

## Bimetal thermometer Model 53, industrial series

WIKA data sheet TM 53.01



for further approvals  
see page 5

### 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 adjustment at the back of the case
- Nominal size 3" and 5"
- Embossed dial (no parallax reading errors)

### 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.



#### Bimetal thermometer

Fig. left: back mount (axial), model A5301

Fig. right: adjustable stem and dial version,  
model S5301

## Standard version

### Measuring element

Bimetal coil

### Nominal size

3", 5"

### Connection design

S Standard (male thread connection) <sup>1)</sup>

- 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 range

Normal (1 year): Measuring range (EN 13190)

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

### Case, bezel ring, stem, process connection

Stainless steel 1.4301 (304)

### Case, bezel ring, stem, process connection

Stainless steel 1.4571 (316Ti)

### Dial

Aluminium white, black lettering

### Window

Instrument glass

### Pointer

Aluminium, black, adjustable pointer

### Zero adjustment

on the rear of the case, external

### Insertion length L<sub>1</sub>

63 ... 1,000 mm

minimum/maximum length depends on the measuring range and diameter

### Permissible pressure rating of stem

max. 25 bar, static

### Permissible ambient temperature at case

-20 ... +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 60529

## 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 <sup>2)</sup> (EN 13190)

#### Scale graduation per WIKA standard

Scale range in °C	Measuring range <sup>2)</sup> 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 <sup>2)</sup> 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

<sup>2)</sup> 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) <sup>1)</sup>

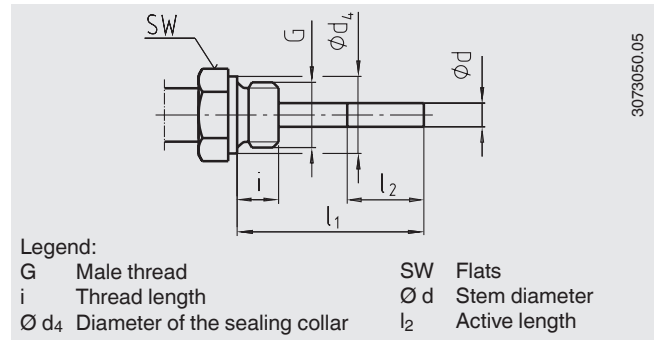
Connection, male: ¼ NPT, ½ NPT, G ¼ B, G ½ B

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 NS	Process connection		Dimensions in mm		
	G	i	SW	d <sub>4</sub>	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

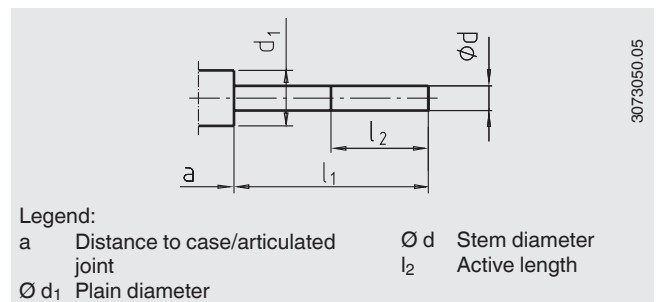
1) Not for version "adjustable stem and dial"



### Design 1, plain stem (without thread)

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

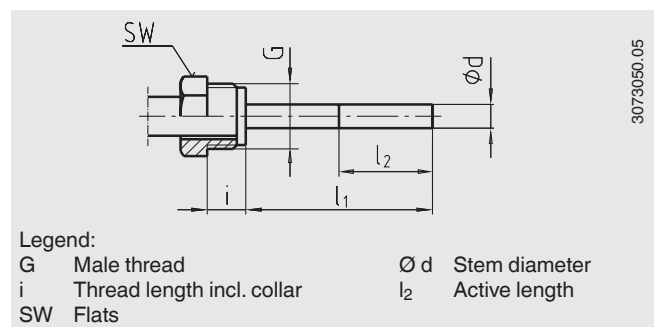
Nominal size NS	Dimensions in mm			
	d <sub>1</sub>	Ø d	a for axial	a for adjustable stem and dial
3", 5"	18	8	15	25



### Design 2, male nut

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

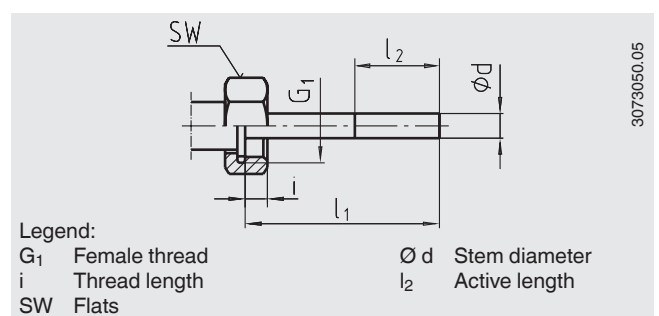
Nominal size NS	Process connection		Dimensions in mm	
	G	i	SW	Ø d
3", 5"	G ½ B	20	27	8
	M18 x 1.5	12	24	8



