

Stainless steel spring thermometer without distributor Vertical positioning

Display range -200°C to 0 ... 800°C
Nominal size NG 63 - 250

Type: 3336, 3366, 3376, 3386, 3396



Contents

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Description

Spring thermometers are used by the industry whenever temperatures have to be exactly displayed, monitored and controlled. The measurement system (principle of expansion with inert gas) is power independent.

The large selection of connection options and dipping shank lengths enable an ideal adjustment of the spring thermometer to any location, even if it is difficult to access. Installation in an aggressive or high-pressured medium is possible by using according protective pipes. The remote sensor is suitable for measuring points where the use of a dipping shank is not possible.

Characteristics

- o high accuracy class 1 and 0.6
- o quick response time
- o display range -200 ... +800 °C
- o stainless steel design
- o large range of standard versions
- o custom designs
- o threshold contacts upon request

Application areas

- o process engineering
- o environmental engineering
- o apparatus engineering, container construction
- o food industry
- o heating, ventilation, air conditioning technology
- o chemistry, petrochemistry

Technical specifications

| Type | 3336 | 3366 | 3376 | 3386 | 3396 |
|--------------------------|--|------|------|------|------|
| Nominal size | 63 | 80 | 100 | 160 | 250 |
| Accuracy class | 1.0 acc. to DIN 16203 | | | | |
| Casing | stainless steel 1.4301 | | | | |
| Ring | stainless steel 1.4301 bayonet ring | | | | |
| Fastening | without | | | | |
| (inner) meter movement | brass | | | | |
| Temperature compensation | compensation of ambient temperature (up to 60°) inside casing | | | | |
| Viewing glass | Mineral glass 4 mm | | | | |
| Indicator | Black aluminum | | | | |
| Scale | White aluminum with black digits | | | | |
| Measurement range | see p. 3 | | | | |
| Dipping shank | Stainless steel 1.4541; 100 mm (standard) or according to specifications | | | | |
| Dipping shank diameter | 6 mm, 6.35 mm, 7 mm, 8 mm, 9 mm, 10 mm (standard) , 11 mm, 12 mm, 13 mm, 14 mm, 15 mm, 16 mm, 17 mm, 18 mm, 20 mm | | | | |
| Connection positioning | vertical | | | | |
| Connection | polished, for others see p. 5 - 10 | | | | |
| Distributor | without | | | | |
| Protection | IP 65 | | | | |

Options

| Option | Restrictions |
|--|---|
| stainless steel dipping shank 1.4401 | only for diameters 6, 8, 9, 10, 12, 13, 14, 15, 16, 18 mm |
| as above, with PTFE-coating (max. 250°C) | sensor maximum 1000 mm |

| Type | 3336 | 3366 | 3376 | 3386 | 3396 |
|---|------|------|------|------|------|
| Nominal value | 63 | 80 | 100 | 160 | 250 |
| Accuracy class 0.6 | – | – | √ | √ | √ |
| Silicon filling | √ | √ | √ | √ | √ |
| Stainless steel casing + ring 1.4401 | √ | – | √ | √ | – |
| Special scale | √ | √ | √ | √ | √ |
| Double scale °C/°F | √ | √ | √ | √ | √ |
| Customer logo | √ | √ | √ | √ | √ |
| Plexiglass viewing glass | √ | √ | √ | √ | √ |
| Safety glass viewing glass | √ | √ | √ | √ | √ |
| Drag indicator | √ | √ | √ | √ | √ |
| Micro-adjustable indicator | | | | | |
| Indicator oilproof IP 67 + separate key | √ | √ | √ | √ | √ |
| Stainless steel meter movement 1.4301 | √ | √ | √ | √ | √ |
| Threshold contact | – | – | √ | √ | – |
| Calibration certificate | √ | √ | √ | √ | √ |

