

Bimetal thermometer
Model T.22, industrial series
T.221 , T222 models



for further approvals
see page 6

Applications

A wide range of applications in machine building, vessel, piping and apparatus construction , Heating technology

Special features

Scale ranges from -30 ... +500 °C

Large choice of nominal sizes from 25 ... 160 mm

Case and stem from stainless steel

5 different connection designs

Description

The model T.22 bimetal thermometer is the entry-level model among process thermometers. The target markets of this thermometer are air-conditioning and machine building.

Model T.22 is manufactured in accordance with EN13190 and already offers a stainless steel case and accuracy class 1 for nominal sizes > 60 mm.

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Especially noteworthy is the large number of stem lengths and nominal sizes. This enables the individual adaptation to the target applications.

Mechanical
temperature measurement



Bimetal thermometer
Model T.22

Standard version

Measuring element

Bimetal coil

Nominal size in mm

25, 33, 40, 50, 63, 80, 100, 160

Connection designs

S Standard (male threaded connection)

1 Plain stem (without thread)

2 Male nut 1)

3 Union nut 1)

4 Compression fitting (sliding on stem) 1

1) Not for NS 25, 33, 40, 50

Model overview

Model	NS	Design
A52.02 5	25	Back mount (axial)
A52.03 3	33	
A52.04 0	40	
A52.05 0	50	
A52.06 3	63	
A52.08 0	80	
A52.10 0	100	
A52.16 0	160	
R52.06 3	63	Lower (radial) mount
R52.08 0	80	
R52.10 0	100	
R52.16 0	160	

Accuracy class

NS 25, 33: ± 5 % of scale range

NS 40, 50: 2 per EN 13190

NS 63, 80, 100, 160: 1 per EN 13190

Working range

Continuous loading: Measuring range per EN 13190

Short time (24 h max.): Scale range per EN 13190

Case, bezel ring, stem, process connection and spacer

Dial

Aluminium, white, black lettering

Window

Instrument glass

NS 33: polycarbonate

Pointer

NS 25, 33, 40: Aluminium, black

NS 50, 63, 80, 100, 160: Aluminium, black, adjustable pointer

Permissible operating pressure at the stem

NS 25, 33, 40, 50: max. 6 bar, static

NS 63, 80, 100, 160: max. 25 bar, static

Ingress protection

NS 25, 33, 40: IP54 per EN 60529 / IEC 529

NS 50, 63, 80, 100, 160: IP43 per EN 60529 / IEC 529

Options

Scale range °F, °C/°F (dual scale)

Other scale ranges

Other connection types

Stainless steel

Elbow behind the case

Aluminium, only with lower mount version

Scale ranges, measuring ranges 2, error limit (EN 13190)

Scale graduation per POWERCONTROL standard



Scale range in °C	Measuring range in °C	Scale spacing in °C		Error limit ±°C	
		up to NS 63	from NS 80	up to NS 50	from NS 63
-30 ... +50	-20 ... +40	1	1	2	1
-20 ... +60	-10 ... +50	1	1	2	1
0 ... 60	10 ... 50	1	1	2	1
0 ... 80	10 ... 70	1	1	2	1
0 ... 100	10 ... 90	2	1	2	1
0 ... 120	10 ... 110	2	1	4	2
0 ... 160	20 ... 140	2	2	4	2
0 ... 200 ³⁾	20 ... 180	5	2	4	2
0 ... 250 ³⁾	30 ... 220	5	2	5	2.5
0 ... 300 ⁴⁾	30 ... 270	5	2	-	5
0 ... 400 ⁴⁾	50 ... 350	5	5	-	5
0 ... 500 ⁴⁾	50 ... 450	5	5	-	5

2) The limits of the measuring range are indicated on the dial by two triangular marks.

Only within this range is the stated error limit valid per EN 13190.