### Design 3, union nut

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

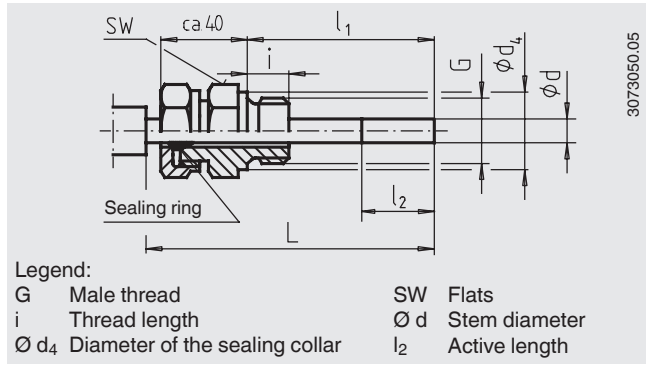
Nominal size NS	Process connection		Dimensions in mm	
	G <sub>1</sub>	i	SW	Ø d
3", 5"	G ½	8.5	27	8
	G ¾	10.5	32	8
	M24 x 1.5	13.5	32	8



### Design 4, compression fitting (sliding on stem)

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

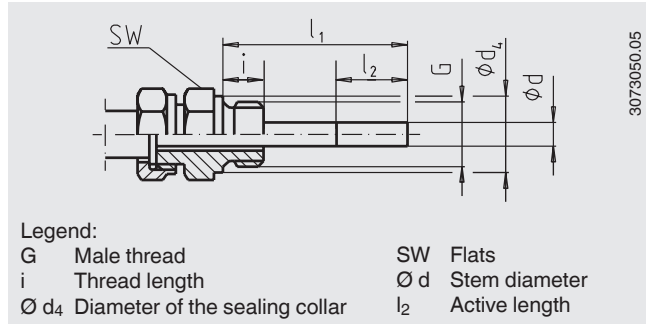
Nominal size NS	Process connection		Dimensions in mm		
	G	i	SW	$d_4$	$\varnothing d$
3", 5"	G 1/2 B	14	27	26	8
	G 3/4 B	16	32	32	8
	M18 x 1.5	12	24	23	8
	1/2 NPT	19	22	-	8
	3/4 NPT	20	30	-	8



### Design 5, union nut with loose fitting

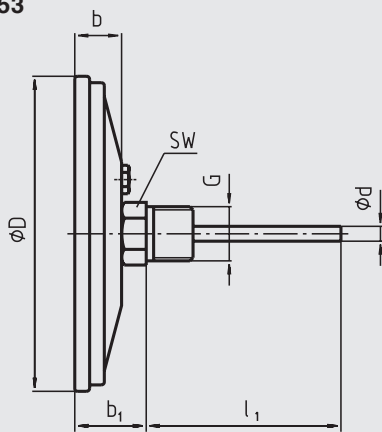
Standard insertion length  $l_1 = 63, 100, 160, 200, 250$  mm

Nominal size NS	Process connection		Dimensions in mm		
	G	i	SW	$d_4$	$\varnothing d$
3", 5"	G 1/2 B	14	27	26	8
	G 3/4 B	16	32	32	8
	M18 x 1.5	12	24	23	8
	1/2 NPT	19	22	-	8
	3/4 NPT	20	30	-	8



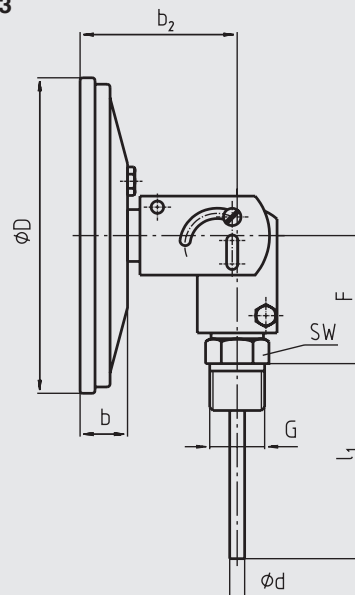
## Dimensions in mm

### 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				F	Weight in kg					
	$\varnothing D$	$\varnothing d$	b	$b_2$		Model A53xx    Model S53xx					
						$b_1$ 1)		G 1/2 B	1/2 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  $\geq 0 \dots 300$  °C the dimensions increase by 40 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 for the thermowell, see Technical information IN 00.15.

## CE conformity

### ATEX directive (option)

94/9/EG, II 2 GD c TX

## Approvals (options)

- **EAC**, import certificate, ignition protection type "c" - constructional safety , customs union Russia/Belarus/ Kazakhstan
- **GOST**, metrology, measurement technology, Russia
- **CRN**, 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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