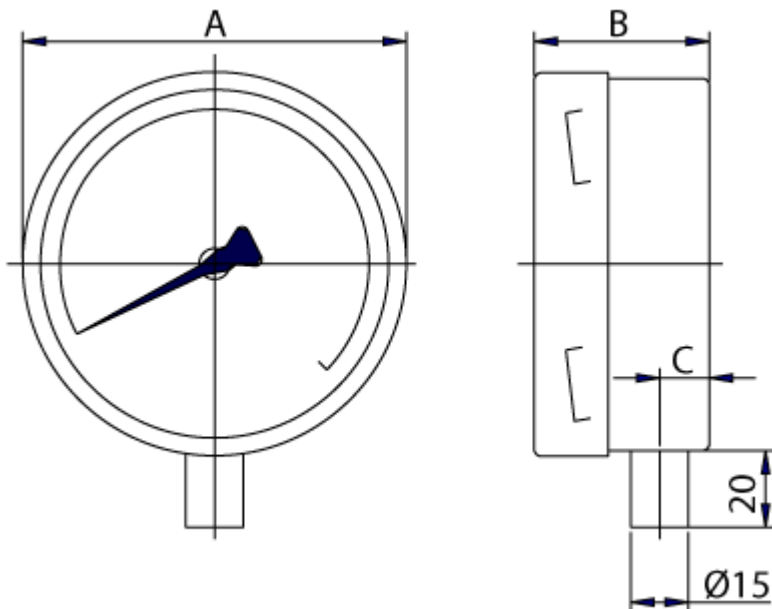
√ = option available
– = option not available

Display range

| Display range in °C | Measurement range in °C | Error limit \pm °C for class 1 standard | Error limit \pm °C for class 0.6 option | Display range in °C | Measurement range in °C |
|---------------------|-------------------------|---|---|---------------------|-------------------------|
| -200... +50 | -170...+20 | 5 | 2.5 | 2 | 1.5 |
| -120... +40 | -100...+20 | 2 | 1.6 | 1 | 0.96 |
| -110... +50 | -90...+30 | 5 | 1.6 | 1 | 0.96 |
| -100...+100 | -80...+80 | 5 | 2 | 1 | 1.2 |
| -100... +50 | -80...+30 | 5 | 1.5 | 1 | 0.9 |
| -80... +40 | -60...+20 | 2 | 1.2 | 1 | 0.72 |
| -60... +40 | -50...+30 | 2 | 1 | 0.5 | 0.6 |
| -60... +60 | -40...+40 | 2 | 1 | 1 | 0.75 |
| -50... +50 | -40...+40 | 2 | 1.2 | 0.5 | 0.6 |
| -50...+100 | -30...+80 | 5 | 1.5 | 1 | 0.9 |
| -40... +20 | -30...+100 | 1 | 0.6 | 0.5 | 0.36 |
| -40... +40 standard | -30...+30 | 1 | 0.8 | 0.5 | 0.48 |
| -40... +60 | -30...+50 | 2 | 1 | 0.5 | 0.6 |
| -40... +80 | -20...+60 | 2 | 1.2 | 1 | 0.72 |
| -40...+110 | -20...+90 | 5 | 1.5 | 1 | 0.9 |
| -40...+120 | -20...+100 | 2 | 1.6 | 0.5 | 0.96 |
| -40...+160 | -20...+140 | 5 | 2 | 1 | 1.2 |
| -30... +30 standard | -20...+20 | 1 | 0.6 | 0.5 | 0.36 |
| -30... +50 | -20...+40 | 1 | 0.8 | 0.5 | 0.48 |
| -30... +70 | -20...+60 | 2 | 1 | 0.5 | 0.6 |
| -30...+170 | -10...+150 | 5 | 2 | 1 | 1.2 |
| -20... +40 | -10...+30 | 1 | 0.6 | 0.5 | 0.36 |
| -20... +60 | -10...+50 | 1 | 0.8 | 0.5 | 0.48 |
| -20... +80 | -10...+70 | 2 | 1 | 0.5 | 0.6 |
| -20...+100 | 0...+80 | 2 | 1.2 | 1 | 0.72 |
| -20...+120 | 0...+100 | 2 | 1.4 | 1 | 0.84 |
| -20...+180 | 0...+160 | 5 | 2 | 1 | 1.2 |
| -15... +45 | -5...+35 | 1 | 0.6 | 0.5 | 0.36 |
| -10... +50 | 0...+40 | 1 | 0.6 | 0.5 | 0.36 |
| -10...+110 | 0...+100 | 2 | 1.2 | 1 | 0.72 |
| -10...+150 | +10...+130 | 5 | 1.6 | 1 | 0.96 |
| 0... +60 standard | +10...+50 | 1 | 0.6 | 0.5 | 0.36 |
| 0... +80 | +10...+70 | 1 | 0.8 | 0.5 | 0.48 |
| 0...+100 standard | +10...+90 | 2 | 1 | 0.5 | 0.6 |
| 0...+120 standard | +20...+100 | 2 | 1.2 | 1 | 0.72 |
| 0...+160 standard | +20...+140 | 5 | 1.6 | 1 | 0.96 |
| 0...+200 | +20...+180 | 5 | 2 | 1 | 1.2 |
| 0...+250 | +30...+220 | 5 | 2.5 | 2 | 1.5 |
| 0...+300 | +30...+270 | 5 | 3 | 2 | 1.8 |
| 0...+400 | +50...+350 | 10 | 4 | 2 | 2.4 |
| 0...+500 | +50...+450 | 10 | 5 | 5 | 3 |
| 0...+600 | +100...+500 | 10 | 6 | 5 | 3.6 |
| 0...+700 | +100...+600 | 10 | 7 | 5 | 4.2 |
| 0...+800 | +100...+700 | 10 | 8 | 5 | 4.8 |

