

Bimetal Thermometers

Stainless steel case, crimped-on ring

Without (TBiSChg/TBiGelChg) or with case filling (TBiSChgG/TBiGelChgG)

Cl. 1 NCS 63
80
100

Models

TBiSChg/TBiSChgG

TBiGelChg/TBiGelChgG

Application

Industrial temperature measurement, for fluid or gaseous media. The appropriate versions are suitable also for aggressive media as you find in chemical industries, petrochemistry, process technology, or apparatus engineering, and for food and beverage industries.

Nominal Case Sizes (NCS)

63, 80, 100 (2½", 3", 4")

Accuracy (DIN EN 13 190)

Class 1

Temperature Ranges (DIN EN 13 190)

See table page 3, temperature differences of 60 up to 500 K

Operating Temperature Limitations

Permanent: max. measuring range
Short time (approx. 1h): full scale value (max. nominal range)

Ambient Temperatures Limitations (also for storage and transport)

-40 to +60°C (-40 to +140°F), glycerine filling -20 to +60°C (-4 to +140°F)

Reference Temperature

+23 °C ± 2 °C (73.4 °F ± 3.6 °F)

Pressure Limitation

25 bar (350 psi) static pressure at the stem
(thermowell required for higher pressure!)

Protection Type (EN 60529 / IEC 529)

IP 65



Standard Configuration

Connection Case / Stem

Typ TBiSCh... : rigid stem

Typ TBiGelCh...: adjustable angle stainless steel

Case and Ring

304 stainless steel (1.4301), crimped-on ring

Case Filling

Models TBiSChgG and TBiGelChgG, up to max. indication range

+250 °C (+482 °F):

Indication range down to -20 °C (-4 °F) and

up to +100 °C (+212 °F):

Glycerine

Indication range < -20 °C (-4 °F) down to -40 °C (-40 °F) and

> +100 °C (+212 °F) up to +250 °C (+482 °F): Silicone oil

Window

Single strength glass

Stem Position

Model TBiSChg: bottom, optionally center back (rm)

Model TBiGelChg: center back with adjustable angle (rmGel)

Stem

Stainless steel 316 Ti (1.4571),

Ø 6 or 8 mm (.24 or .31"),

stem length up to 450 mm (17.72"),

stem type and minimum stem length see page 3

Measuring System

Bimetallic coil

Dial

Aluminum alloy, black figures, white background

Pointer

Aluminum black

Adjustment

± 4 % with adjustment screw from outside

Special Configurations et. al.

- Stem type B 4.1 with neck tube (compare page 2) for version TBiSChg...rm
- Other indication ranges or other units, e.g. °F or K, special scales such as dual ranges upon request
- Other connection threads resp. connection types upon request
- Other than vertical installation, top or side connection upon request
- Thermowell or flange thermowell acc. to DIN 43772, see data sheet 8310 (form 4, 4F), 8311 (form 5, 6, 7), 8312 (form 8, 9) and data sheet 8320 (with clamping ring connection); thermowell with fixing screw at the side upon request
- Red mark as movable plastic clip on the outside of the ring

Ordering Information:

Model: **TBiSChg / TBiGelChg** (without case filling)
TBiSChgG / TBiGelChgG (case filling)

Nominal case size: **63, 80 or 100**

Ordering code for case configuration

for model TBiSChg...: Without: bottom stem position

rm: center back stem position

Nominal range: According to DIN resp. table page 3, e.g. 0-100 °C or -30/+ 50°C

Stem configuration: Stem type **B1, B3, B4, B4.1, B5**
(compare page 3) Stem-Ø **6 mm or 8 mm**

Stem length **L**

Connection, e.g. G ½ B

Special options: See above

Accessory (if required): Thermowell according to DIN 43 772, data sheets 8310 ff

Example:

