

# Bimetal thermometer

## For the process industry per EN 13190, premium version

### Model 55

WIKA data sheet TM 55.01



for further approvals  
see page 9

#### 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
- Completely from stainless steel
- Individual stem length from 63 ... 1,000 mm

#### Description

The model 55 bimetal thermometer has been developed and is manufactured in accordance with the EN 13190 standard. This 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 can be made from 316L to fulfil the highest requirements.

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



**Fig. left: Bimetal thermometer, model R5502**

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

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 (optionally also up to -50 °C or -70 °C in the POLARgauge® version).

## Specifications

| Version  |  |
|--|--|
| <b>Standard</b>                                | EN 13190   |
| <b>Nominal size</b>                            | <ul style="list-style-type: none"> <li>■ 63</li> <li>■ 100</li> <li>■ 160</li> </ul>   |
| <b>Window</b>                                  | <ul style="list-style-type: none"> <li>■ Instrument glass</li> <li>■ Window from polycarbonate (NS 63)</li> <li>■ Laminated safety glass, clear non-splintering plastic</li> </ul> |
| Connection location                            |  |
| A5525  | NS 63 Back mount (axial)   |
| A5500  | NS 100 Back mount (axial)  |
| A5501  | NS 160 Back mount (axial)  |
| R5526  | NS 63 Lower mount (radial)   |
| R5502  | NS 100 Lower mount (radial)  |
| R5503  | NS 160 Lower mount (radial)  |
| S5550  | NS 100 Back mount, adjustable stem and dial  |
| S5551  | NS 160 Back mount, adjustable stem and dial  |
| <b>Connection design</b>                       | → For drawings, see page 10  |
| S  | Standard (male threaded connection)  |
| 1  | Plain stem (without thread)  |
| 2  | Male nut   |
| 3  | Union nut  |
| 4  | Compression fitting (sliding on stem)  |
| 4.1  | Compression fitting with support tube sliding on stem  |
| 5  | Union nut and loose threaded connection  |
| <b>“Adjustable stem and dial” case version</b> | Swivelling 90° and rotatable 360°  |
| <b>Dampening, case filling (option)</b>        | <ul style="list-style-type: none"> <li>■ Without</li> <li>■ With silicone oil case filling, up to max. 250 °C (at the probe)</li> </ul>  |
| Material (in contact with the environment)     |  |
| Case, bayonet ring                             | <ul style="list-style-type: none"> <li>■ Stainless steel 304SS</li> <li>■ Stainless steel 316L</li> </ul>  |
| Articulated joint (“adjustable stem and dial”) | Stainless steel  |

| Measuring element                |   |
|----------------------------------|---|
| <b>Type of measuring element</b> | Bimetal coil  |
| <b>Nominal effective range</b>   |   |
| Continuous load (1 year)         | Measuring range (EN 13190)  |
| Short time (max. 24 h)           | Scale range (EN 13190)  |
| <b>Material movement</b>         | <ul style="list-style-type: none"> <li>■ Combination of brass and stainless steel</li> <li>■ Completely from stainless steel</li> </ul> |

| Accuracy specifications         |  |
|---------------------------------|--|
| <b>Accuracy</b>                 | Class 1 per EN 13190   |
| <b>Zero adjustment (option)</b> | On the rear side of the case, external only for adjustable stem and dial |

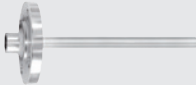

| Scale range in °C | Measuring range in °C <sup>1)</sup> | Scale spacing in °C |
|-------------------|-------------------------------------|---------------------|
| -70 ... +70       | -50 ... +50                         | 2                   |
| -70 ... +30       | -60 ... +20                         | 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                         | 10                  |


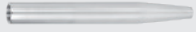


| Scale range in °F | Measuring range in °F <sup>1)</sup> | Scale spacing in °F |
|-------------------|-------------------------------------|---------------------|
| -80 ... +120      | -40 ... +100                        | 2                   |
| -80 ... +240      | -50 ... +210                        | 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.