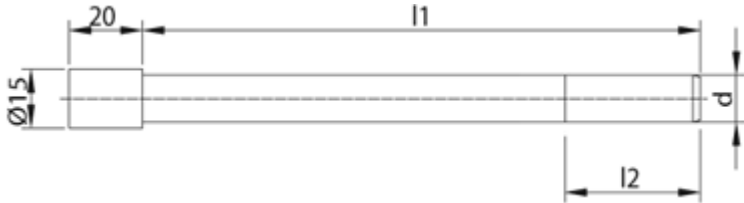
special measurement ranges are available upon request. °C/°F see options

Dimensions

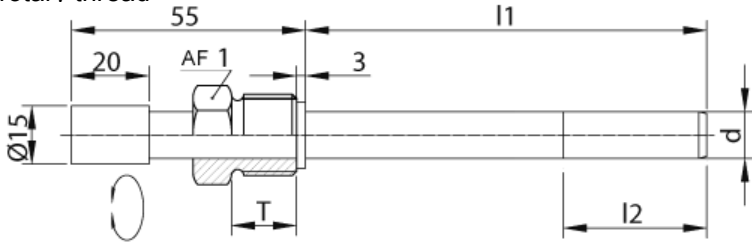
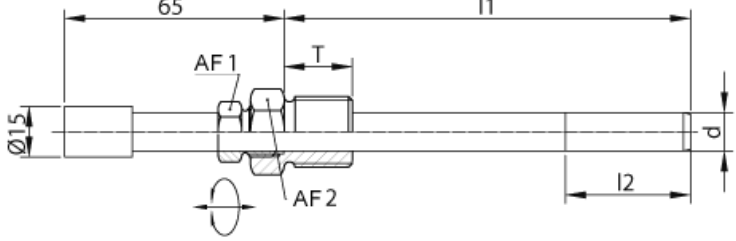


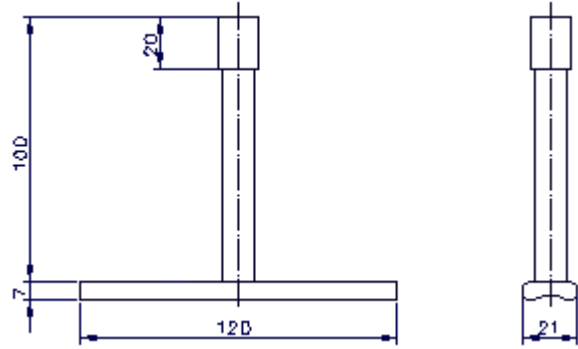
| | Casing diameter mm | | | | |
|---|--------------------|----|-----|-----|-----|
| | 63 | 80 | 100 | 160 | 250 |
| A | 65 | 83 | 101 | 161 | 252 |
| B | 38 | 37 | 45 | 45 | 55 |
| C | 13 | 13 | 13 | 13 | 13 |

