Bimetal thermometer
Model 55, high-quality process version per EN 13190

for further approvals
see page 7

Applications

- General process instrumentation in the chemical and petrochemical industries, oil and gas industries, energy and water/wastewater industries
- Temperature measurement in harsh and aggressive environments

Special features

- Scale ranges from -70 ... +600 °C
- For extreme ambient temperatures
- Maintenance-friendly bayonet case
- All stainless steel construction
- Individual stem length from 63 ... 1,000 mm

Fig. left: Bimetal thermometer, model R5502
Fig. right: Bimetal thermometer, adjustable stem and dial, model S5550

Description

The model 55 bimetal thermometer has been developed and is manufactured in accordance with the EN 13190 standard. The high-quality thermometer has been designed especially for the requirements of the process industry. Especially in the chemical and petrochemical, oil and gas, and power engineering industries, the temperature measuring instrument completely manufactured from stainless steel is used successfully.

The model 55 satisfies the high requirements for resistance against aggressive media. As an option, the case, the stem and the process connection can be made from 316Ti (1.4571) to fulfil the highest requirements.

To allow optimum fitting to the process, individual insertion lengths and different process connections can be selected.

When it comes to harsh climatic conditions at the place of use, the model 55 is the right choice, as it can be used at temperatures ranging from -40 °C to +70 °C (optional also up to -50 °C or -70 °C).

Standard version

Measuring element
Bimetal coil

Nominal size in mm
63, 100, 160

Connection designs
S Standard (male threaded connection)
1 Plain stem (without thread)
2 Male nut
3 Union nut
4 Compression fitting (sliding on stem)
5 Union nut and loose threaded connection

Model overview

Model	NS	Version
A5525	63	Back mount (axial)
A5500	100	
A5501	160	
R5526	63	Lower mount (radial)
R5502	100	
R5503	160	
S5550	100	Back mount, adjustable stem and dial
S5551	160	

Accuracy class
Class 1 per EN 13190

Working range
Normal (1 year): Measuring range (EN 13190)
Short time (24 h max.): Scale range (EN 13190)

Case, bayonet ring
Stainless steel 1.4301 (304)

Stem, process connection
Stainless steel 1.4571 (316Ti)

Dial
Aluminium white, black lettering

Window
Instrument glass
NS 63: window from polycarbonate

Pointer
Aluminium, black, micro adjustable pointer

Zero adjustment
on case back side, external only for adjustable stem and dial (option)

Insertion length L_1
63 ... 1,000 mm
minimum/maximum length is dependent on the measuring range and diameter

Temperature limits for storage and transport
-50 ... +70 °C

Permissible ambient temperature
-40 ... +70 °C (with/without filling liquid)

Permissible operating pressure at the stem
max. 25 bar, static

Ingress protection
IP65 per IEC/EN 60529

Options

- Scale range °F, °C/°F (dual scale)
- Liquid damping up to max. 250 °C (at the sensor)
- Laminated safety glass, clear non-splintering plastic
- Stem diameter 6, 10, 12 mm
- Permissible ambient temperature -50 ... +70 °C or -70 ... +60 °C
- Ingress protection IP66, IP67
- Thermometer with switch contacts (data sheet TV 25.01)
- Special measuring ranges or dial printing to customer specifications (on request)
- Version per ATEX

Scale ranges and measuring ranges [1] (EN 13190)
Scale graduation per WIKA standard

Scale range in °C	Measuring range [1] in °C	Scale spacing in °C
-70 ... +70	-50 ... +50	2
-70 ... +30	-60 ... +20	1
-50 ... +50	-40 ... +40	1
-50 ... +100	-30 ... +80	2
-50 ... +300	0 ... 250	5
-50 ... +500	0 ... 450	5
-40 ... +60	-30 ... +50	1
-40 ... +80	-20 ... +60	2
-40 ... +160	-20 ... +140	2
-30 ... +50	-20 ... +40	1
-30 ... +70	-20 ... +60	1
-20 ... +60	-10 ... +50	1
-20 ... +80	-10 ... +70	1
-20 ... +100	0 ... 80	2
-20 ... +120	0 ... 100	2
-20 ... +140	0 ... 120	2
-10 ... +50	0 ... 40	1
0 ... 60	10 ... 50	1
0 ... 80	10 ... 70	1
0 ... 100	10 ... 90	1
0 ... 120	10 ... 110	2
0 ... 150	20 ... 130	2
0 ... 160	20 ... 140	2
0 ... 200	20 ... 180	2
0 ... 250	30 ... 220	2
0 ... 300	30 ... 270	5
0 ... 400	50 ... 350	5
0 ... 500	50 ... 450	5
0 ... 600	100 ... 500	5

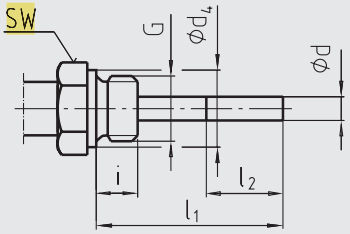
Scale range in °F	Measuring range [1] in °F	Scale spacing in °F
-80 ... +120	-40 ... +100	2
-80 ... +240	-50 ... +210	2
-20 ... +120	0 ... 100	2
0 ... 200	20 ... 180	2
0 ... 250	30 ... 220	2
30 ... 300	60 ... 270	5
30 ... 400	80 ... 350	5
50 ... 300	80 ... 270	5
50 ... 400	100 ... 350	5
100 ... 800	200 ... 700	5
200 ... 700	250 ... 650	5
200 ... 1.000	300 ... 900	5

1) The measuring range is indicated on the dial by two triangular marks. Only within this range is the stated error limit valid per EN 13190.

