

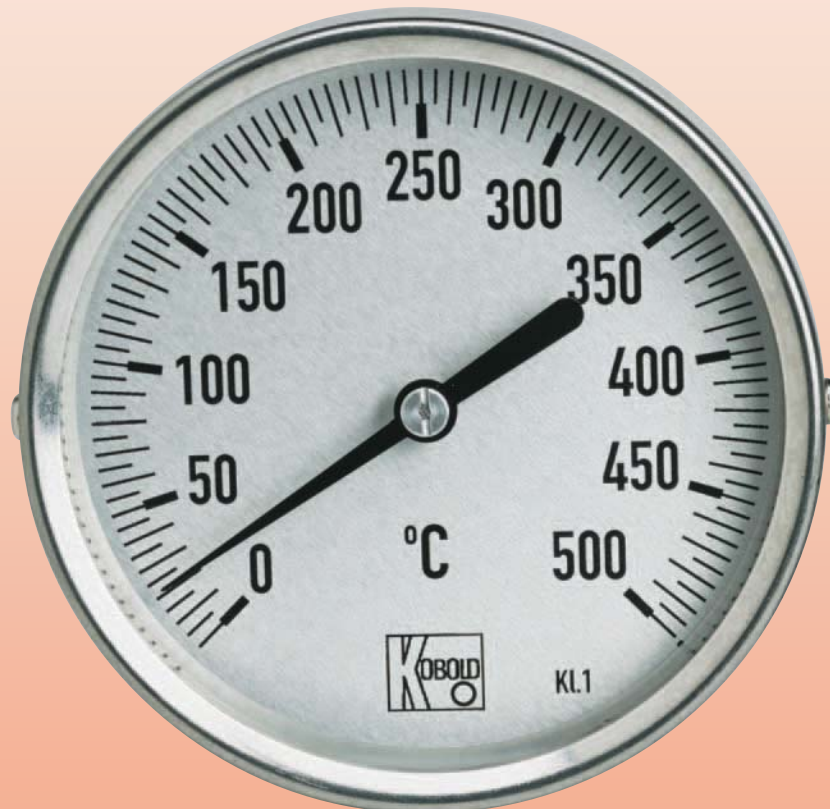


Bimetallic Thermometers

for Industrial Applications,
Accuracy Class 1



measuring
•
monitoring
•
analysing



- Fast response times
- Large selection of standard versions
- Special versions at customer request
- Nominal sizes: 63, 80 and 100 mm
- Temperatures:
-30 ... +50 °C to 0 ... +500 °C



T2

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KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
☎ +49(0)6192 299-0
Fax +49(0)6192 23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

Model:
TBI-I...
TBI-S...



Application and Description

The bimetallic thermometers are used on site for direct temperature measurement. A wide range of standard versions allows a variety of applications. Furthermore special versions are manufactured to customer specification.

Special areas of application heavy industrial plants, piping and vessels, machines etc.

The devices are installed into a thermowell with adjusting screw. Simply screw in the thermowell, plug in the thermometer and clamp with the adjusting screw.

Method of Operation

The measuring element of the bimetallic thermometer is a fast-response bimetallic helix. It is manufactured from two cold-welded strips of metal with different thermal coefficients of expansion and it becomes twisted as a function of temperature. The rotary motion is transferred with low friction to the pointer.

Features

- High-quality, low-friction, particularly stable bimetallic system in accuracy class 1
- Short temperature damping time with optimized adaptation of the protective tube to the special light-metal bulb
- Reduced vibration effects with ruggedized and overtemperature protected bimetallic element
- Extremely solid and torsionally strong case
- Fast and perfect measuring-point sealing with specially roughened protective tube thread



Technical Details

- Permissible operating pressure of thermowell: 6 bar with copper alloy, 25 bar with steel St35 or st.st. 1.4571
- Measuring element: bimetallic helix
- Dial angle: approximately 270°
- Range of application: continuous: measuring range short-time (< 1 h): 1.1 meas. range category 1 (according to DIN 16203)
- Accuracy: adjusting pointer
- Display correction: stainless steel 1.4301
- Casing: bottom or centre back
- Protective tube: copper alloy, St35, st. steel 1.4571

