

Bimetal Thermometers, Rigid Mount

Crimped-on ring case stainless steel

TBiSChg
TBiSChgG

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)

IP 65

Case Filling

For model TBiSChgG

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 (2½, 3, 4, 5, 6")

Case Configuration

Connection temperature sensor (stem):

- rigid mount with neck tube

Stem position:

- vertical bottom position (not for NCS 160)

- centre back position (**rm**):

for stem B1 and B4.1 without neck tube

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 max. 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 TBiSChg for ambient temperatures to -60 °C;
Model TBiSChgG for ambient temperatures to -40 °C;
to -60 °C NCS 100, 125 and 160
- 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

Thermowells

See data sheets 8.8110 ff.



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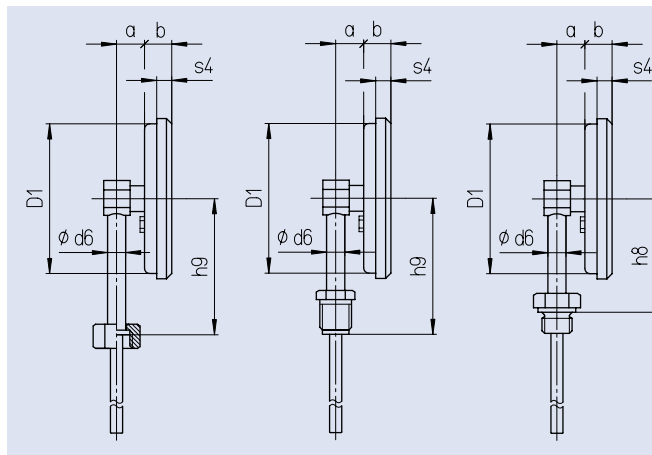
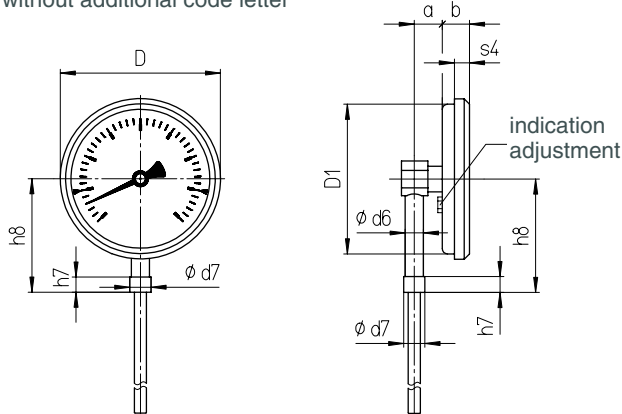
Stem Position, Code Letters, Dimensional Data and Weights

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



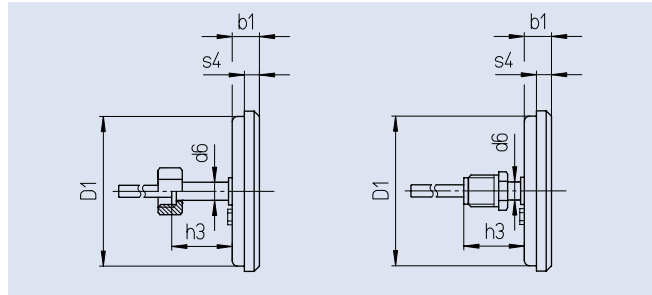
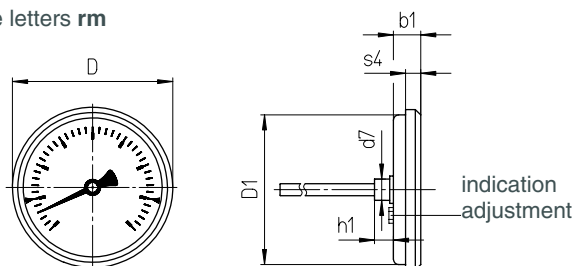
Centre Back Stem Position

Stem model B1 (also B5)

Stem model B3 (also B6)

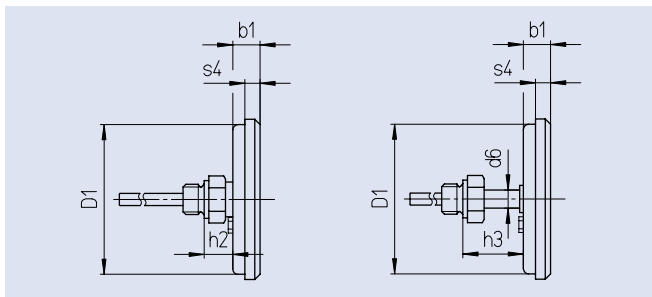
Stem model B4

code letters rm



Stem model B4.1
without neck tube (standard)