Connection designs

Standard design (male thread connection)
Connection, male: G ½ B, G ¾ B, ½ NPT, ¾ NPT
Insertion length l_1 = 63, 100, 160, 200, 250 mm

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	Ø d_4	Ø d
63, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	½ NPT	19	22	-	8 or 6
	¾ NPT	20	30	-	8



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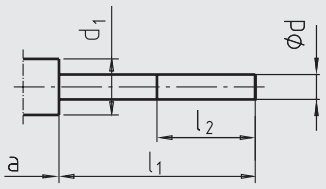
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Spanner width
Ø d Stem diameter
l_2 active length

Design 1, plain stem (without thread)
Insertion length l_1 = 140, 200, 240, 290 mm

Nominal size	Dimensions in mm			
NS	d_1	Ød	a for axial	a for adjustable stem and dial
63	14	8	15	25
100, 160	18	8	15	25



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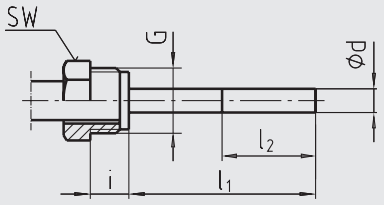
Legend:
a Distance to the case/ articulated joint
Ø d_1 Plain diameter
Ø d Stem diameter
l_2 active length

Design 2, male nut
Insertion length l_1 = 80, 140, 180, 230 mm

Nominal size	Process connection		Dimensions in mm	
NS	G	i	SW	Ø d
63, 100, 160	G ½ B	20	27	8



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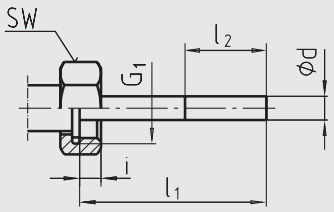
Legend:
G Male thread
i Thread length incl. collar
SW Spanner width
Ø d Stem diameter
l_2 active length

Design 3, union nut
Insertion length l_1 = 89, 126, 186, 226, 276 mm

Nominal size	Process connection		Dimensions in mm	
NS	G	i	SW	Ø d
63, 100, 160	G ½ B	8,5	27	8
	G ¾ B	10,5	32	8
	M24 x 1.5	13,5	32	8



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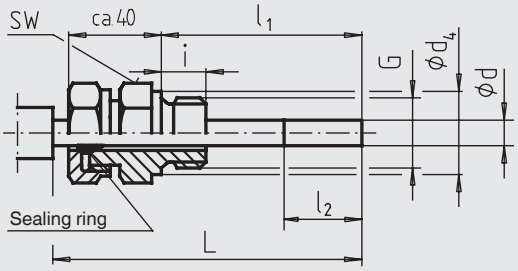
Legend:
G_1 Female thread
i Thread length
SW Spanner width
Ø d Stem diameter
l_2 active length

Design 4, compression fitting (sliding on stem)
Standard insertion length l_1 = 63, 100, 160, 200, 250 mm
Length L = l_1 + 40 mm

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	Ø d_4	Ø d
63, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	M18 x 1.5	12	24	23	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



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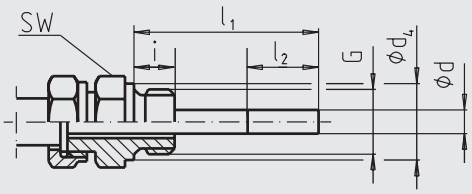
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Spanner width
Ø d Stem diameter
l_2 active length

Design 5, union nut and loose threaded connection
G ½ B, G ¾ B, M18 x 1.5 and ½ NPT, ¾ NPT
Minimum immersion depth l_{min} approx. 60 mm
Insertion length l_1 = variable
Length L = l_1 + 40 mm
Stainless steel 1.4571

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	Ø d_4	Ø d
63, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	M18 x 1.5	12	24	23	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



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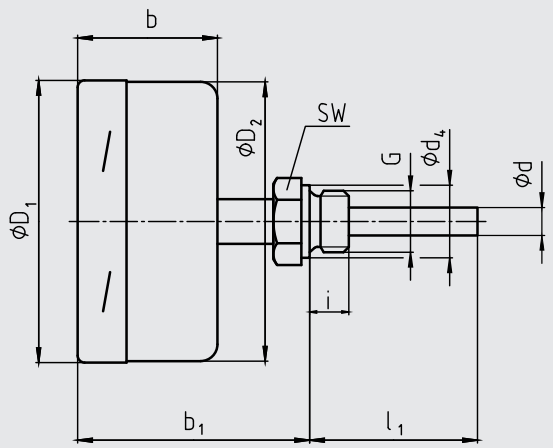
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Spanner width
Ø d Stem diameter
l_2 active length

Dimensions in mm

Back mount (BM)



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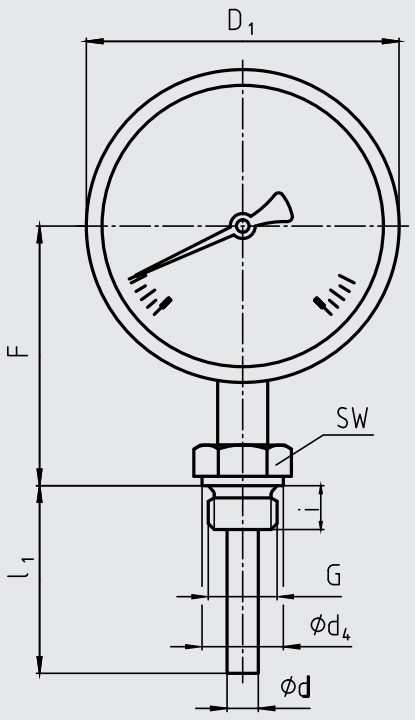
Lower mount (LM)



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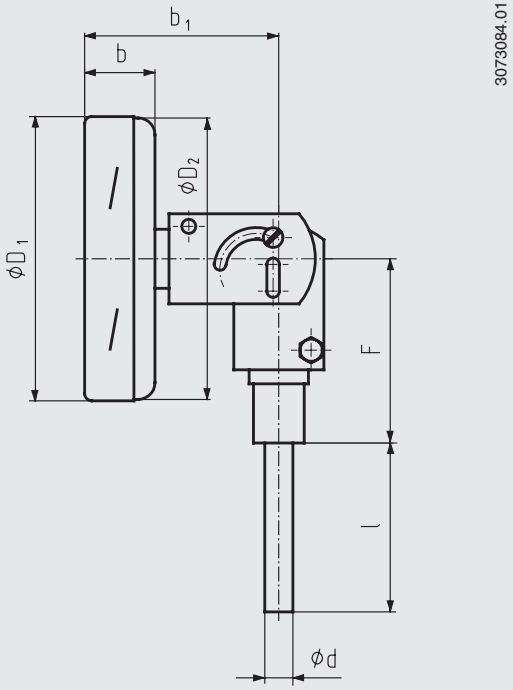
NS	Dimensions in mm									Weight in kg	
	b	b_1 1)	d 2)	d_4	Ø D_1	Ø D_2	F 1)	G	SW	Model A55xx	Model R55xx
63	35	60	8	26	64	62	57	G ½ B	27	0.25	0.25
100	50	83	8	26	101	99	83	G ½ B	27	0.8	0.8
160	50	83	8	26	161	159	113	G ½ B	27	1.1	1.1

