

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 304 (1.4301)

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 316Ti (1.4571)

Max. static

operating pressure: 25 bar

Stem models: B1, B3, B4, B4.1, B5 or B6

Stem Ø dF: 6 or 8 mm (0.24 or 0.31")

Stem length L: from Lmin or L1min up to 400 mm (15.75")

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 316L (1.4404) upon request
- For ambient temperatures to -60 °C (-76 °F) upon request
- For ambient temperatures below -20 °C (-4 °F) 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, Kazakhstan

Thermowells

See data sheets 8.8110ff.

www.armano-messtechnik.com

ARMANO

ARMANO Messtechnik GmbH

Location Beierfeld

Am Gewerbepark 9 • 08344 Grünhain-Beierfeld
Tel.: +49 3774 58 - 0 • Fax: +49 3774 58 - 545
mail@armano-beierfeld.com

Location Wesel

Manometerstraße 5 • 46487 Wesel-Ginderich
Tel.: +49 2803 9130 - 0 • Fax: +49 2803 1035
mail@armano-wesel.com

8101

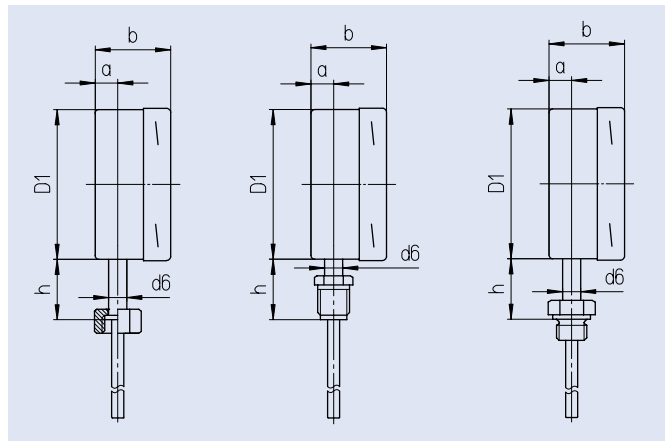
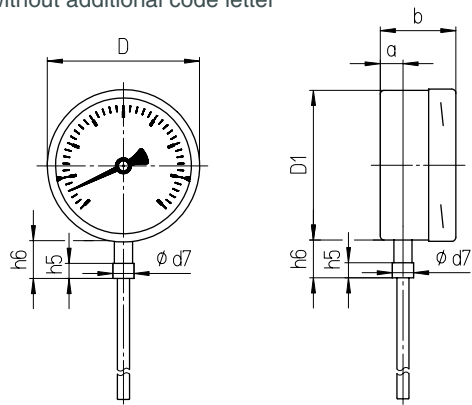
08/20

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

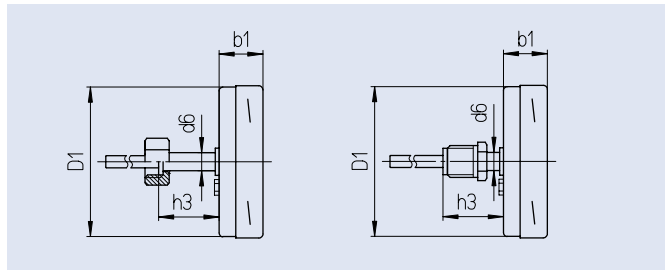
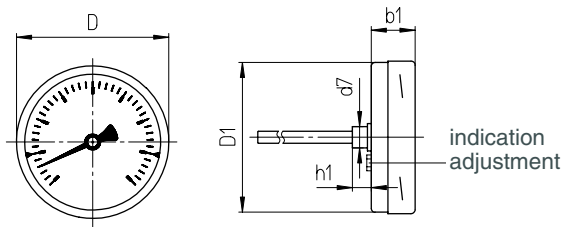
without additional code letter



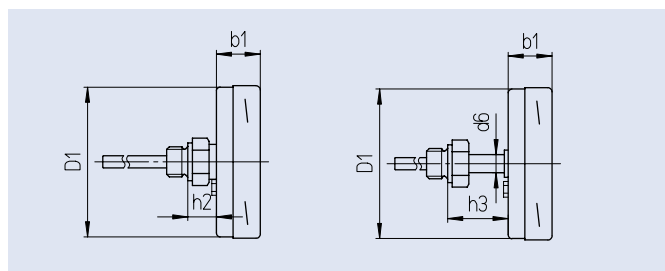
Centre Back Stem Position

Stem model B1 (also B5) Stem model B3 (also B6) Stem model B4

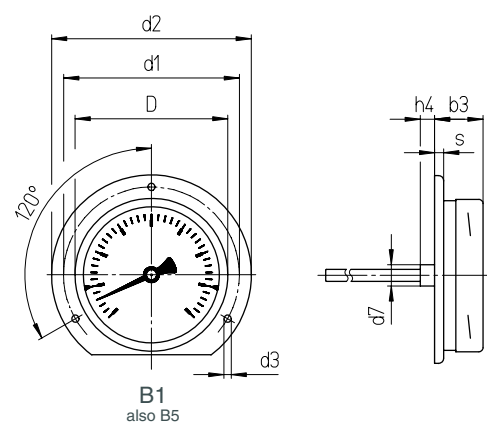
code letters **rm**



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/inch) and Weights (kg/lb)