3) Not for NS 33

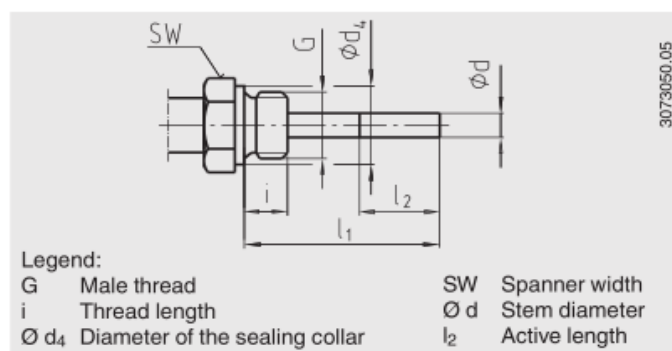
4) Not for NS 25 to NS 50

Connection designs

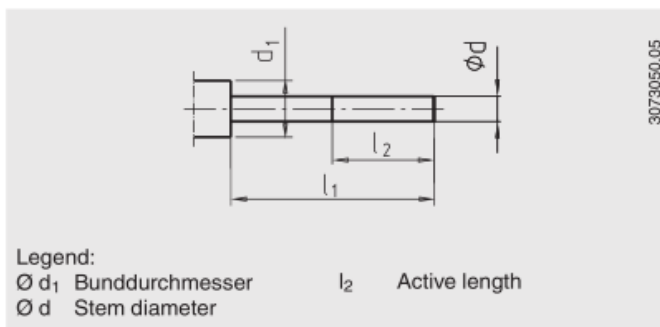
Standard design (male thread connection)

Standard insertion length $l_1 = 63, 100, 160, 200, 250$ mm

Nominal size	Process connection		Dimensions in mm		
	G	i	SW	$\varnothing d_4$	$\varnothing d$
25, 33	M8 x 1.25	8	12	-	4
	G 1/8 B	8	12	-	4
	G 1/4 B	8	17	-	4
40, 50	M8 x 1.25	8	12	-	4
	G 1/8 B	8	17	-	4
	G 1/4 B	8	17	-	4
	G 1/2 B	12	22	-	4
63, 80, 100, 160	G 1/4 B	12	19	18	6 or 8
	G 1/2 B	14	27	26	6 or 8
	M18 x 1.5	12	24	23	6 or 8
	1/2 NPT	19	22	-	6 or 8



Nominal size	Dimensions in mm	
NS	d ₁	Ø d
25, 33	8	4
40, 50	12	4
63, 80, 100, 160	18	6 or 8

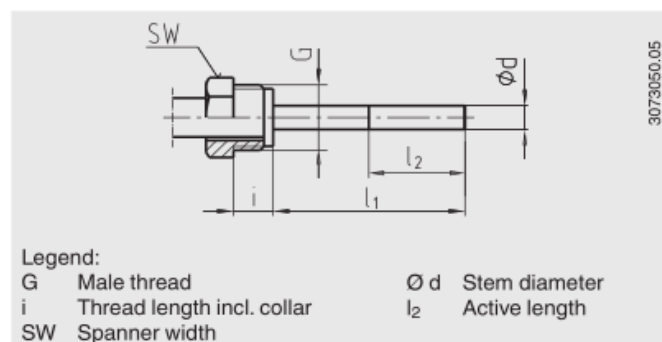


Design 2, male nut



Standard insertion length l₁ = 80, 140, 180, 230 mm

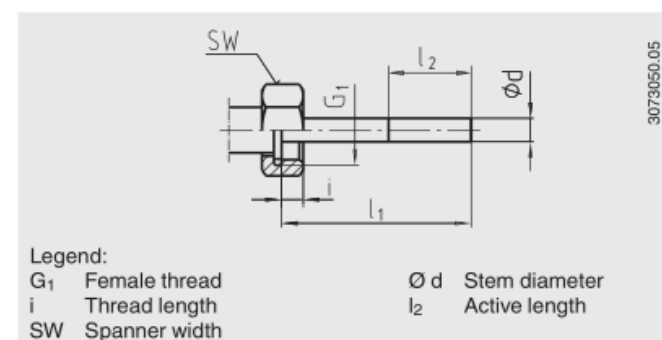
Nominal size	Process connection		Dimensions in mm	
NS	G	i	SW	Ø d
63, 80, 100, 160	G ½ B	20	27	6 or 8
	M18 x 1.5	17	22	6 or 8



Design 3, union nut

Standard insertion length l₁ = 89, 126, 186, 226, 276 mm

Nominal size	Process connection		Dimensions in mm	
NS	G	i	SW	Ø d
63, 80, 100, 160	G ½	8.5	27	6 or 8
	G ¾	9.5	32	6 or 8