1) With scale ranges ≥ 0 ... 300 °C the dimensions increase by 40 mm
2) Option: stem Ø 6, 10, 12 mm

Adjustable stem and dial version



NS	Dimensions in mm						Weight in kg
	b	b_1	d [1]	Ø D_1	Ø D_2	F	Model S55xx
100	25	68	8	101	99	68	0.5
160	25	68	8	161	159	68	0.7

1) Option: stem Ø 6, 10, 12 mm

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 WIKA thermowell portfolio.

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

Approvals

Logo	Description	Country
	EU declaration of conformity ATEX directive (option) Hazardous areas	European Union
	EAC (option) ■ Electromagnetic compatibility ■ Low voltage directive ■ Hazardous areas	Eurasian Economic Community
	GOST (option) Metrology, measurement technology	Russia
	KazInMetr (option) Metrology, measurement technology	Kazakhstan
-	**MTSCHS (option)** Permission for commissioning	Kazakhstan
	BelGIM (option) Metrology, measurement technology	Belarus
	UkrSEPRO (Option) Metrology, measurement technology	Ukraine
	Uzstandard (option) Metrology, measurement technology	Uzbekistan
-	**CRN (option)** Safety (e.g. electr. safety, overpressure, ...)	Canada

Certificates (options)

- 2.2 test report
- 3.1 inspection certificate
- DKD/DAkkS calibration certificate

Approvals and certificates, see website

Ordering information
Model / Nominal size / Scale range / Connection size / Connection location / Options

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Bimetal Thermometers
Heavy Duty Series, Model 54

Applications

- Plant, machinery, tank and apparatus construction
- Facility management
- With liquid damping also suitable for applications with extreme vibrations

Special Features

- Universal application
- Case and stem of stainless steel
- Bimetal with zero-point adjustment on the rear of the case
- Approval Germanischer Lloyd (with feature liquid damping, version axial or radial)

Fig. left: **Bimetal Thermometer Model A5402**
Fig. right: **Bimetal Thermometer, Adjustable Stem and Dial Model S5412**

Description

This series of thermometers is designed for installation in pipes, tanks, plants and machinery.

The stem and the case of the instrument are made from stainless steel. Various insertion lengths and process connections are available to optimally match the requirements of each process. Due to their high ingress protection (IP 65) and liquid damping these thermometers can be used in applications with extreme vibrations.

Standard version

Temperature element
Bimetal helix

Nominal sizes in mm
63, 80, 100, 160

Design of connection
S Standard (male thread connection)
1 Plain stem (without thread)
2 Male nut
3 Union nut
4 Compression fitting (sliding on stem)
5 Union nut with fitting

Instrument version
A54XX back mount (axial)
R54XX lower mount (radial)
S54XX back mount (adjustable stem and dial)

Accuracy class
Class 1 per DIN EN 13 190

Working range
Normal (1 year): Measuring range (DIN EN 13 190)
Short time (24 h max.): Scale range (DIN EN 13 190)

Case and ring
Stainless steel 1.4301

Stem and process connection
Stainless steel 1.4571

Elbow behind the case
Aluminium, only with radial entry version

Dial
Aluminium, white, lettering black

Window
Instrument glass

Pointer
Aluminium, black, adjustable pointer

Pressure rating of stem
max. 25 bar, static

Ambient temperature limit at the case
+60 °C max. (others on request)

Ingress protection
IP 65 per EN 60 529 / IEC 529

Options

- Scale range °F, °C/°F (dual scale)
- Liquid damping to 250 °C max. (at stem)
- GL approval with feature liquid damping, not with adjustable stem and dial or NS 160 (vibratory stress conditions 25 ... 200 Hz, 5 g)
- Window of laminated safety glass or acrylic plastic
- Stem Ø 6, 10 mm
- Ingress protection IP 66
- Thermometers with electrical output signal (Data Sheet TV15.01)
- Special temperature range or dial printing to customer specifications (on request)
- Explosion-protected version, see marking on the instrument

Scale range, measuring range [1] , error limit (DIN EN 13 190)
Scale graduation per WIKA standard

Scale range in °C	Measuring range [1] in °C	Scale spacing in °C	Error limit ± °C
-30 ... +50	-20 ... +40	0.5	1
-20 ... +60	-10 ... +50	0.5	1
0 ... 60	10 ... 50	0.5	1
0 ... 80	10 ... 70	0.5	1
0 ... 100	10 ... 90	1	1
0 ... 120	10 ... 110	1	2
0 ... 160	20 ... 140	1	2
0 ... 200	20 ... 180	2	2
0 ... 250	30 ... 220	2	2.5
0 ... 300	30 ... 270	2	5
0 ... 400	50 ... 350	5	5
0 ... 500	50 ... 450	5	5

1) The measuring range is limited by two triangular marks on the dial. Within this range the specified error limit applies per DIN EN 13

Models

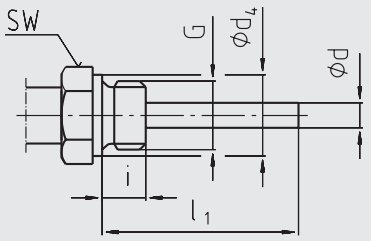
Version		Nominal size in mm				Design					
		63	80	100	160	S	1	2	3	4	5
Model 54	axial	A5400	A5401	A5402	A5403	x	x	x	x	x	x
	radial	R5440	R5441	R5442	R5443	x	x	x	x	x	x
Model 54, adjustable stem/dial		S5410	S5411	S5412	S5413	-	x	x	x	x	x

Design of connection

Design standard (male thread connection)

Standard stem lengths: l_1 = 100, 160, 200, 250 mm

Nominal size NS	Process connection G	i	Dimensions in mm SW	d_4	Ø d
63, 80, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