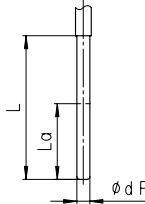
NCS	a	b	b1	b3	D	D1	d1	d2	d3	d6	d7	h ¹⁾³⁾	h1 ³⁾	h2 ³⁾	h3 ¹⁾³⁾	h4 ³⁾	h5	h6 ³⁾	approx. weight ²⁾ TBiSch
63 2½"	12 0.47	47.5 1.87	26 1.02	29 1.14	64 2.52	62 2.44	75 2.95	85 3.35	3.6 0.14	12 0.47	14 0.55	40 1.57	12.5 0.49	19 0.75	40 1.57	9.5 0.37	10.5 0.41	25 0.98	0.18 0.4
100 4"	15 0.59	55 2.17	28 1.1	31.5 1.24	101 3.98	99 3.9	116 4.57	132 5.2	4.8 0.19	12 0.47	14 0.55	40 1.57	12.5 0.49	19 0.75	40 1.57	9 0.35	10.5 0.41	25 0.98	0.35 0.77
160 6"	15 0.59	55 2.17	27 1.06	30 1.18	161 6.34	159 6.26	178 7.01	196 7.72	5.8 0.23	12 0.47	14 0.55	40 1.57	12.5 0.49	19 0.75	40 1.57	9.5 0.37	10.5 0.41	25 0.98	0.65 1.43

¹⁾ Stem model B4 with G¾B: 50 mm (1.97")
²⁾ The data are examples and relate to the version with stem B1, Ø 8 mm (0.31"), length 100 mm (3.94").
³⁾ Temperature ranges ≥ 400 °C (>752 °F): extended neck tube for small stem lengths, see T08-000-031

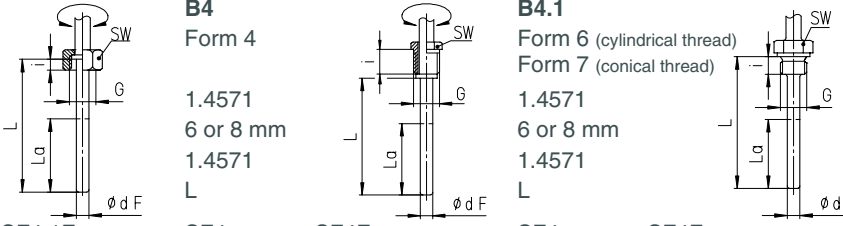
Stem Models

Stem Models

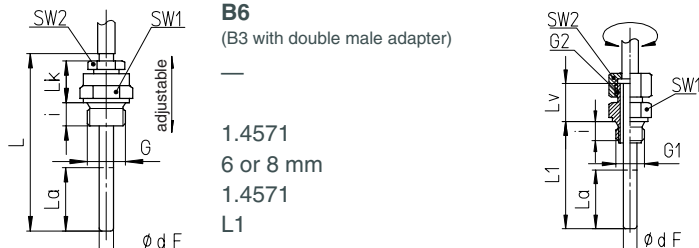
Process connection:	Without screw fitting, plain stem	
Stem model:	B1	
Form acc. to DIN EN 13 190:	Form 1	
Stem material:	1.4571	
Stem Ø dF:	6 or 8 mm	
Order length:	L	
Suitable thermowell models: (data sheet)	SK1 (8.8140), SK2 (8.8141) SK3.B (8.8150), SK4.B (8.8151)	



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																																																						
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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)																																																						
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Process connection:	Male thread/compression fitting	Male thread, turnable/double male adapter																																																																														
Stem model:	B5 (B1 with compression fitting)	B6 (B3 with double male adapter)																																																																														
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Minimum Stem Length and Active Length (mm/inch)

