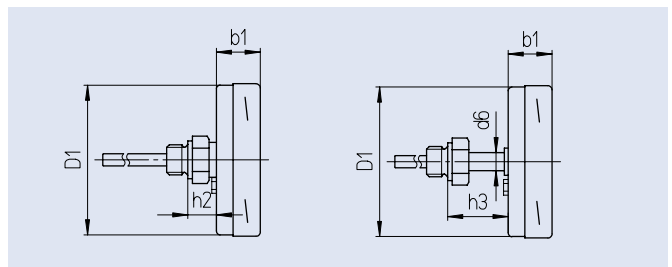


Stem model B4.1

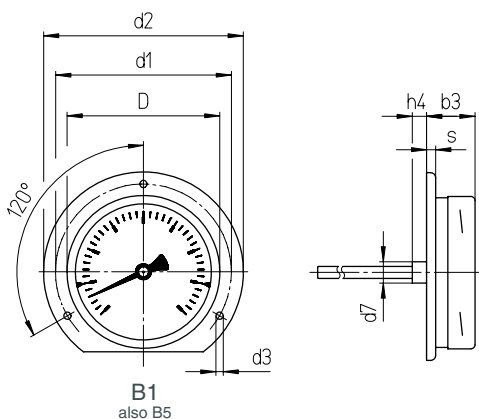
without neck tube (standard)

Stem model B4.1

with neck tube (option)



with back flange for surface mounting,
code letters **rmRh**



Dimensional Data (mm) and Weights (kg)

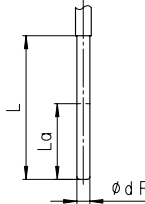
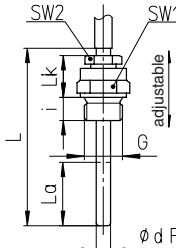
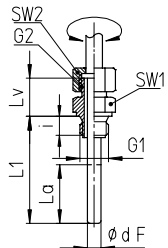
NCS	a	b	b1	b3	D	D1	d1	d2	d3	d6	d7	h ¹⁾³⁾	h1 ³⁾	h2 ³⁾	h3 ¹⁾³⁾	h4 ³⁾	h5	h6 ³⁾	approx. weight ²⁾ TBiSch
63	12	47.5	26	29	64	62	75	85	3.6	12	14	40	12.5	19	40	9.5	10.5	25	0.18
100	15	55	28	31.5	101	99	116	132	4.8	12	14	40	12.5	19	40	9	10.5	25	0.35
160	15	55	27	30	161	159	178	196	5.8	12	14	40	12.5	19	40	9.5	10.5	25	0.65

¹⁾ Stem model B4 with G¾B: 50 mm

²⁾ The data are examples and relate to the version with stem B1, Ø 8 mm, length 100 mm.

³⁾ Temperature ranges ≥ 400 °C: extended neck tube for small stem lengths, see T08-000-031

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			B4			B4.1							
Form acc. to DIN EN 13 190:	Form 5			Form 4			Form 6 (cylindrical thread) Form 7 (conical thread)							
Stem material:	1.4571			1.4571			1.4571							
Stem Ø dF:	6 or 8 mm			6 or 8 mm			6 or 8 mm							
Screw fitting material:	1.4571			1.4571			1.4571							
Order length:	L			L			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				M18x1.5	24	14				
								M20x1.5	27	14				
								Thermowell required!						
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		
Process connection:		Male thread/compression fitting				Male thread, turnable/double male adapter								
Stem model:	B6													
	(B3 with double male adapter)													
Form acc. to DIN EN 13 190:	—													
Stem material:	1.4571													
Stem Ø dF:	6 or 8 mm													
Screw fitting material:	1.4571													
Order length:	L1													
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)							
														
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	La	all standard threads	40	60	70	40	60							
B1 / B4	Lmin	all standard threads	45	65	75	45	65							
B3	Lmin	all standard threads	52	72	82	52	72							
B4.1	Lmin	all standard threads	60	80	90	60	80							
B5	Lmin	all standard threads	95	115	125	95	115							
B6	L1min	all standard threads	60	80	90	60	80							
others			upon request			upon request								
			The minimum length Lmin/L1min is the smallest feasible stem length.						The active length La is the temperature-sensitive part of the stem.					
			Important: Please note the technical information sheet T08-000-031 on the metrologically optimal stem length.											

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 Rigid Mount to the Stem		TBiSch
Case filling:	without	without code letters
Nominal case size:	case Ø 63, 100, 160 mm (2½, 4, 6")	63, 100, 160
Stem position/ case configuration:	vertical bottom position	without code letters
	centre back position	rm
	centre back position, with back flange for surface mounting	rmRh
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. G ½ B
Options:	red mark on the dial	
	plastic clip red or green, external at the bayonet ring for NCS 100, 160	
	window laminated safety glass	
	acrylic glass (PMMA)	
	polycarbonate (PC)	
	case polished	
	bayonet ring polished	
	neck tube for stem B4.1 and centre back connection	
	stem Ø dF 10 mm	
	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:

TBiSch 160rm, 0–100 °C, B3, dF 6, L = 100 mm, G ½

Special Versions: Please describe your requirements in cleartext!