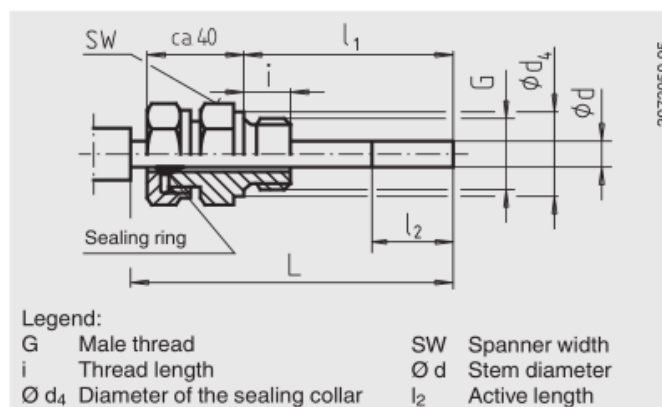


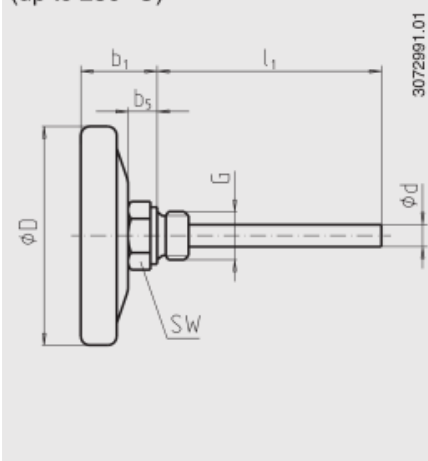
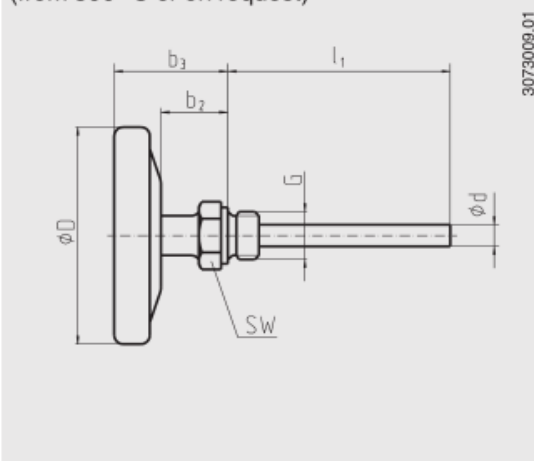
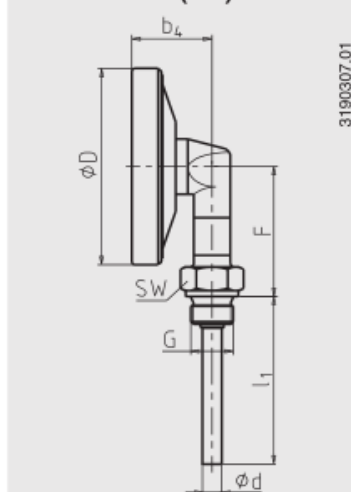
Design 4, compression fitting (sliding on stem)

Insertion length l₁ = variable

Length L = l₁ + 40 mm

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	Ø d ₄	Ø d
63, 80, 100, 160	G ¼ B	8	22	18	6 or 8
	G ½ B	14	27	26	6 or 8
	M18 x 1.5	12	24	23	6 or 8
	½ NPT	19	22	-	6 or 8
	G ¾ B	16	32	32	6 or 8
	¾ NPT	20	30	-	6 or 8



Back mount (BM)
 (up to 250 °C)

Back mount with spacer
 (from 300 °C or on request)

Lower mount (LM)


NS	Dimensions in mm							Weight in kg		
	b ₁	b ₂	b ₃	b ₄	b ₅	Ø D	F	R	RD	U
25	16	-	-	-	6	25	-	0.035	-	-
33	16	-	-	-	6	33	-	0.040	-	-
40	21	-	-	-	8	40	-	0.050	-	-
50	21	-	-	-	8	50	-	0.060	-	-
63	29	30 ¹⁾	46	34	13	63	47	0.160	0.200	0.220
80	30	30 ¹⁾	47	36	13	80	56	0.200	0.240	0.270
100	35	30 ¹⁾	52	40	13	100	66	0.250	0.290	0.330
160	39	30 ¹⁾	57	42,5	13	160	96	0.450	0.490	0.560

1) from 300 °C or on request

R Back mount (BM)

RD Back mount with spacer

U Lower mount (LM)


Thermowell

In principle, the operation of a mechanical thermometer without a thermowell with low process-side loading (low pressure, low viscosity and low flow velocities) is possible.

However, in order to enable exchanging the thermometer during operation (e.g. instrument replacement or calibration) and to ensure a better protection of the instrument and also the plant and the environment, it is advisable to use a thermowell from the extensive POWERCONTROL thermowell portfolio.

For further information on the calculation of the thermowell, see Technical information IN 00.15.

Approvals

Logo	Description	Country
	GOST (option) Metrology, measurement technology	Russia
-	CRN (option) Safety (e.g. electr. safety, overpressure, ...)	Canada

Certificates (option)

2.2 test report

Approvals and certificates, see website