| Further information on: Scale range            |  |                   |
|--|--|-------------------|
| <b>Unit</b>                                    | <ul style="list-style-type: none"> <li>■ °C</li> <li>■ °F</li> <li>■ °C/°F (dual scale)</li> <li>■ °F/°C (dual scale)</li> </ul> |                   |
| <b>Overtemperature stability</b> <sup>1)</sup> |  |                   |
| Scale range -70 ... +120 °C                    | 100 % overload safety of scale range   |                   |
| Scale range 120 ... 280 °C                     | 50 % overload safety of scale range  |                   |
| Scale range 280 ... 400 °C                     | Max. 430 °C of scale range   |                   |
| Scale range 400 ... 600 °C                     | Max. full scale value  |                   |
| <b>Dial</b>                                    |  |                   |
| Scale graduation                               | <ul style="list-style-type: none"> <li>■ Single scale</li> <li>■ Dual scale</li> </ul>   |                   |
| Scale colour                                   | Single scale   | Black             |
|  | Dual scale   | Red               |
|  |  | Others on request |
| Material                                       | Aluminium  |                   |
| <b>Pointer</b>                                 |  |                   |
| Version  | Instrument pointer with micro adjustment   |                   |
| Pointer colour                                 | Black  |                   |
| Material                                       | Aluminium  |                   |

1) Overtemperature stability only in non-Ex area

| Process connection                |   |   |
|-----------------------------------|---|---|
| <b>Thread size</b>                | <ul style="list-style-type: none"> <li>■ Plain, without thread</li> <li>■ G ½ B</li> <li>■ ½ NPT</li> <li>■ G ½ B female</li> <li>■ ½ NPT female</li> <li>■ M20 x 1.5</li> <li>■ M24 x 1.5 female</li> </ul> Others on request  |   |
| <b>Material (wetted)</b>          | Stainless steel 316SS   |   |
| <b>Stem</b>                       |   |   |
| Diameter                          | <ul style="list-style-type: none"> <li>■ 8 mm</li> <li>■ 6 mm</li> <li>■ 10 mm</li> <li>■ 12 mm</li> </ul>  |   |
| Material (wetted)                 | Stainless steel 316SS   |   |
| <b>Thermowell/protection tube</b> | <p>In principle, the operation of a mechanical thermometer is possible without a thermowell/protection tube with low process-side loading (low pressure, low viscosity and low flow velocities).</p> <p>However, in order to enable exchanging the thermometer during operation (e.g. instrument replacement or calibration) and to ensure a better protection of the measuring instrument and also the plant and the environment, it is advisable to use a thermowell/protection tube from the extensive WIKA portfolio.</p> <p>→ For further information on the wake frequency calculation, see Technical information IN 00.15.</p> |   |
| Model TW10                        |    | <ul style="list-style-type: none"> <li>→ see data sheet TW 95.10</li> <li>→ see data sheet TW 95.11</li> <li>→ see data sheet TW 95.12</li> </ul> |
| Model TW15                        |    | → see data sheet TW 95.15   |

| Process connection  |   |                           |
|---------------------|---|---------------------------|
| Model TW20          |  | → see data sheet TW 95.20 |
| Model TW25          |  | → see data sheet TW 95.25 |
| Model TW30          |  | → see data sheet TW 95.30 |
| ScrutonWell® design |  | → see data sheet SP 05.16 |

| Operating conditions                                 |  |
|--|--|
| <b>Ambient temperature range (on case)</b>           | <ul style="list-style-type: none"> <li>■ -40 ... +70 °C (with/without fill fluid)</li> <li>■ -50 ... +70 °C</li> <li>■ -70 ... +60 °C ( <b>POLARGauge</b>® version)</li> </ul> |
| <b>Storage temperature range</b>                     | -50 ... +70 °C   |
| <b>Max. operating pressure at the stem</b>           | Max. 25 bar, static  |
| <b>Ingress protection (IP code) per IEC/EN 60529</b> | <ul style="list-style-type: none"> <li>■ IP65</li> <li>■ IP66</li> <li>■ IP67</li> </ul>   |