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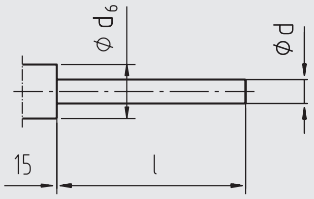
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Flats
Ø d Stem diameter

Design 1, plain stem (without thread)

Standard stem lengths: l = 100, 140, 160, 200, 240, 290 mm
The basis for design 4, compression fitting

Nominal size NS	Dimensions in mm d_6	Ød
63, 80, 100, 160	18	8



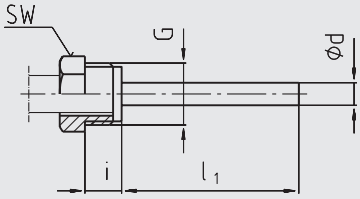
3073050.03 (G1)

Legend:
Ø d_6 Plain diameter
Ø d Stem diameter

Design 2, male nut

Standard stem lengths: l_1 = 140, 180, 230 mm

Nominal size NS	Process connection G	i	Dimensions in mm SW	Ød
63, 80, 100, 160	G ½ B	20	27	8
	M18 x 1.5	12	24	8



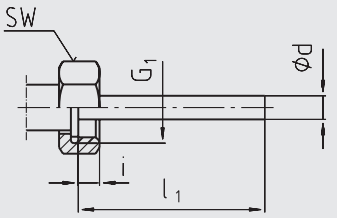
3073050.03 (G1)

Legend:
G Male thread
i Thread length incl. plain
SW Flats
Ø d Stem diameter

Design 3, union nut

Standard stem lengths: l_1 = 126, 186, 226, 276 mm

Nominal size NS	Process connection G_1	i	Dimensions in mm SW	Ød
63, 80, 100, 160	G ½	8.5	27	8
	G ¾	10.5	32	8
	M20 x 1.5	13.5	32	8



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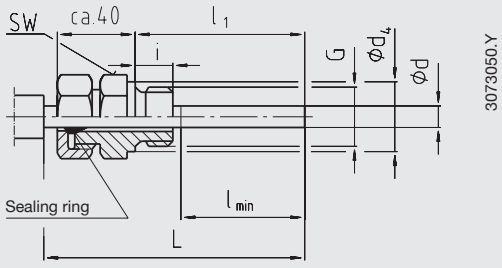
Legend:
G_1 Female thread
i Thread length
SW Flats
Ø d Stem diameter

Design 4, compression fitting (sliding on stem)
Stem lengths: l_1 = variable
Length: $L = l_1 + 40$ mm

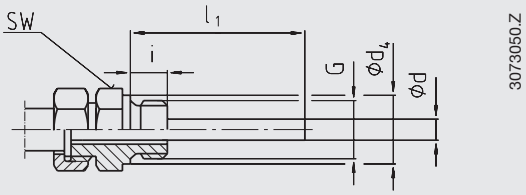
Nominal size	Process connection	Dimensions in mm		
NS	G	i	SW	d_4	Ød
63, 80, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Flats
Ø d Stem diameter

Design 5, union nut with fitting
Standard stem lengths: l_1 = 100, 160, 200, 250 mm

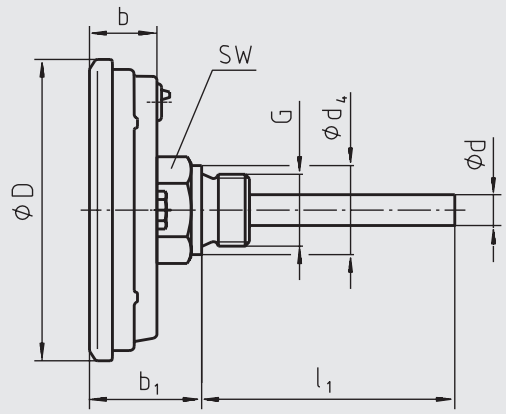
Nominal size	Process connection	Dimensions in mm		
NS	G	i	SW	d_4	Ø d
63, 80, 100, 160	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



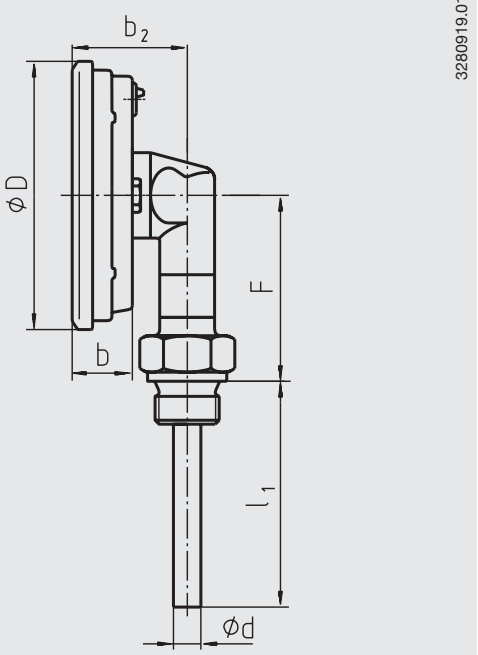
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Flats
Ø d Stem diameter

Dimensions and location of stem

Back mount (axial)



Lower mount (radial)

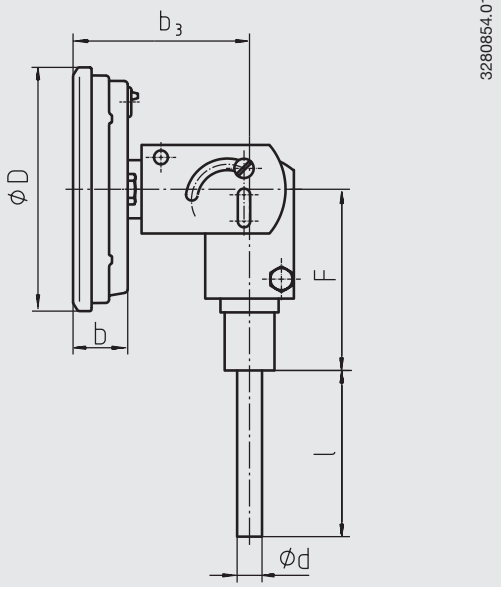


NS	Dimensions in mm							Weight in kg	
	b	b_1	b_2	Ø D	Ø d	Ø d_4	F	R	U
63	20	35	38	68	8 [1]	26	47	0.20	0.30
80	20	35	38	77	8 [1]	26	56	0.25	0.35
100	22	37	40	107	8 [1]	26	66	0.35	0.45
160	25	40	43	161	8 [1]	26	96	0.50	0.60