TBiSChg 100 rm, 0-100 °C, B4.1, Ø 8 mm, L = 300 mm, G ½ B

TBiGelChg 100 rm, 0-100 °C, B3, Ø 8 mm, L = 250 mm, G ½ B



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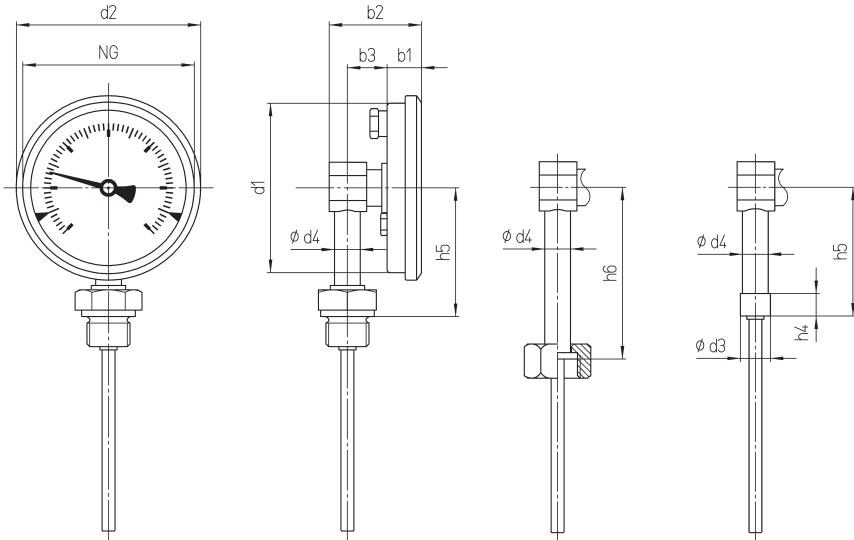
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Case Configuration, Code Letters, Dimensional Data and Weight

Model TBiSChg / TBiSChgG

Bottom stem position, without code letter

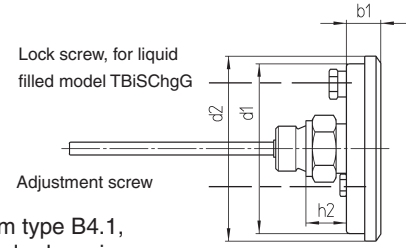


Stem type B4.1, rigid male connection

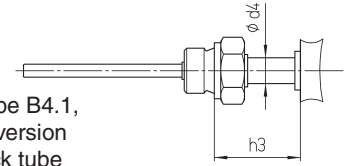
Stem type B3 / B4¹⁾ union nut / turnable male connection

Stem type B1, plain

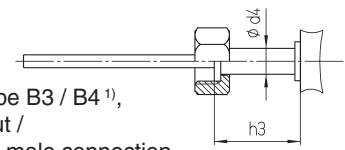
Center back stem position, code letters **rm**



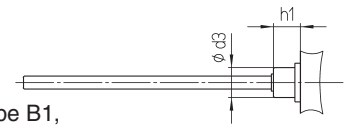
Stem type B4.1, standard version without neck tube



Stem type B4.1, special version with neck tube



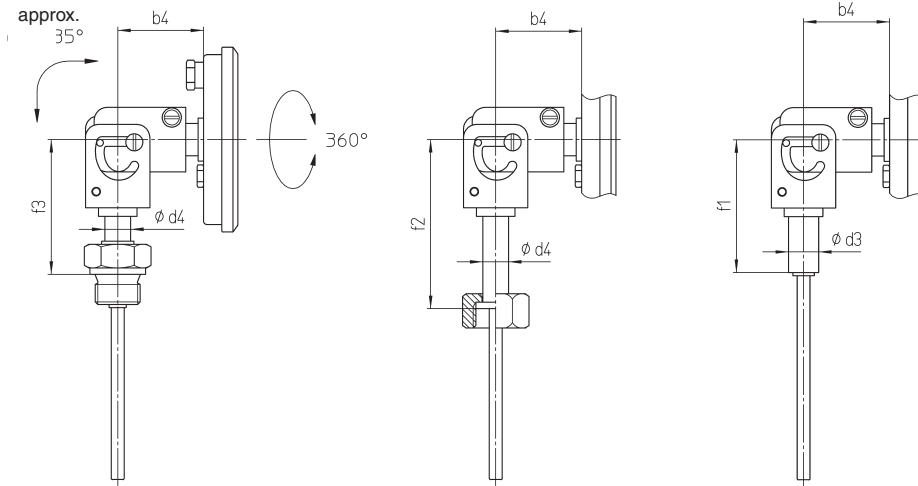
Stem type B3 / B4¹⁾, union nut / turnable male connection



Stem type B1, plain

Model TBiGelChg / TBiGelChgG

Center back stem position, adjustable angle stainless steel, stem adjustment up to 135° and case rotation up to 360°



Stem type B4.1, rigid male connection

Stem type B3 / B4¹⁾ union nut / turnable male connection

Stem type B1, plain

Dimensions (mm / inches) and Weight (kg / lb)

NG NCS	b1	b2	b3	b4	d1	d2	d3	d4	f1	f2	f3	h 1	h2	h3 ³⁾	h4	h5	h6	Weight (approx.) ²⁾		
																		bottom	TBiSChg.. rm	TBiGelChg..
63 2½"	17 .67	45 1.77			62 2.44	67 2.64										55 2.17	70 2.76	.20 .44	.15 .33	.25 .55
80 3"	18 .71	46 1.81	18.5 .73	40 1.57	79 3.11	86 3.39	14 .55	12 .47	62 2.44	79 3.11	63 2.48	12.5 .49	18.8 .74	40 1.57	10.5 .41	65 2.56	80 3.15	.25 .55	.20 .44	.30 .66
100 4"					98 3.86	108 4.25										75 2.95	90 3.54	.30 .66	.25 .55	.35 .77