| Minimum insertion length in mm |         |     |      |               |     |      |
|--------------------------------|---------|-----|------|---------------|-----|------|
| Design                         | 1 and 2 |     |      | 3, 4, 5 and S |     |      |
| Stem diameter in mm            | 6       | 8   | ≥ 10 | 6             | 8   | ≥ 10 |
| Scale range in °C              |         |     |      |               |     |      |
| <b>Model A55 (back mount)</b>  |         |     |      |               |     |      |
| -70 ... +70                    | 63      | 63  | 63   | 69            | 63  | 64   |
| -70 ... +30                    | 63      | 63  | 63   | 82            | 69  | 73   |
| -50 ... +50                    | 63      | 63  | 63   | 80            | 68  | 73   |
| -50 ... +100                   | 63      | 63  | 63   | 69            | 63  | 63   |
| -50 ... +200                   | 63      | 63  | 63   | 78            | 69  | 67   |
| -50 ... +300                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +400                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +500                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -40 ... +40                    | 79      | 65  | 63   | 98            | 79  | 79   |
| -40 ... +60                    | 65      | 63  | 63   | 79            | 72  | 73   |
| -40 ... +80                    | 63      | 63  | 63   | 80            | 68  | 69   |
| -40 ... +160                   | 63      | 63  | 63   | 67            | 63  | 63   |
| -30 ... +30                    | 90      | 72  | 80   | 109           | 91  | 99   |
| -30 ... +50                    | 69      | 63  | 63   | 88            | 75  | 81   |
| -30 ... +70                    | 65      | 63  | 63   | 79            | 72  | 71   |
| -20 ... +40                    | 88      | 70  | 80   | 107           | 89  | 99   |
| -20 ... +60                    | 68      | 63  | 63   | 87            | 74  | 78   |
| -20 ... +80                    | 63      | 63  | 63   | 78            | 66  | 68   |
| -20 ... +100                   | 63      | 63  | 63   | 71            | 63  | 66   |
| -20 ... +120                   | 63      | 63  | 63   | 67            | 63  | 63   |
| -20 ... +140                   | 63      | 63  | 63   | 66            | 63  | 63   |
| -10 ... +50                    | 88      | 70  | 80   | 107           | 89  | 89   |
| 0 ... 60                       | 77      | 70  | 80   | 96            | 89  | 89   |
| 0 ... 80                       | 68      | 63  | 63   | 87            | 74  | 78   |