1) Option: Stem Ø 6, 10 mm

R back mount
U lower mount

Adjustable stem and dial



NS	Dimensions in mm					Weight in kg
	b	b_3	Ø D	Ø d	F	
63	20	63	68	8 [1]	66	0.35
80	20	63	77	8 [1]	66	0.40
100	22	65	107	8 [1]	66	0.50
160	25	68	161	8 [1]	66	0.65

1) Option: Stem Ø 6, 10 mm

Ordering information

Model / Nominal size / Scale range / Design of connection / Connection size / Length l, l_1 / Options

08/2009 GB

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www.wika.de

Bimetal thermometer
Model 53, process industry series

Applications

- Chemical industry, petrochemical industry, process technology and food industry
- Facility management
- For aggressive medium

Special features

- Universal application
- Case and stem from stainless steel
- Bimetal with zero point adjustment at the back of the case
- Nominal size 3" and 5"

Bimetal thermometer
Fig. left: back mount (axial), model A5301
Fig. right: adjustable stem and dial version, model S5301

Description

This series of thermometers is designed for installation in pipes, vessels, plant and machinery.

Sheath and case are made of stainless steel. To allow fitting to the process, different installation lengths and process connections are available. Through the high protection class of the thermometer (IP 65) and its liquid damping, operation under high vibration conditions is possible.

The imperial nominal sizes are commonly used in North American and related markets.

Standard version

Measuring element
Bimetal coil

Nominal size
3", 5"

Connection design
S Standard (male thread connection) [1)]
1 Plain stem (without thread)
2 Male nut
3 Union nut (female)
4 Compression fitting (sliding on stem)
5 Union nut with fitting

1) Not for version "adjustable stem and dial"

Models

Model	NS	Version
A5300	3"	Back mount (axial)
A5301	5"	
S5300	3"	Back mount, adjustable stem and dial
S5301	5"	

Accuracy class
EN 13190

Working pressure
Normal (1 year): Measuring range (EN 13190)
Short time (24 h max.): Scale range (EN 13190)

Case, bezel ring, stem, process connection
Stainless steel

Dial
Aluminium white, black lettering

Window
Instrument glass

Pointer
Aluminium, black, adjustable pointer

Zero adjustment
on the rear of the case, external

Permissible pressure rating of stem
max. 25 bar, static

Permissible ambient temperature at case
+60 °C max. (others on request)

Temperature limits for storage and transport
-20 ... +60 °C (EN 13190)

Ingress protection
IP 65 per EN 60529 / IEC 529

Options

- Scale range °F, °C/°F (dual scale)
- Liquid damping up to max. 250 °C (at the sensor)
- Laminated safety glass, acrylic plastic
- Stem diameter 6, 10 mm
- Ingress protection IP 66
- Special measuring ranges or dial printing to customer specifications (on request)
- Version per ATEX Ex II 2 GD c TX

Scale and measuring ranges [2)] (EN 13190)
Scale graduation per WIKA standard

Scale range in °C	Measuring range [2)] in °C	Scale spacing in °C
-50 ... +50	-40 ... +40	1
-30 ... +50	-20 ... +40	0.5
-20 ... +100	-10 ... +90	1
-20 ... +120	-10 ... +110	1
0 ... 60	10 ... 50	0.5
0 ... 80	10 ... 70	1
0 ... 100	10 ... 90	1
0 ... 120	10 ... 110	1
0 ... 160	20 ... 150	2
0 ... 200	20 ... 180	2
0 ... 250	30 ... 220	2
0 ... 300	30 ... 270	5
0 ... 400	50 ... 350	5
0 ... 500	40 ... 450	5

Scale range in °F	Measuring range [2)] in °F	Scale spacing in °F
-80 ... +120	-60 ... +100	2
-20 ... +120	0 ... 100	2
0 ... 210	20 ... 140	2
0 ... 250	30 ... 220	2
30 ... 400	80 ... 350	5

2) The measuring range is indicated on the dial by two triangular marks. Only within this range is the stated error limit valid per EN 13190.

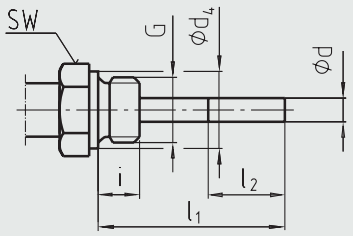
Connection design

Design standard (male thread connection) [1)]

Connection, male: ¼ NPT, ½ NPT, G ¼ B, G ½ B
Insertion length l_1 = 2,5", 4", 6", 9", 12", 15", 18", 24"
l_1 = 63, 100, 150, 225, 305, 380, 455, 610 mm

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	d_4	Ø d
3", 5"	¼ NPT	15	17	–	8
	½ NPT	19	22	–	8
	G ¼ B	12	22	18	8
	G ½ B	14	27	26	8

1) Not for version "adjustable stem and dial"



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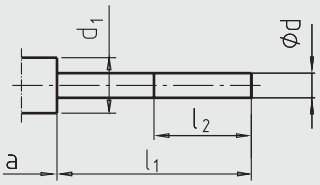
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Flats
Ø d Stem diameter
l_2 Active length

Design 1, plain stem (without thread)

Insertion length l_1 = 140, 200, 240, 290 mm

Nominal size	Dimensions in mm			
NS	d_1	Ød	a for axial	a for adjustable stem and dial
3", 5"	18	8	15	25



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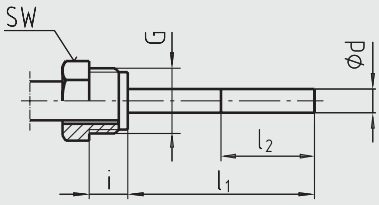
Legend:
a Distance to case/ articulated joint
Ø d_1 Plain diameter
Ø d Stem diameter
l_2 Active length

Design 2, male nut

Insertion length l_1 = 80, 140, 180, 230 mm

Nominal size	Process connection		Dimensions in mm	
NS	G	i	SW	Ød
3", 5"	G ½ B	20	27	8
	M18 x 1.5	12	24	8