Stem model B4.1
with neck tube (option)



Dimensional Data (mm) and Weights (kg)

| NCS | a | b | b1 | D | D1 | d6 | d7 | h1 ⁴⁾ | h2 ⁴⁾ | h3 ¹⁾⁴⁾ | h7 | h8 ⁴⁾ | h9 ⁴⁾ | s4 | approx. weight ²⁾ | |
|-----|------|----|----|-----|-----|----|----|------------------|------------------|--------------------|------|------------------|------------------|----|------------------------------|--------------------|
| | | | | | | | | | | | | | | | TBiSChg | TBiSChgG |
| 63 | 18.5 | 17 | 17 | 67 | 62 | 12 | 14 | 12.5 | 19 | 40 | 10.5 | 55 | 70 | 8 | 0.18 | 0.20 |
| 80 | 18.5 | 18 | 18 | 86 | 79 | 12 | 14 | 12.5 | 19 | 40 | 10.5 | 65 | 80 | 8 | 0.22 | 0.27 |
| 100 | 18.5 | 18 | 18 | 106 | 98 | 12 | 14 | 12.5 | 19 | 40 | 10.5 | 75 | 90 | 10 | 0.29 | 0.37 |
| 125 | 18.5 | 20 | 20 | 136 | 125 | 12 | 14 | 12.5 | 19 | 40 | 10.5 | 85 | 102 | 11 | 0.36 ³⁾ | 0.47 ³⁾ |
| 160 | — | — | 21 | 167 | 159 | 12 | 14 | 12.5 | 19 | 40 | — | — | — | 11 | 0.46 ³⁾ | 0.66 ³⁾ |

¹⁾ Stem model B4 with G 3/4 B: 50 mm

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

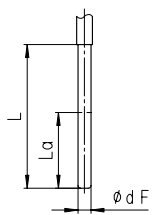
³⁾ Valid for model ...rm

⁴⁾ Temperature ranges ≥ 400 °C: extended neck tube for small stem lengths, see T08-000-031

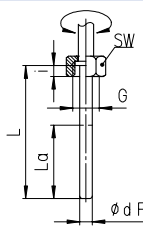
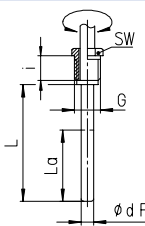
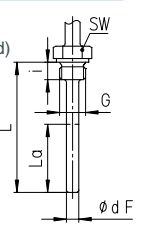
Stem Models

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) | | |

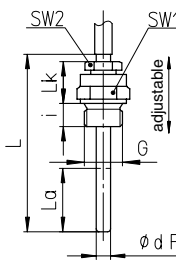
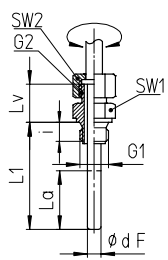


| | | | |
|--|---|--|--|
| Process connection: | Union nut | Male thread, turnable | Male thread, rigid |
| Stem model: | B3 | B4 | B4.1 |
| Form acc. to DIN EN 13 190: | Form 5 | Form 4 | Form 6 (cylindrical thread) Form 7 (conical thread) |
| Stem material: | 1.4571 | 1.4571 | 1.4571 |
| Stem Ø dF: | 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 | 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) | B6 (B3 with double male adapter) |
| Form acc. to DIN EN 13 190: | Form 2 (cylindrical thread) Form 3 (conical thread) | — |
| Stem material: | 1.4571 | 1.4571 |
| Stem Ø dF: | 6 or 8 mm | 6 or 8 mm |
| Screw fitting material: | 1.4571 | 1.4571 |
| Order length: | L | 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) |

| 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 model: | Length: | Thread: | Stem Ø dF: | | | | | |
|-------------------|-------------------|----------------------|-----------------------|--------|--------------|--------|--------|--|
| | | | 6 | | 8 | | | |
| | | | Span ΔT ¹⁾ | | | | | |
| | | | ≥ 100K | = 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 | | | |

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.

The active length L_a 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