| Minimum insertion length in mm |         |     |      |               |     |      |
|--------------------------------|---------|-----|------|---------------|-----|------|
| Design                         | 1 and 2 |     |      | 3, 4, 5 and S |     |      |
| Stem diameter in mm            | 6       | 8   | ≥ 10 | 6             | 8   | ≥ 10 |
| Scale range in °C              |         |     |      |               |     |      |
| 0 ... 100                      | 63      | 63  | 63   | 72            | 63  | 67   |
| 0 ... 120                      | 63      | 63  | 63   | 69            | 63  | 64   |
| 0 ... 150                      | 63      | 63  | 63   | 66            | 63  | 63   |
| 0 ... 160                      | 63      | 63  | 63   | 63            | 63  | 63   |
| 0 ... 200                      | 63      | 63  | 63   | 63            | 63  | 63   |
| 0 ... 250                      | 63      | 63  | 63   | 73            | 69  | 68   |
| 0 ... 300                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 400                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 500                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 600                      | 119     | 119 | 119  | 119           | 119 | 119  |
| <b>Model R55 (lower mount)</b> |         |     |      |               |     |      |
| -70 ... +70                    | 63      | 63  | 63   | 79            | 68  | 65   |
| -70 ... +30                    | 68      | 63  | 63   | 87            | 69  | 75   |
| -50 ... +50                    | 63      | 63  | 63   | 82            | 72  | 72   |
| -50 ... +100                   | 63      | 63  | 63   | 73            | 64  | 63   |
| -50 ... +200                   | 63      | 63  | 63   | 69            | 63  | 63   |
| -50 ... +300                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +400                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +500                   | 119     | 119 | 119  | 119           | 119 | 119  |
| -40 ... +40                    | 72      | 63  | 63   | 91            | 82  | 75   |
| -40 ... +60                    | 63      | 63  | 63   | 81            | 71  | 71   |
| -40 ... +80                    | 63      | 63  | 63   | 78            | 69  | 69   |
| -40 ... +160                   | 63      | 63  | 63   | 75            | 64  | 64   |
| -30 ... +30                    | 87      | 72  | 72   | 106           | 91  | 91   |
| -30 ... +50                    | 68      | 63  | 63   | 87            | 75  | 75   |
| -30 ... +70                    | 63      | 63  | 63   | 81            | 71  | 71   |
| -20 ... +40                    | 85      | 68  | 68   | 104           | 87  | 87   |
| -20 ... +60                    | 67      | 63  | 63   | 87            | 74  | 74   |
| -20 ... +80                    | 63      | 63  | 63   | 78            | 67  | 67   |
| -20 ... +100                   | 63      | 63  | 63   | 74            | 65  | 65   |
| -20 ... +120                   | 63      | 63  | 63   | 73            | 64  | 64   |
| -20 ... +140                   | 63      | 63  | 63   | 74            | 64  | 67   |
| -10 ... +50                    | 85      | 68  | 68   | 104           | 87  | 87   |
| 0 ... 60                       | 77      | 67  | 67   | 96            | 86  | 86   |
| 0 ... 80                       | 67      | 63  | 63   | 86            | 74  | 74   |
| 0 ... 100                      | 63      | 63  | 63   | 78            | 67  | 67   |
| 0 ... 120                      | 63      | 63  | 63   | 73            | 65  | 65   |