Stem model:	Length:	Thread:	Stem Ø dF:				
			6 (0.24")		8 (0.31")		
			Span ΔT ¹⁾				
			≥100 K	=80 K	=60 K	≥80 K	=60 K
all models	La	all standard threads	40	60	70	40	60
			1.57	2.36	2.76	1.57	2.36
B1 / B4	Lmin	all standard threads	45	65	75	45	65
			1.77	2.56	2.95	1.77	2.56
B3	Lmin	all standard threads	52	72	82	52	72
			2.05	2.83	3.23	2.05	2.83
B4.1	Lmin	all standard threads	60	80	90	60	80
			2.36	3.15	3.54	2.36	3.15
B5	Lmin	all standard threads	95	115	125	95	115
			3.74	4.53	4.92	3.74	4.53
B6	L1min	all standard threads	60	80	90	60	80
			2.36	3.15	3.54	2.36	3.15
others			upon request		upon request		

The minimum length Lmin/L1min is the smallest feasible stem length.
Important: Please note the technical information sheet T08-000-031 on the metrologically optimal stem length.

The active length La is the temperature-sensitive part of the stem.

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																																																																																				
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Temperature ranges:	<table border="1"> <thead> <tr> <th>scale °C:</th> <th>ΔT (K):</th> <th>scale °F:</th> <th>ΔT (°F):</th> </tr> </thead> <tbody> <tr><td>0 – 60 °C</td><td>60</td><td>0 – 150 °F</td><td>150</td></tr> <tr><td>0 – 80 °C</td><td>80</td><td>0 – 200 °F</td><td>200</td></tr> <tr><td>0 – 100 °C</td><td>100</td><td>0 – 250 °F</td><td>250</td></tr> <tr><td>0 – 120 °C</td><td>120</td><td>0 – 300 °F</td><td>300</td></tr> <tr><td>0 – 160 °C</td><td>160</td><td>–50 / +130 °F</td><td>180</td></tr> <tr><td>0 – 200 °C</td><td>200</td><td>–40 / +160 °F</td><td>200</td></tr> <tr><td>0 – 250 °C</td><td>250</td><td>–30 / +120 °F</td><td>150</td></tr> <tr><td>0 – 300 °C</td><td>300</td><td>–10 / +100 °F</td><td>110</td></tr> <tr><td>0 – 400 °C</td><td>400</td><td>20 – 240 °F</td><td>220</td></tr> <tr><td>0 – 500 °C</td><td>500</td><td>30 – 140 °F</td><td>110</td></tr> <tr><td>0 – 600 °C</td><td>600</td><td>40 – 400 °F</td><td>360</td></tr> <tr><td>–50 / +50 °C</td><td>100</td><td>50 – 300 °F</td><td>250</td></tr> <tr><td>–40 / +40 °C</td><td>80</td><td>50 – 500 °F</td><td>450</td></tr> <tr><td>–40 / +60 °C</td><td>100</td><td>80 – 800 °F</td><td>720</td></tr> <tr><td>–30 / +50 °C</td><td>80</td><td>150 – 700 °F</td><td>550</td></tr> <tr><td>–30 / +70 °C</td><td>100</td><td></td><td></td></tr> <tr><td>–20 / +40 °C</td><td>60</td><td></td><td></td></tr> <tr><td>–20 / +60 °C</td><td>80</td><td></td><td></td></tr> <tr><td>–20 / +80 °C</td><td>100</td><td></td><td></td></tr> <tr><td>50 – 300 °C</td><td>250</td><td></td><td></td></tr> </tbody> </table>	scale °C:	ΔT (K):	scale °F:	ΔT (°F):	0 – 60 °C	60	0 – 150 °F	150	0 – 80 °C	80	0 – 200 °F	200	0 – 100 °C	100	0 – 250 °F	250	0 – 120 °C	120	0 – 300 °F	300	0 – 160 °C	160	–50 / +130 °F	180	0 – 200 °C	200	–40 / +160 °F	200	0 – 250 °C	250	–30 / +120 °F	150	0 – 300 °C	300	–10 / +100 °F	110	0 – 400 °C	400	20 – 240 °F	220	0 – 500 °C	500	30 – 140 °F	110	0 – 600 °C	600	40 – 400 °F	360	–50 / +50 °C	100	50 – 300 °F	250	–40 / +40 °C	80	50 – 500 °F	450	–40 / +60 °C	100	80 – 800 °F	720	–30 / +50 °C	80	150 – 700 °F	550	–30 / +70 °C	100			–20 / +40 °C	60			–20 / +60 °C	80			–20 / +80 °C	100			50 – 300 °C	250			e.g. 0–100 °C
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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 (0.24 or 0.31")	dF 6, 8																																																																																				
Stem length:	L or L1 in mm	e.g. L = 100 mm																																																																																				
Process connection:	see page 3	e.g. G½B																																																																																				
Options:	<ul style="list-style-type: none"> 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 (0.39") stem length >400 mm (15.75"), max. 800 mm (31.5") 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, G½

Special Versions: Please describe your requirements in cleartext!