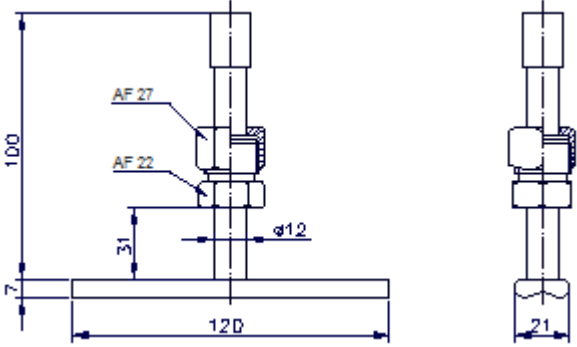
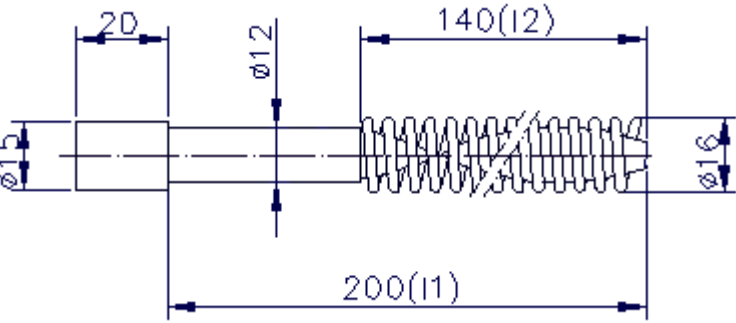
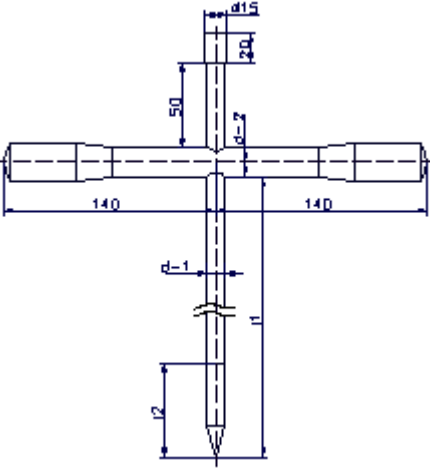
Connections

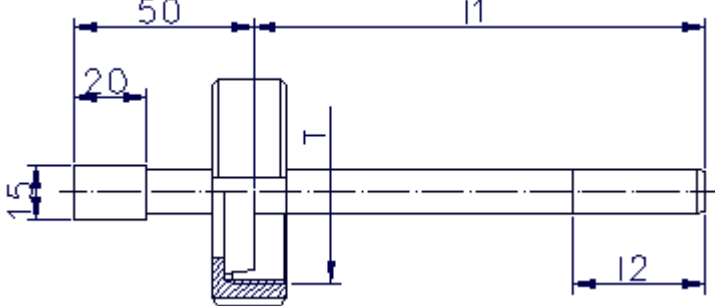
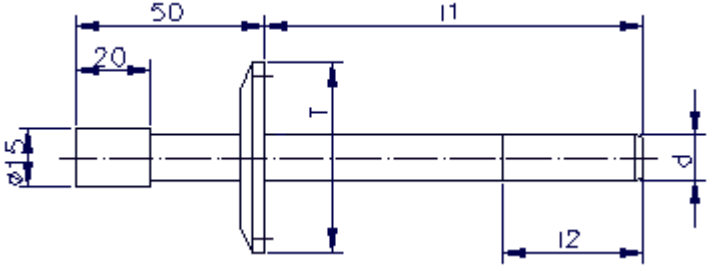
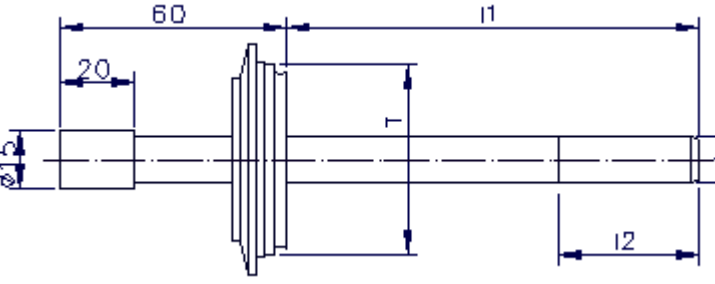
| Connection | Diameter mm |
|--|---|
| polished | 6, 6,35, 7, 8, 9, 10 (standard) , 11, 12, 12,5, 13, 14, 15, 16, 17, 18, 20 |
|  | |