¹⁾ here shown: B3

²⁾ valid for stem type B1, Ø 6 mm, L = 150 mm, weight differs depending on stem type and length

³⁾ the max. stem length is reduced corresponding to dimension h3

Indication Ranges / Measuring Ranges, Limits of Error, Minimum Immersion Length Stem

Nominal Range °C	Measuring Range °C	Scale Subdivision °C	Max. Error °C	Minimum Immersion Length Stem ET _{min}	
				Ø 6 mm	Ø 8 mm
-20 / + 40	-10 / + 30	1	1	70	60
-20 / + 60	-10 / + 50	1	1	60	40
-30 / + 50	-20 / + 40	1	1	60	40
-40 / + 40	-30 / + 30	1	1	60	40
-40 / + 60	-20 / + 50	1	1	40	40
0 - 60	10 - 50	1	1	70	60
0 - 80	10 - 70	1	1	60	40
0 - 100	10 - 90	1	1	40	40
0 - 120	10 - 100	2	2	40	40
0 - 160	20 - 140	2	2	40	40
0 - 200	20 - 180	2	2	40	40
0 - 250	30 - 220	2	2,5	40	40
0 - 300	30 - 270	5	5	40	40
0 - 400	50 - 350	5	5	40	40
0 - 500	50 - 450	5	5	40	40

Values for °F upon request

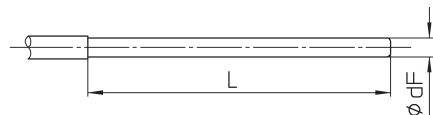
Stem Types and Connection Types (Thermowells see data sheet 8310, 8311, 8312, 8320.)

Material: Stem and connection pieces made of stainless steel 316 Ti (1.4571)

Stem type B 1 (= form 1 DIN EN 13 190)
Plain stem (without thread connection)

Basis for stem type B5 (see below)

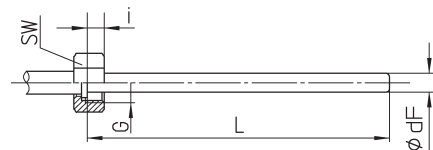
Stem diameter dF: 6 mm (.24") or 8 mm (.31")



Minimum stem length $L_{min} = ET_{min}$

Stem type B 3 (= form 5 DIN EN 13 190)
Turnable union nut (see below, others upon request)

dF	G	SW	i
mm 6, 8 inches .24, .31	G ½	27	8.5
	½" BSP-f	1.06	.33
	G ¾	32	10
	¾" BSP-f	1.26	.39



Minimum stem length $L_{min} = ET_{min} + i$

Stem type B 4 (= form 4 DIN EN 13 190)
Turnable male connection (see below, others upon request)

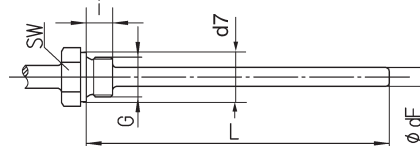
dF	G	SW	i
mm 6, 8 inches .24, .31	G ½ B	27	20
	½" BSP-m	1.06	.79



Minimum stem length $L_{min} = ET_{min}$

Stem type B 4.1 (= form 6 and form 7 DIN EN 13 190)
Rigid male connection thread (see below, others upon request)

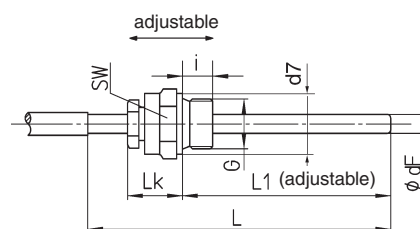
dF	G	SW	d7	i
mm 6, 8 inches .24, .31	G ½ B	27	26	14
	½" BSP-m	1.06	1.02	.55
	G ¾ B	32	32	16
	¾" BSP-m	1.26	1.26	.63
	½" NPT	24	—	19
	¾" NPT	27	—	.75



Minimum stem length $L_{min} = ET_{min} + i$

Stem type B 5 (= form 2 and form 3 DIN EN 13 190)
Stem type B 1 with clamping ring connection including male thread, fitting adjustable on the stem

dF	G	SW	d ₇	i	L _k
mm 6, 8 inches .24, .31	G ½ B	27	26	14	aprox. 37 1.46
	½" BSP-m	1.06	1.02	.55	
	G ¾ B	32	32	16	
	¾" BSP-m	1.26	1.26	.63	
	½" NPT	24	—	19	
	¾" NPT	27	—	.75	



Minimum stem length $L_{min} = ET_{min} + 55 \text{ mm}$

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.