| 0 ... 150                      | 63      | 63  | 63   | 73            | 64  | 64   |
| 0 ... 160                      | 63      | 63  | 63   | 74            | 67  | 67   |
| 0 ... 200                      | 63      | 63  | 63   | 73            | 63  | 63   |
| 0 ... 250                      | 63      | 63  | 63   | 82            | 72  | 72   |
| 0 ... 300                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 400                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 500                      | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 600                      | 119     | 119 | 119  | 119           | 119 | 119  |

| Minimum insertion length in mm                          |         |     |      |               |     |      |
|---|---------|-----|------|---------------|-----|------|
| Design  | 1 and 2 |     |      | 3, 4, 5 and S |     |      |
| Stem diameter in mm                                     | 6       | 8   | ≥ 10 | 6             | 8   | ≥ 10 |
| Scale range in °C                                       |         |     |      |               |     |      |
| <b>Model S55 (back mount, adjustable stem and dial)</b> |         |     |      |               |     |      |
| -70 ... +70   | 63      | 63  | 63   | 78            | 67  | 63   |
| -70 ... +30   | 75      | 63  | 63   | 94            | 80  | 80   |
| -50 ... +50   | 67      | 63  | 63   | 86            | 78  | 78   |
| -50 ... +100  | 66      | 63  | 63   | 85            | 76  | 68   |
| -50 ... +200  | 67      | 63  | 63   | 86            | 78  | 67   |
| -50 ... +300  | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +400  | 119     | 119 | 119  | 119           | 119 | 119  |
| -50 ... +500  | 119     | 119 | 119  | 119           | 119 | 119  |
| -40 ... +40   | 90      | 74  | 63   | 109           | 93  | 74   |
| -40 ... +60   | 67      | 63  | 63   | 86            | 78  | 78   |
| -40 ... +80   | 63      | 63  | 63   | 80            | 70  | 70   |
| -40 ... +160  | 63      | 63  | 63   | 67            | 63  | 63   |
| -30 ... +30   | 101     | 77  | 77   | 120           | 96  | 96   |
| -30 ... +50   | 78      | 66  | 66   | 96            | 85  | 85   |
| -30 ... +70   | 72      | 63  | 63   | 91            | 80  | 80   |
| -20 ... +40   | 99      | 80  | 80   | 118           | 99  | 99   |
| -20 ... +60   | 77      | 65  | 65   | 96            | 79  | 79   |
| -20 ... +80   | 66      | 63  | 63   | 85            | 74  | 74   |
| -20 ... +100  | 63      | 63  | 63   | 76            | 68  | 68   |
| -20 ... +120  | 63      | 63  | 63   | 73            | 66  | 66   |
| -20 ... +140  | 63      | 63  | 63   | 71            | 64  | 64   |
| -10 ... +50   | 99      | 80  | 80   | 118           | 99  | 99   |
| 0 ... 60  | 94      | 75  | 74   | 113           | 94  | 94   |
| 0 ... 80  | 77      | 65  | 65   | 96            | 79  | 79   |
| 0 ... 100   | 63      | 63  | 63   | 82            | 73  | 73   |
| 0 ... 120   | 63      | 63  | 63   | 75            | 67  | 67   |
| 0 ... 150   | 63      | 63  | 63   | 71            | 64  | 64   |
| 0 ... 160   | 63      | 63  | 63   | 66            | 63  | 63   |
| 0 ... 200   | 63      | 63  | 63   | 63            | 63  | 63   |
| 0 ... 250   | 66      | 63  | 63   | 85            | 73  | 73   |
| 0 ... 300   | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 400   | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 500   | 119     | 119 | 119  | 119           | 119 | 119  |
| 0 ... 600   | 119     | 119 | 119  | 119           | 119 | 119  |