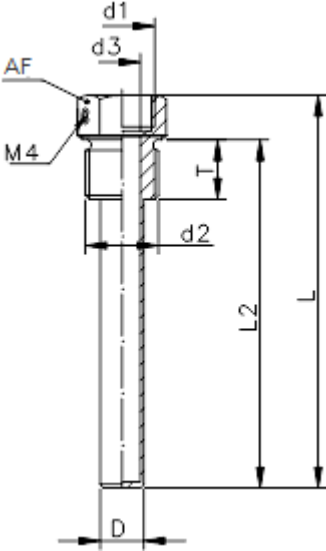
| Connection | connection size | Max. sensorØ | AF-1 | T |
|--------------|-----------------|--------------|------|----|
| coupling nut | G 1/4 | 8 mm | 22 | 7 |
| | G 3/8 | 11 mm | 27 | 9 |
| | G 1/2 | 15 mm | 27 | 9 |
| | G 3/4 | 20 mm | 32 | 9 |
| | G 1 | 20 mm | 41 | 13 |
| | M 18 x 1.5 | 12 mm | 27 | 8 |
| | M 20 x 1.5 | 14 mm | 27 | 9 |
| M 24 x 1.5 | 18 mm | 32 | 9 | |
| fixed thread | G 1/4 | 8 mm | 17 | 12 |
| | G 3/8 | 11 mm | 22 | 12 |
| | G 1/2 | 15 mm | 22 | 14 |
| | G 3/4 | 20 mm | 30 | 16 |
| | G 1 | 20 mm | 36 | 18 |
| | G 1/4 NPT | 8 mm | 17 | 14 |
| | G 3/8 NPT | 15 mm | 22 | 20 |
| | G 1/2 NPT | 20 mm | 30 | 20 |
| | G 3/4 NPT | 20 mm | 36 | 25 |
| | M 18 x 1.,5 | 12 mm | 22 | 12 |
| | M 20 x 1.5 | 14 mm | 22 | 14 |
| | M 24 x 1.5 | 18 mm | 27 | 14 |

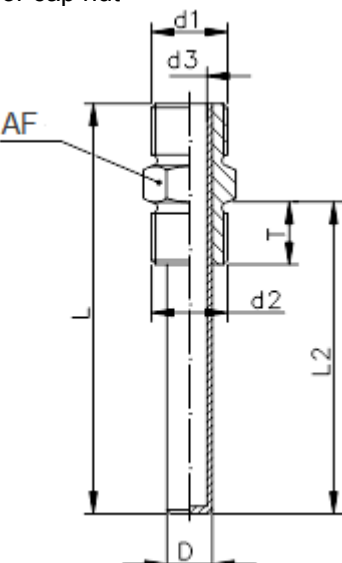
| Connection | connection size | Max. sensorØ | AF-1 | AF-2 | T |
|---|-----------------|--------------|------|------|----|
| rotary thread  | G 1/4 | 8 | 17 | - | 12 |
| | G 3/8 | 11 mm | 22 | - | 12 |
| | G 1/2 | 15 mm | 22 | - | 14 |
| | G 3/4 | 20 mm | 30 | - | 16 |
| | G 1 | 20 mm | 36 | - | 18 |
| | M 18 x 1.5 | 12 mm | 22 | - | 12 |
| | M 20 x 1.5 | 14 mm | 22 | - | 14 |
| | M 24 x 1.5 | 18 mm | 27 | - | 14 |
| compression fitting, sliding on sensor  | G 1/4 | 8 mm | 22 | 27 | 12 |
| | G 3/8 | 11 mm | 22 | 27 | 12 |
| | G 1/2 | 15 mm | 22 | 27 | 14 |
| | G 3/4 | 20 mm | 22 | 32 | 16 |
| | G 1 | 20 mm | 22 | 36 | 18 |
| | 1/4 NPT | 8 mm | 22 | 27 | 14 |
| | 1/2 NPT | 15 mm | 22 | 27 | 20 |
| | 3/4 NPT | 20 mm | 22 | 27 | 20 |
| | 1 NPT | 20 mm | 22 | 36 | 25 |
| | M 18 x 1.5 | 12 mm | 22 | 27 | 12 |
| | M 20 x 1.5 | 14 mm | 22 | 27 | 14 |
| | M 24 x 1.5 | 18 mm | 22 | 27 | 14 |

| Connection | L | D-1 | D-2 |
|---|---|-----|-----|
| Remote sensor fixed  | - | - | - |