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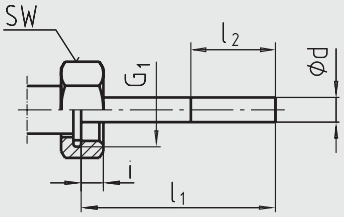
Legend:
G Male thread
i Thread length incl. collar
SW Flats
Ø d Stem diameter
l_2 Active length

Design 3, union nut

Insertion length l_1 = 89, 126, 186, 226, 276 mm

Nominal size	Process connection		Dimensions in mm	
NS	G_1	i	SW	Ød
3", 5"	G ½	8.5	27	8
	G ¾	10.5	32	8
	M24 x 1.5	13.5	32	8



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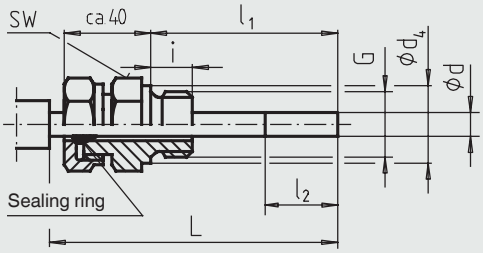
Legend:
G_1 Female thread
i Thread length
SW Flats
Ø d Stem diameter
l_2 Active length

Design 4, compression fitting (sliding on stem)

Standard insertion length l_1 = 63, 100, 160, 200, 250 mm
Length L = l_1 + 40 mm

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	d_4	Ød
3", 5"	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	M18 x 1.5	12	24	23	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



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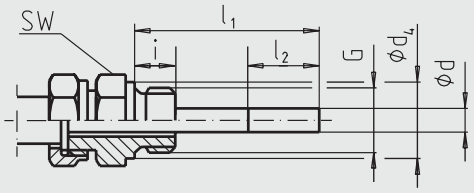
Legend:
G Male thread
i Thread length
Ø d_4 Diameter of the sealing collar
SW Flats
Ø d Stem diameter
l_2 Active length

Design 5, union nut with loose fitting

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

Nominal size	Process connection		Dimensions in mm		
NS	G	i	SW	d_4	Ød
3", 5"	G ½ B	14	27	26	8
	G ¾ B	16	32	32	8
	M18 x 1.5	12	24	23	8
	½ NPT	19	22	-	8
	¾ NPT	20	30	-	8



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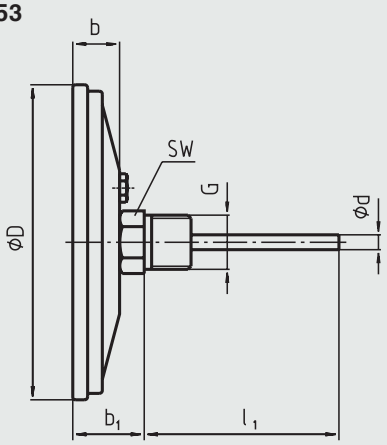
Legend:

G	Male thread	SW	Flats
i	Thread length	Ø d	Stem diameter
Ø d_4	Diameter of the sealing collar	l_2	Active length

Dimensions in mm

Back mount (axial)
Model A53



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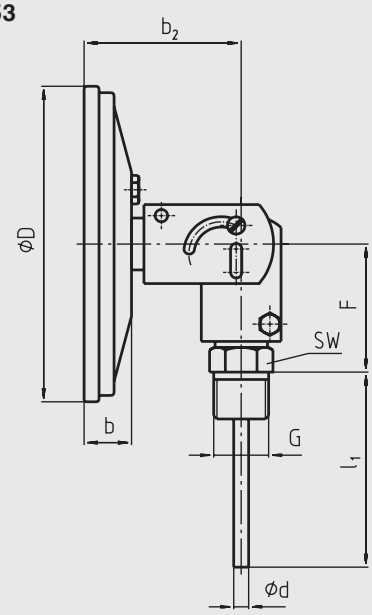
Back mount, adjustable stem and dial
Model S53



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NS	Dimensions in mm									Weight in kg	
	Ø D	Ø d	b	b_2	F	b_1 1)				Model A53xx	Model S53xx
						G ¼ B	¼ NPT	G ½ B	½ NPT		
3"	76	6	20	63	55	32	28	35	35	0.30	0.40
5"	127	6	20	63	55	32	28	35	35	0.40	0.50

1) With scale ranges ≥ 0 ... 300 °C the dimensions increase by 40 mm

Ordering information

Model / Nominal size / Scale range / Connection size / Connection location / Options

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12/2012 GB

Bimetal Thermometers
Industrial Series, Model 52

Applications

- Versatile thermometers for machine, tank, pipeline and apparatus construction
- Heating

Special Features

- Scale ranges from -30 °C to +500 °C
- Case and stem material stainless steel
- 5 different designs of connection
- Combination with many thermowell designs

Bimetal Thermometer Model A52.100

Description

This series of thermometers is designed for installation in pipes and tanks.
Versions with and without thermowell offer many possibilities for temperature measurement in liquid and gaseous media.

Use of the thermometers in potentially explosive atmospheres is possible without any Ex-specific marking in zones 1 and 2. (gases, ignition groups IIA, IIB, IIC)

Standard version

Temperature element
Bimetal helix

Nominal size in mm
25, 33, 40, 50, 63, 80, 100, 160

Design of connection
S Standard (male thread connection)
1 Plain stem (without thread)
2 Male nut
3 Union nut
4 Compression fitting (sliding on stem)

Location of stem
A52.XXX centre back (axial)
R52.XXX bottom (radial)

Accuracy class
NS 63, 80, 100, 160: 1 per DIN EN 13 190
NS 25, 33, 40, 50: 2 per DIN EN 13 190

Working range
Normal: measuring range per DIN EN 13 190
Short time (24 h max.): scale range per DIN EN 13 190

Case, bezel ring, stem, process connection and spacer
Stainless steel
NS 33: plastic

Elbow behind the case
Aluminium, only with radial entry version

Dial
Aluminium, white, lettering black

Window
Instrument glass
NS 33: polycarbonate

Pointer
NS 25, 33, 40: aluminium, black
NS 50, 63, 89, 100, 160: aluminium, black, adjustable pointer