| Minimum insertion length in mm |         |    |      |               |    |      |
|--------------------------------|---------|----|------|---------------|----|------|
| Design                         | 1 and 2 |    |      | 3, 4, 5 and S |    |      |
| Stem diameter in mm            | 6       | 8  | ≥ 10 | 6             | 8  | ≥ 10 |
| Scale range in °F              |         |    |      |               |    |      |
| <b>Model A55 (back mount)</b>  |         |    |      |               |    |      |
| -100 ... +150                  | 68      | 63 | 63   | 87            | 76 | 69   |
| -80 ... +120                   | 63      | 63 | 63   | 82            | 69 | 81   |
| -80 ... +240                   | 63      | 63 | 63   | 81            | 71 | 67   |
| -40 ... +120                   | 75      | 63 | 63   | 94            | 81 | 75   |
| -20 ... +120                   | 71      | 63 | 65   | 90            | 75 | 79   |








| Minimum insertion length in mm                          |         |     |      |               |     |      |
|---|---------|-----|------|---------------|-----|------|
| Design  | 1 and 2 |     |      | 3, 4, 5 and S |     |      |
| Stem diameter in mm                                     | 6       | 8   | ≥ 10 | 6             | 8   | ≥ 10 |
| Scale range in °F                                       |         |     |      |               |     |      |
| 0 ... 140   | 68      | 63  | 63   | 87            | 74  | 78   |
| 0 ... 200   | 63      | 63  | 63   | 72            | 63  | 69   |
| 0 ... 250   | 63      | 63  | 63   | 66            | 63  | 69   |
| 30 ... 300  | 63      | 63  | 63   | 66            | 63  | 63   |
| 30 ... 400  | 63      | 63  | 63   | 63            | 63  | 63   |
| 50 ... 300  | 63      | 63  | 63   | 65            | 63  | 63   |
| 50 ... 400  | 63      | 63  | 63   | 63            | 63  | 63   |
| 100 ... 800   | 119     | 119 | 119  | 119           | 119 | 119  |
| 150 ... 750   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 700   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 1,000   | 119     | 119 | 119  | 119           | 119 | 119  |
| <b>Model R55 (lower mount)</b>                          |         |     |      |               |     |      |
| -100 ... +150   | 75      | 63  | 63   | 94            | 80  | 80   |
| -80 ... +120  | 68      | 63  | 63   | 87            | 75  | 75   |
| -80 ... +240  | 63      | 63  | 63   | 81            | 71  | 71   |
| -40 ... +120  | 71      | 63  | 63   | 90            | 79  | 79   |
| -20 ... +120  | 69      | 63  | 63   | 88            | 76  | 74   |
| 0 ... 140   | 67      | 63  | 63   | 86            | 74  | 74   |
| 0 ... 200   | 63      | 63  | 63   | 75            | 66  | 66   |
| 0 ... 250   | 63      | 63  | 63   | 74            | 65  | 65   |
| 30 ... 300  | 63      | 63  | 63   | 74            | 66  | 66   |
| 30 ... 400  | 63      | 63  | 63   | 73            | 63  | 63   |
| 50 ... 300  | 63      | 63  | 63   | 74            | 64  | 64   |
| 50 ... 400  | 63      | 63  | 63   | 75            | 63  | 63   |
| 100 ... 800   | 119     | 119 | 119  | 119           | 119 | 119  |
| 150 ... 750   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 700   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 1,000   | 119     | 119 | 119  | 119           | 119 | 119  |
| <b>Model S55 (back mount, adjustable stem and dial)</b> |         |     |      |               |     |      |
| -100 ... +150   | 71      | 63  | 63   | 90            | 80  | 74   |
| -80 ... +120  | 81      | 66  | 66   | 100           | 85  | 85   |
| -80 ... +240  | 63      | 63  | 63   | 81            | 71  | 71   |
| -40 ... +120  | 85      | 72  | 66   | 104           | 91  | 85   |
| -20 ... +120  | 74      | 63  | 65   | 93            | 75  | 79   |
| 0 ... 140   | 77      | 65  | 65   | 96            | 79  | 79   |
| 0 ... 200   | 63      | 63  | 63   | 73            | 65  | 69   |
| 0 ... 250   | 63      | 63  | 63   | 72            | 64  | 64   |
| 30 ... 300  | 63      | 63  | 63   | 73            | 65  | 65   |
| 30 ... 400  | 63      | 63  | 63   | 64            | 63  | 63   |
| 50 ... 300  | 63      | 63  | 63   | 74            | 66  | 66   |
| 50 ... 400  | 63      | 63  | 63   | 65            | 63  | 63   |
| 100 ... 800   | 119     | 119 | 119  | 119           | 119 | 119  |
| 150 ... 750   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 700   | 119     | 119 | 119  | 119           | 119 | 119  |
| 200 ... 1,000   | 119     | 119 | 119  | 119           | 119 | 119  |

The technical feasibility of minimum insertion lengths in conjunction with capillary > 15 m should be tested beforehand.



## Approvals

### Optional approvals

| Logo  | Description   | Country                     |
|---|---|-----------------------------|
|  | <b>EU declaration of conformity</b><br>ATEX directive<br>Hazardous areas<br>Zone 1 gas II 2G c TX X<br>Zone 21 dust II 2D c TX X                      | European Union              |
|  | <b>EAC</b><br>EMC directive<br>Low voltage directive<br>Hazardous areas<br>Zone 1 gas II Gb IIC T6 ... T1 X*<br>Zone 21 dust III Db T65 ... T360°C X* | Eurasian Economic Community |
|  | <b>GOST</b><br>Metrology, measurement technology  | Russia                      |
|  | <b>KazInMetr</b><br>Metrology, measurement technology   | Kazakhstan                  |
| -   | <b>MTSCHS</b><br>Permission for commissioning   | Kazakhstan                  |
|  | <b>BelGIM</b><br>Metrology, measurement technology  | Belarus                     |
|  | <b>UkrSEPRO</b><br>Metrology, measurement technology  | Ukraine                     |
|  | <b>Uzstandard</b><br>Metrology, measurement technology  | Uzbekistan                  |
| -   | <b>CRN</b><br>Safety (e.g. electr. safety, overpressure, ...)   | Canada                      |

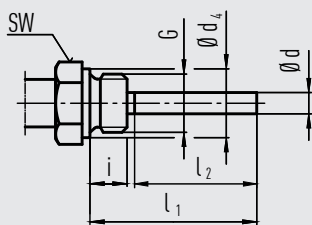
## Certificates (option)

| Certificates        |   |
|---------------------|---|
| <b>Certificates</b> | <ul style="list-style-type: none"> <li>■ 2.2 test report</li> <li>■ 3.1 inspection certificate</li> </ul> |
| <b>Calibration</b>  | DKD/DAkkS calibration certificate   |