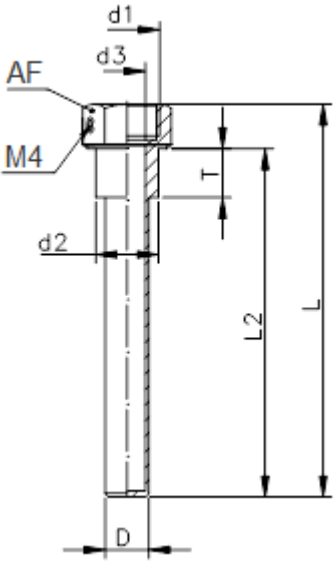
| Connection | L | D-1 | D-2 |
|---|------|----------|-----|
| <p>Remote sensor, adjustable type</p>  | - | - | - |
| <p>Air sensor, length 200 mm</p>  | - | - | - |
| <p>with handle and point</p>  | 1000 | 10 12 | 22 |
| | 1000 | 14 16 | 22 |
| | 1000 | 18 | 22 |

| Connection | Connection size | T | | | | | | |
|---|---|-----------------------|------------|---------------------------|------------|-----------------------|------------|--|
| <p>Groove nut acc. to DIN 11851</p>  | <table border="1"> <tr> <td>nominal width 25 – 1"</td> <td>Ø 52 x 1/6</td> </tr> <tr> <td>nominal width 40 – 1 1/2"</td> <td>Ø 65 x 1/6</td> </tr> <tr> <td>nominal width 50 – 2"</td> <td>Ø 78 x 1/6</td> </tr> </table> | nominal width 25 – 1" | Ø 52 x 1/6 | nominal width 40 – 1 1/2" | Ø 65 x 1/6 | nominal width 50 – 2" | Ø 78 x 1/6 | |
| nominal width 25 – 1" | Ø 52 x 1/6 | | | | | | | |
| nominal width 40 – 1 1/2" | Ø 65 x 1/6 | | | | | | | |
| nominal width 50 – 2" | Ø 78 x 1/6 | | | | | | | |
| <p>Tri Clamp acc. to ISO 2852</p>  | <table border="1"> <tr> <td>nominal width 25 – 1"</td> <td>Ø 50.5</td> </tr> <tr> <td>nominal width 40 – 1 1/2"</td> <td>Ø 50.5</td> </tr> <tr> <td>nominal width 50 – 2"</td> <td>Ø 64</td> </tr> </table> | nominal width 25 – 1" | Ø 50.5 | nominal width 40 – 1 1/2" | Ø 50.5 | nominal width 50 – 2" | Ø 64 | |
| nominal width 25 – 1" | Ø 50.5 | | | | | | | |
| nominal width 40 – 1 1/2" | Ø 50.5 | | | | | | | |
| nominal width 50 – 2" | Ø 64 | | | | | | | |
| <p>Varivent®</p>  | <table border="1"> <tr> <td>nominal width 10-15</td> <td>Ø 31</td> </tr> <tr> <td>nominal width 25-32</td> <td>Ø 50</td> </tr> <tr> <td>nominal width 40-50</td> <td>Ø 68</td> </tr> </table> | nominal width 10-15 | Ø 31 | nominal width 25-32 | Ø 50 | nominal width 40-50 | Ø 68 | |
| nominal width 10-15 | Ø 31 | | | | | | | |
| nominal width 25-32 | Ø 50 | | | | | | | |
| nominal width 40-50 | Ø 68 | | | | | | | |