Pressure rating of stem
NS 25, 33, 40, 50: 6 bar maximum, static
NS 63, 80, 100, 160: 25 bar maximum, static

Ingress protection
NS 25, 33, 40: IP 54 per EN 60 529 / IEC 529
NS 50, 63, 80, 100, 160: IP 43 per EN 60 529 / IEC 529

Options

- Scale range °F, °C/°F (dual scale)
- Other scale ranges
- Other connections

Scale, measuring ranges [1], error limit per (DIN EN 13 190)
Scale graduation per WIKA standard

Scale range in °C	Measuring range in °C	Scale spacing up to NS 63 in °C	from NS 80 in °C	Error limit up to NS 50 ± °C	from NS 63 ± °C
-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 [2]	+20 ... +180	5	2	4	2
0 ... 250 [2]	+30 ... +220	5	2	5	2.5
0 ... 300 [3]	+30 ... +270	5	2	-	5
0 ... 400 [3]	+50 ... +350	5	5	-	5
0 ... 500 [3]	+50 ... +450	5	5	-	5

1) The measuring range is indicated on the dial by two triangular marks.
Only within this range the stated limit of error is valid according to DIN EN 13 190.
2) Not with NS 33
3) Not with NS 25 up to NS 50

Models

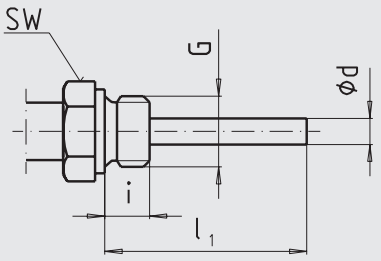
Nominal size	25	33	40	50	63	80	100	160
Design	S / 1				S / 1 / 2 / 3 / 4			
Model	A52.025	A52.033	A52.040	A52.050	A52.063	A52.080	A52.100	A52.160
					R52.063	R53.080	R52.100	R52.160

Design of connection

Design S, standard (male thread connection)

Standard stem lengths: l_1 = 63, 100, 160, 200, 250 mm

Nominal size NS	Process connection G	i	Dimensions in mm SW	Ø d
25, 33	M8 x 1.25	8	12	4
	G ⅛ B	8	17	4
	G ¼ B	8	17	4
40, 50	M8 x 1.25	8	17	4
	G ⅛ B	8	17	4
	G ¼ B	8	17	4
	G ½ B	14	27	4
63, 80, 100, 160	G ¼ B	8	17	6, 8
	G ½ B	14	27	6; 8
	M18 x 1.5	12	24	6; 8
	½ NPT	19	22	6; 8



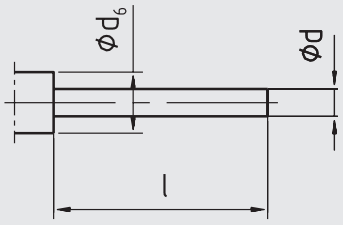
3323409U

Legend:
G Male thread
i Thread length
SW Flats
Ø d Stem diameter

Design 1, plain stem (without thread)

Standard stem lengths: l = 45, 63, 100, 140, 160, 200, 240, 290 mm

Nominal size NS	Dimensions in mm d_6	Ød
25, 33	8	4
40, 50	12	4
63, 80, 100, 160	18	6; 8



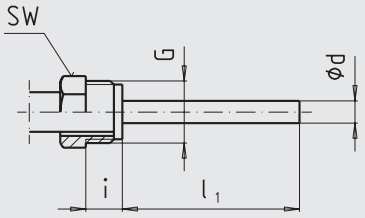
3323409V

Legend:
Ø d_6 Plain diameter
Ø d Stem diameter

Design 2, male nut

Standard stem lengths: l_1 = 80, 140, 180, 230 mm

Nominal size NS	Process connection G	i	Dimensions in mm SW	Ød
63, 80, 100, 160	G ½ B	20	27	6; 8
	M18 x 1.5	12	24	6; 8



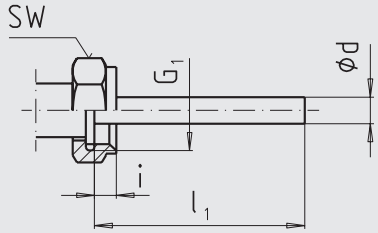
3323409W

Legend:
G Male thread
i Thread length incl. plain
SW Flats
Ø d Stem diameter

Design 3, union nut

Standard stem lengths: l_1 = 89, 126, 186, 226, 276 mm

Nominal size NS	Process connection G_1	i	Dimensions in mm SW	Ød
63, 80, 100, 160	G ½	8.5	27	6; 8
	G ¾	10.5	32	6; 8

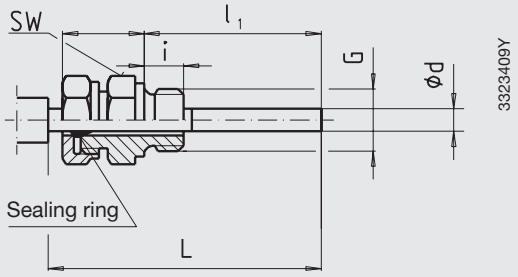


3323409X

Legend:
G_1 Female thread
i Thread length
SW Flats
Ø d Stem diameter

Design 4, Compression fitting (sliding on stem)
Stem length l_1: variable
Length L = l_1 + 40 mm

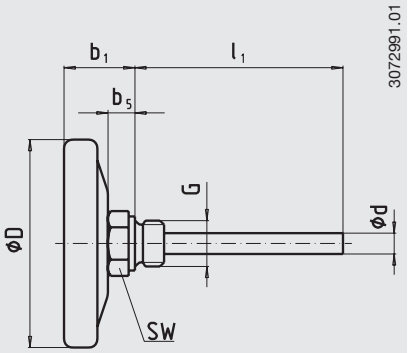
Nominal size NS	Process connection G	i	Dimensions in mm SW	Ød
63, 80, 100, 160	G ¼ B	8	17	6; 8
	G ½ B	14	27	6; 8
	M18 x 1.5	12	24	6; 8
	½ NPT	19	22	6; 8
	G ¾ B	14	27	6; 8
	¾ NPT	20	30	6; 8