Approvals and certificates, see website

## Connection designs

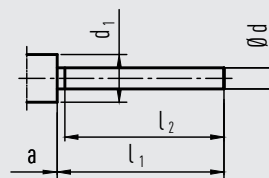
### Standard design (male thread connection)



Connection, male: G ½ B, G ¾ B, ½ NPT, ¾ NPT  
 Standard insertion length  $l_1 = 63, 100, 160, 200, 250$  mm

| Nominal size       | Process connection |    | Dimensions in mm |                |     |
|--------------------|--------------------|----|------------------|----------------|-----|
|                    | G                  | i  | SW               | d <sub>4</sub> | Ø d |
| NS<br>63, 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   |

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

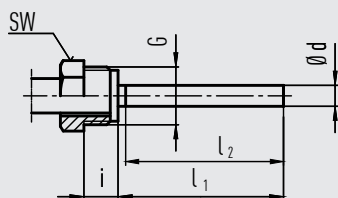


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Standard insertion length  $l_1 = 140, 200, 240, 290$  mm  
 Basis for design 4, compression fitting

| Nominal size | Dimensions in mm |     |             |                                |
|--------------|------------------|-----|-------------|--------------------------------|
|              | d <sub>1</sub>   | Ø d | a for axial | a for adjustable stem and dial |
| NS<br>63     | 14               | 8   | 15          | 25                             |
| 100, 160     | 18               | 8   | 15          | 25                             |

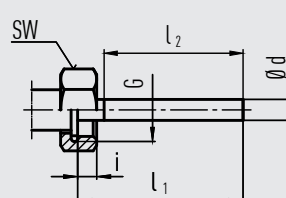
### Design 2, male nut



Standard insertion length  $l_1 = 80, 140, 180, 230$  mm  
 Non-sealing process connection, thus use with thermowell/  
 protection tube.

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

### Design 3, union nut

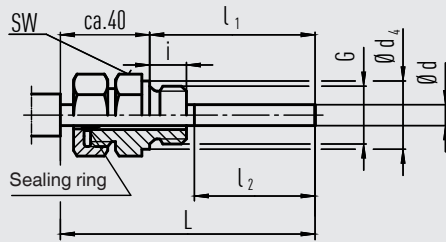


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Standard insertion length  $l_1 = 89, 126, 186, 226, 276$  mm

| Nominal size       | Process connection |      | Dimensions in mm |     |
|--------------------|--------------------|------|------------------|-----|
|                    | G                  | i    | SW               | Ø d |
| NS<br>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   |

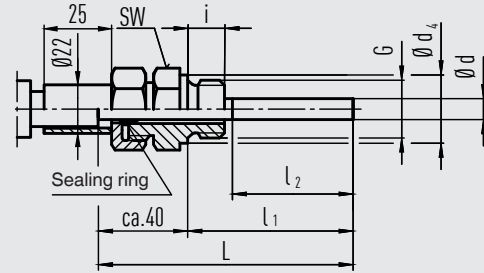
### Design 4, compression fitting (sliding on stem)



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 | $d_4$ |
| 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     |

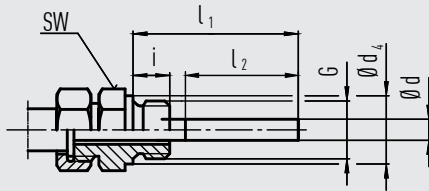
### Design 4.1, compression fitting with support tube sliding on stem



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 | $d_4$ |
| 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     |