Connection construction: smooth, D=8 mm with collar for protective tube

- Window: instrument glass
- Dial face: aluminium matt finish with fine graduation, dial and inscription black
- Pointer: aluminium black, trimming pointer
- Option: dual scale °C/°F scaling °F

Order Details (Example: TBI-SRD 35 045 1 R)

Model	Nominal size	Connection	Measuring range	with Thermowell		
				Length (L1)	Material	Connection
TBI-SRD..	63 mm	centre back	..35..=-30... +50°C, division 0.5°C	..045..= 45 mm ²⁾	..00.. =without thermowell st. steel 1.4571	..R= G 1/2 AG
TBI-SRE..	80 mm		..26..=-20... +60°C, division 0.5°C	..063..= 63 mm	..1.. =copper alloy	
TBI-SRF..	100 mm		..10..= 0...+100°C, division 1°C ¹⁾	..100..=100 mm	..2.. =St 35	
			..12..= 0...+120°C, division 1°C	..160..=160 mm	..3.. =st. steel 1.4571	
			..16..= 0...+160°C, division 2°C	..200..=200 mm		
		bottom		Length (L2)	..00.. =without thermowell st. steel 1.4571	..S= welded
TBI-SUF..	100 mm		..20..= 0...+200°C, division 2°C	..043..= 43 mm	..2.. =St 35	
			..25..= 0...+250°C, division 2°C	..080..= 80 mm	..3.. =st. steel 1.4571	
				..140..=140 mm		
				..180..=180 mm		

Please specify options in writing

¹⁾ not with bottom connection ²⁾ length 45 mm for TBI-SUF on request

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Application and Description

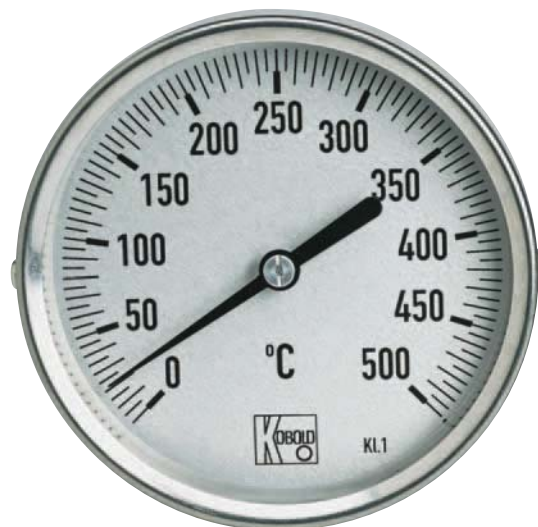
The bimetallic thermometers are used on site for direct temperature measurement. A wide range of standard versions allows a variety of applications. Furthermore special versions are manufactured to customer specification. The device is installed directly or by screwing into a thermowell according to DIN.

Method of Operation

The measuring element of the bimetallic thermometer is a fast-response bimetallic helix. It is manufactured from two cold-welded strips of metal with different thermal coefficients of expansion and it becomes twisted as a function of temperature. The rotary motion is transferred with low friction to the pointer.

Features

- High-quality, low-friction, particularly stable bimetallic system in accuracy class 1
- Short temperature damping time with optimized adaptation of the thermowell to the special light-metal bulb
- Reduced vibration effects with ruggedized and overtemperature protected bimetallic element
- Extremely solid and torsionally strong case
- Fast and perfect measuring-point sealing with specially roughened thread



Technical Details

Permissible operating pressure of thermowell: max. 25 bar
 Measuring element: bimetallic helix
 Dial angle: approximately 270°
 Range of application: continuous: measuring range
 short-time (< 1 h): 1.1 meas. range category 1 (acc. to DIN 16203)
 Accuracy:
 Display correction: adjusting pointer
 Casing: stainless steel 1.4301
 Immersion tube: st. st. 1.4571
 Connection: bottom or centre back
Connection construction: G 1/2 male thread
 Immersion probe: D = 8 mm
 Window: instrument glass
 Dial face: aluminium matt finish with fine graduation, dial and inscription black
 Pointer: aluminium black, trimming pointer
 Option: dual scale °C/°F
 scaling °F
 gliding mark pointer
 max. pointer