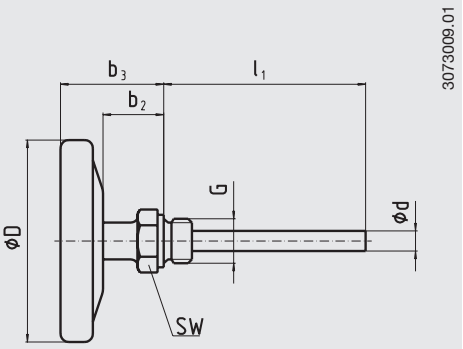
Legend:
G Male thread
i Thread length
SW Flats
Ø d Stem diameter

Location of stem

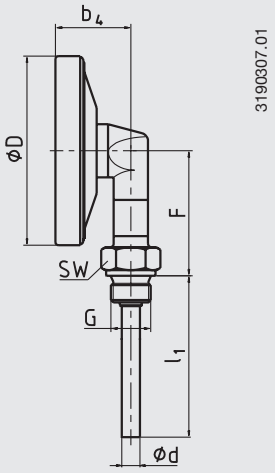
Centre back mount
(up to 250 °C)



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



Lower mount



NS	Dimensions in mm							Weight in kg		
	b_1	b_2	b_3	b_4	b_5	Ø D	F	R	RD	U
25	15	-	-	-	2	25	-	0.035	-	-
33	15	-	-	-	2	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 Centre back mount
RD Centre back mount with spacer
U Lower mount

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9019189 03/2009 GB

Bimetal thermometer
For heating technology
Model A43, standard version

Applications

- Heating systems
- Hot water tanks
- Solar collectors
- Heat transfer stations

Special features

- Reliable and cost-effective
- Indication accuracy class 2 in accordance with EN 13190
- Scale ranges from -30 ... +120 °C

Upper fig.: Steel case, galvanised
Lower fig.: Plastic case

Description

The model A43 bimetal thermometer was developed as a standard version for simple temperature indication in heating applications.

Its modular design enables a multitude of combinations of case materials, nominal sizes, scale ranges and stem lengths. This ensures that the basic dimensions are maintained.

The standard scope of delivery of the model A43 includes a thermowell. The thermowell can be operated with an operating pressure up to a maximum of 6 bar.

The model A43 is manufactured to tolerance class 2 in accordance with EN 13190 and thus offers the required indication accuracy for heating technology.

Standard version

Measuring element
Bimetal coil

Nominal size
63, 80, 100

Working range
Full scale value

Case
Model A43.10: Aluminium
Model A43.20: Steel, galvanised
Model A43.30: Plastic, black

Connection location
Back mount (BM), centre

Process connection
Thermowell G ½ B, copper alloy

Stem
Aluminium

Thermowell
Copper alloy
Removable, friction fit

Permissible operating pressure at thermowell
Max. 6 bar

Dial
Plastic, white, black lettering

Pointer
Plastic, black

Window
NS 63: PS
NS 80, 100: SAN

Indication accuracy
Class 2 per EN 13190

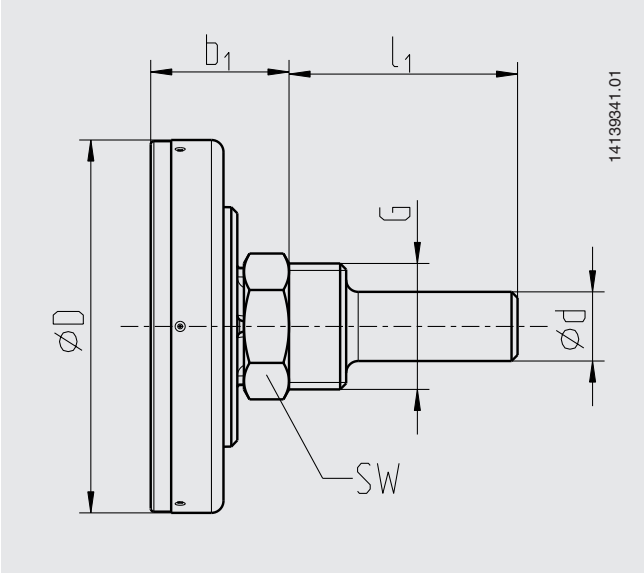
Zero adjustment
At bottom of stem

Options

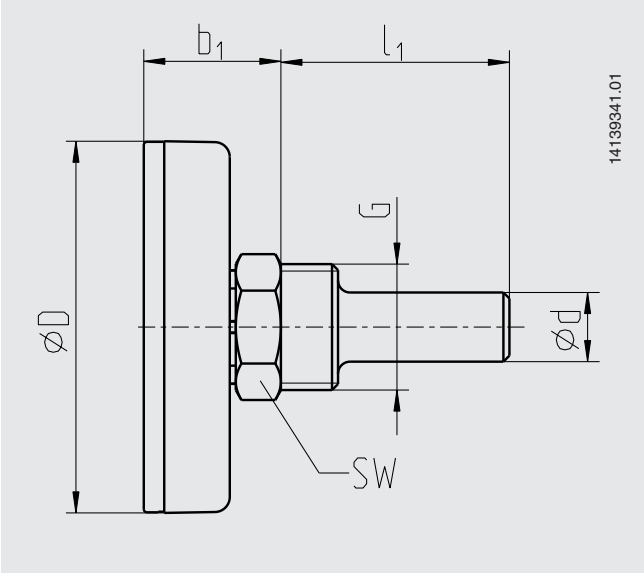
- Other scale ranges
- Slip-on bezel, nickel-plated
- Removable brass thermowell with retainer screw

Dimensions in mm

Model A43.10, A43.20



Model A43.30



NS	Dimensions in mm						
	b_1	Ø d	Ø D	l_1		G	SW
63	24	11.5 [1]	63 (61.6 ... 62.2)	40, 60, 100	(optional: 160)	G 1/2 B	SW 21
80	24	11.5 [1]	80 (78.6 ... 79.4)	40, 60, 100	(optional: 160)	G 1/2 B	SW 21
100	24	11.5 [1]	100 (98.6 ... 99.4)	40, 60, 100	(optional: 160)	G 1/2 B	SW 21

1) With l_1 = 160: Ø d = 11.0 mm

Ordering information

Model / Nominal size / Scale range / Process connection / Length l_1 / Options

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