| Connection | Ø | EL | d1Ø | d2 | d3 | T | D | AF |
|---|----------------|-----|-----|---------|------|----|------|----|
| separate screwable protective cover for dipping shank, polished  | 10 | 100 | 15 | G ½ | 10.5 | 14 | 12.5 | 27 |
| | 10 | 100 | 15 | G ¾ | 10.5 | 16 | 12.5 | 32 |
| | 10 | 100 | 15 | G 1 | 10.5 | 18 | 12.5 | 36 |
| | 10 | 100 | 15 | ½ NPT | 10.5 | 20 | 12.5 | 27 |
| | 10 | 100 | 15 | ¾ NPT | 10.5 | 20 | 12.5 | 27 |
| | 10 | 100 | 15 | 1 NPT | 10.5 | 25 | 12.5 | 36 |
| | 10 | 100 | 15 | M20x1.5 | 10.5 | 14 | 12.5 | 27 |
| | 10 | 100 | 15 | M24x1.5 | 10.5 | 14 | 12.5 | 27 |
| | 12.5 | 63 | 15 | G ½ | 13 | 14 | 15 | 27 |
| | 12.5 | 63 | 15 | G ¾ | 13 | 16 | 15 | 32 |
| | 12.5 | 63 | 15 | G 1 | 13 | 18 | 15 | 36 |
| | 12.5 | 63 | 15 | ½ NPT | 13 | 20 | 15 | 27 |
| | 12.5 | 63 | 15 | ¾ NPT | 13 | 20 | 15 | 27 |
| | 12.5 | 63 | 15 | 1 NPT | 13 | 25 | 15 | 36 |
| | 12.5 | 63 | 15 | M24x1.5 | 13 | 14 | 15 | 27 |
| | L = L2 + 10 mm | | | | | | | |

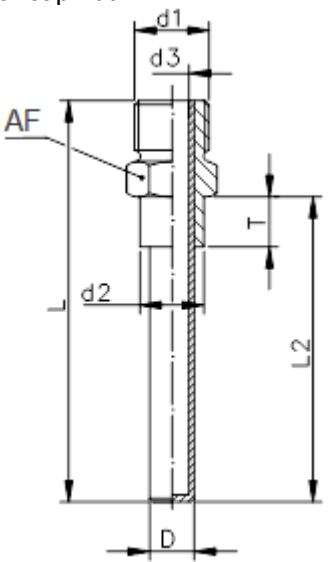
| Connection | Ø | L2 | d1 | d2 | d3 | T | D | AF |
|--|----------------|-----|----|---------|------|----|------|----|
| separate screwable protective cover for cap nut  | 10 | 100 | ½ | G ½ | 10.5 | 14 | 12.5 | 22 |
| | 10 | 100 | ½" | G ¾ | 10.5 | 16 | 12.5 | 27 |
| | 10 | 100 | ½" | G 1 | 10.5 | 18 | 12.5 | 36 |
| | 10 | 100 | ½" | ½ NPT | 10.5 | 20 | 12.5 | 22 |
| | 10 | 100 | ½" | ¾ NPT | 10.5 | 20 | 12.5 | 27 |
| | 10 | 100 | ½" | 1 NPT | 10.5 | 25 | 12.5 | 36 |
| | 10 | 100 | ½" | M20x1.5 | 10.5 | 14 | 12.5 | 22 |
| | 10 | 100 | ½" | M24x1.5 | 10.5 | 14 | 12.5 | 27 |
| | 12.5 | 63 | ½" | G ½ | 13 | 14 | 15 | 22 |
| | 12.5 | 63 | ½" | G ¾ | 13 | 16 | 15 | 27 |
| | 12.5 | 63 | ½" | G 1 | 13 | 18 | 15 | 36 |
| | 12.5 | 63 | ½" | ½ NPT | 13 | 20 | 15 | 22 |
| | 12.5 | 63 | ½" | ¾ NPT | 13 | 20 | 15 | 27 |
| | 12.5 | 63 | ½" | 1 NPT | 13 | 25 | 15 | 36 |
| | 12.5 | 63 | ½" | M24x1.5 | 13 | 14 | 15 | 27 |
| | L = L2 + 20 mm | | | | | | | |

| Connection | ∅ | L2 | d1∅ | d2 | d3 | T | D | AF |
|--|------|-----|-----|----|------|----|------|----|
| weldable separate protective cover for dipping shank, polished | 10 | 100 | 15 | 18 | 10.5 | 14 | 12.5 | 27 |
| | 10 | 100 | 15 | 23 | 10.5 | 16 | 12.5 | 32 |
| | 10 | 100 | 15 | 28 | 10.5 | 18 | 12.5 | 36 |
| | 12.5 | 63 | 15 | 18 | 13 | 14 | 15 | 27 |
| | 12.5 | 63 | 15 | 23 | 13 | 16 | 15 | 27 |
| | 12.5 | 63 | 15 | 28 | 13 | 18 | 15 | 36 |