### 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

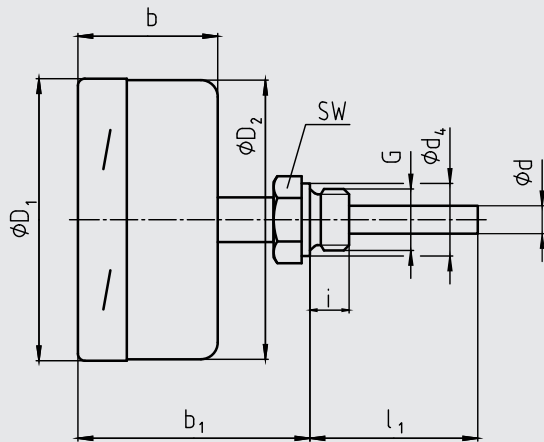
| Nominal size | Process connection |    | Dimensions in mm |    |       |
|--------------|--------------------|----|------------------|----|-------|
|              | NS                 | G  | i                | SW | $d_4$ |
| 63, 100, 160 | G ½ B              | 14 | 27               | 26 | 8     |
|              | 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     |

#### Legend:

- G Male thread
- G<sub>1</sub> Female thread
- i Thread length (incl. collar)
- a Distance to the case/articulated joint
- $\varnothing d_4$  Diameter of the sealing collar
- SW Spanner width
- $\varnothing d$  Stem diameter
- $l_1$  Insertion length
- $l_2$  Active length

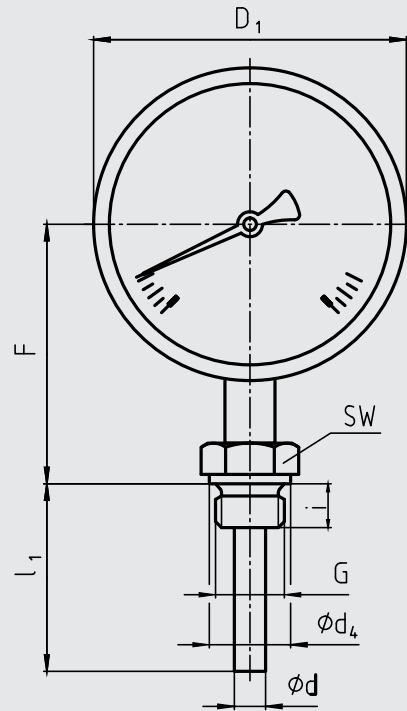
## Dimensions in mm

Back mount



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Lower mount

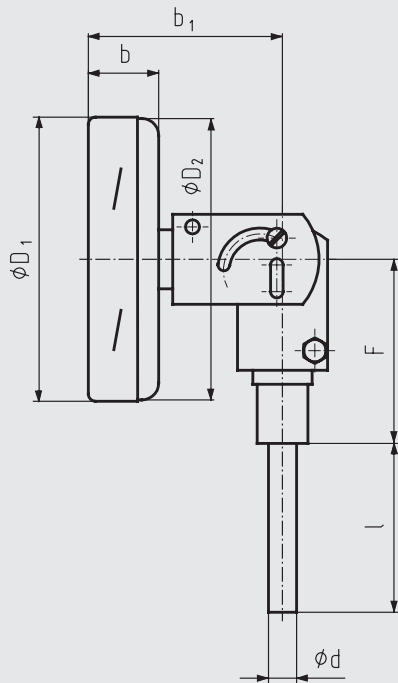


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| NS  | Dimensions in mm |                              |                 |                |                  |                  |                 |       |    | Weight in kg |             |
|-----|------------------|------------------------------|-----------------|----------------|------------------|------------------|-----------------|-------|----|--------------|-------------|
|     | b                | b <sub>1</sub> <sup>1)</sup> | d <sup>2)</sup> | d <sub>4</sub> | Ø D <sub>1</sub> | Ø D <sub>2</sub> | F <sup>1)</sup> | G     | SW | Model A55xx  | Model R55xx |
| 63  | 34               | 60                           | 8               | 26             | 64               | 62               | 58              | 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  $\geq 0 \dots 300$  °C the dimensions increase by 40 mm  
 2) Option: Stem  $\phi$  6, 10, 12 mm

## Adjustable stem and dial version



3073084.01

| NS  | Dimensions in mm |                |                 |                  |                  |    | Weight in kg |
|-----|------------------|----------------|-----------------|------------------|------------------|----|--------------|
|     | b                | b <sub>1</sub> | d <sup>1)</sup> | Ø D <sub>1</sub> | Ø D <sub>2</sub> | 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

## Ordering information

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

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