Gas-actuated thermometer
Highly vibration resistant
Model 75, stainless steel version

Applications
- For the local measurement of exhaust gas temperatures or oil temperatures in diesel engines, turbines, compressors and strongly vibrating machinery

Special features
- Instruments meet the highest mechanical and measurement-technology standards
- Very high vibration resistance
- Especially robust design with cushioning fluid for a long service life
- All stainless steel design

Description
This series of thermometers has been designed for applications where strong shocks and vibrations occur. These thermometers measure accurately and reliably, even when exposed to extremely high mechanical loads. They are also resistant to high ambient temperatures and humidity.

The thermometers are completely made of stainless steel. Various insertion lengths and process connections are available to optimally match the requirements of each process.
Standard version

Temperature element
Inert gas expansion system (non-toxic)

Nominal size in mm
100

Design of connection
2 Male nut
3 Union nut
4 Compression fitting (sliding on stem)

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>NS</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>A75.100</td>
<td>100</td>
<td>Back mount (axial)</td>
</tr>
<tr>
<td>R75.100</td>
<td>100</td>
<td>Lower mount (radial)</td>
</tr>
</tbody>
</table>

Accuracy class
Class 1 per EN 13190
at 23 °C ±20 °C ambient temperature

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

Nominal use
EN 13190

Case, bezel ring
Stainless steel 1.4301 (304)

Stem, process connection
Stainless steel 1.4571 (316Ti)

Stem diameter
13 mm

Dial
Aluminium, white, black lettering

Window
Laminated safety glass

Options
- Scale range °F, °C/°F (dual scale)
- With fabricated or solid machined thermowell
- Various extension neck an insertion length available
- Various process connections available
- Thermometers with electrical output signal (data sheet TV 17.02)

Accuracy class
Class 1 per EN 13190
at 23 °C ±20 °C ambient temperature

Scale, measuring ranges °C, limits of error (EN 13190)
Scale graduation per WIKA standard

<table>
<thead>
<tr>
<th>Scale range in °C</th>
<th>Measuring range in °C</th>
<th>Scale spacing in °C</th>
<th>Error limit ± °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ... 600</td>
<td>150 ... 500</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>50 ... 650</td>
<td>150 ... 550</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>50 ... 700</td>
<td>150 ... 600</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

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 EN 13190.
Design of connection

Design 2, male nut
Standard insertion length \( l_1 = 120, 140, 180, 230 \) mm

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>Process connection</th>
<th>Dimensions in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS 100</td>
<td>G ¾ B</td>
<td>SW Ø d</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>32</td>
</tr>
</tbody>
</table>

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

Design 3, union nut
Standard insertion length \( l_1 = 89, 126, 186, 226, 276 \) mm

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>Process connection</th>
<th>Dimensions in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS 100</td>
<td>G ¾ B</td>
<td>SW Ø d</td>
</tr>
<tr>
<td></td>
<td>10,5</td>
<td>32</td>
</tr>
</tbody>
</table>

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)
Insertion length \( l_1 \) = variable
Length \( L = l_1 + 40 \) mm

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>Process connection</th>
<th>Dimensions in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS 100</td>
<td>G ¾ B</td>
<td>SW Ø d Ø d4</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>32</td>
</tr>
</tbody>
</table>

Legend:
- \( G \) Male thread
- \( i \) Thread length
- \( SW \) Flats
- \( Ø d \) Stem diameter
- \( Ø d4 \) Diameter of the sealing collar
- \( l_2 \) Active length

- \( \text{ca.40} \) Diameter of the seal

- \( L \) Length

- \( \text{Dichtring} \) Sealing collar
## Dimensions in mm

### Model A75.100, back mount (BM)

![Diagram of Model A75.100]

### Model R75.100, lower mount (LM)

![Diagram of Model R75.100]

### Table: Nominal Size, Dimensions, and Weight

<table>
<thead>
<tr>
<th>Nominal Size (NS)</th>
<th>Dimensions in mm</th>
<th>Weight in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>b = 50</td>
<td>b₁ = 110</td>
</tr>
</tbody>
</table>

1) Others on request
**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 (options)**

- 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 / Design of connection / Process connection / Length l₁ / Options

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