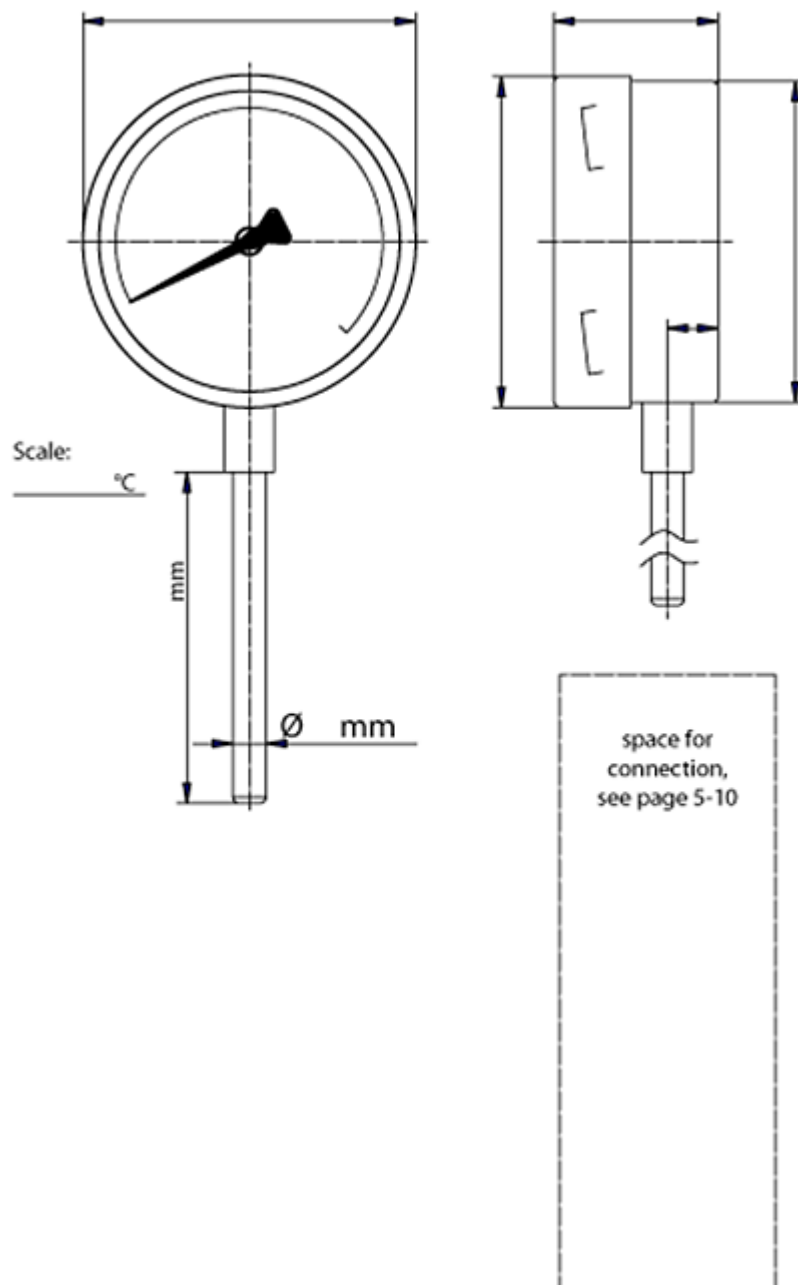
$L = L2 + 10 \text{ mm}$

| Connection | ∅ | L2 | d1 | d2 | d3 | T | D | AF |
|--|------|-----|----|----|------|----|------|----|
| weldable separate protective cover for cap nut | 10 | 100 | G½ | 18 | 10.5 | 14 | 12.5 | 22 |
| | 10 | 100 | G¾ | 23 | 10.5 | 16 | 12.5 | 27 |
| | 10 | 100 | G1 | 28 | 10.5 | 18 | 12.5 | 36 |
| | 12.5 | 63 | G½ | 18 | 13 | 14 | 15 | 22 |
| | 12.5 | 63 | G¾ | 23 | 13 | 16 | 15 | 27 |
| | 12.5 | 63 | G1 | 28 | 13 | 18 | 15 | 36 |



$L = L2 + 20 \text{ mm}$

Entire unit



Ordering designations:

type / casing ∅ / display range / connection and length / possible options