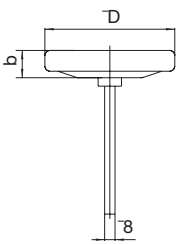
Order Details (Example: TBI-IRD350453G)

Model	Nominal size	Connection	Measuring range	Length (L1)	Probe Material	Connection
TBI-IRD..	63 mm	centre back	..35..=-30...+ 50°C, division 0.5°C ..26..=-20...+ 60°C, division 0.5°C ..06..= 0...+ 60°C, division 0.5°C ..08..= 0...+ 80°C, division 0.5°C ..10..= 0...+100°C, division 1°C 1)	..063..= 63 mm ..100..=100 mm ..160..=160 mm ..200..=200 mm ..250..=250 mm	..3..=st. st. 1.4571	..G=G 1/2 AG
TBI-IRE..	80 mm		..12..= 0...+120°C, division 1°C ..16..= 0...+160°C, division 2°C ..20..= 0...+200°C, division 2°C			
TBI-IRF..	100 mm		..25..= 0...+250°C, division 2°C ..30..= 0...+300°C, division 2°C ..40..= 0...+400°C, division 2°C ..50..= 0...+500°C, division 2°C			
TBI-IUF..	100 mm	bottom				

Dimensions

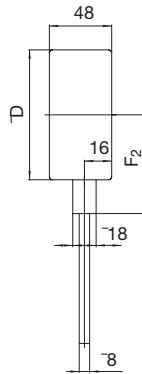
with smooth immersion probe and thermowells

Model
TBI-SR...



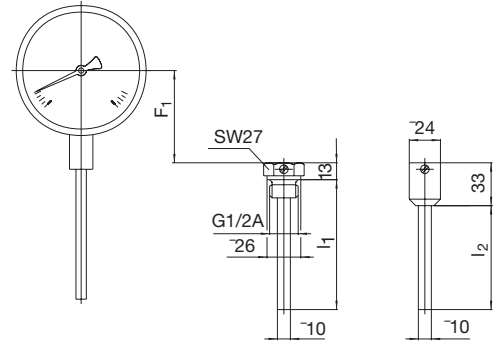
Dimensions [mm]	
D (NG)	b
63	16
80	17
100	21

Model
TBI-SU...



Dimensions [mm]		
D (NG)	F ₁	F ₂
100	70	78

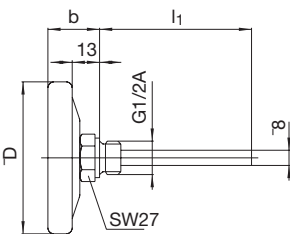
Thermowell
for screwing in for welding in



Dimensions see Order Details

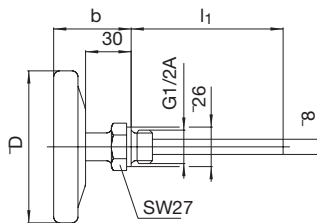
with thread connection for thermowells according to DIN

Model
TBI-IR... (up to 250°C)



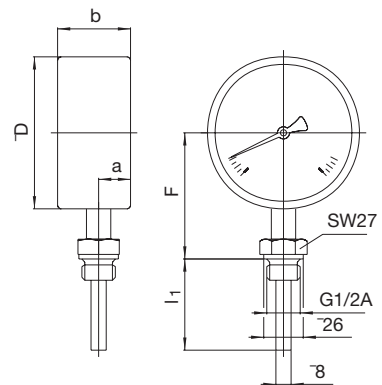
Dimensions [mm]	
D (NG)	b
63	29
80	30
100	35

Model
TBI-IR... (from 300°C)



Dimensions [mm]	
D (NG)	b
63	46
80	47
100	52

Model
TBI-IU...



Dimensions [mm]			
D (NG)	a	b	F
100	17	44	83

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