

Gas-actuated thermometer with electrical output signal Model 75, stainless steel version highly vibration resistant with thermocouple type K

WIKA data sheet TV 17.02

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
- Extremely robust design with cushioning fluid for a long service life
- All stainless steel design
- Two independent measuring systems in one instrument (gas-actuated thermometer model 75 and thermocouple type K)
- Only one process relief necessary

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.

The combined gas-actuated thermometer offers two measuring systems in one instrument. The gas-actuated thermometer displays the measured values on site, while the integrated thermocouple provides an electrical output signal for further processing.



Gas-actuated thermometer model 75 with thermocouple type K

Standard version**Temperature element**

Inert gas expansion system, non-toxic and thermocouple type K

Thermocouple

Type K (NiCr-Ni) / 0 ... 600 °C
Sheath material Inconel 600 (2.4816)
Cable length 3 m

Nominal size in mm

100

Design of connection

- 3 Union nut
- 4 Compression fitting (sliding on stem)

Instrument version

- back mount (axial)
- lower mount (radial)

Accuracy class

Mechanical: Class 1 per EN 13190
(0 ... 40 °C ambient temperature)
Electrical: Class 2 per DIN EN 60584
(see data sheet TE 60.40)

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 1.4571

Stem diameter

13 mm

Dial

Aluminium, white, black lettering

Window

Laminated safety glass

Pointer

Aluminium, black, adjustable pointer

Liquid damping

Silicon oil, M10.000

Temperature limits for storage and transport

-50 ... +70 °C

Ambient temperature limit at the case

0 ... 70 °C max.

Pressure rating of stem

max. 25 bar, static with design 4
max. 40 bar, static with design 3

Ingress protection

IP 66 per DIN EN 60529/IEC 529

Options

- Scale range °F, °C/°F (dual scale)
- With fabricated or solid machined thermowell
- Other neck tube and insertion lengths
- Other process connections
- Other cable lengths
- Polycarbonate window

Scale, measuring ranges¹⁾, limits of error (EN 13190)**Scale graduation per WIKA standard**

Scale range in °C	Measuring range in °C	Scale spacing in °C	Limit of error ±°C
50 ... 600	150 ... 500	10	10
50 ... 650	150 ... 550	10	10
50 ... 700	150 ... 600	10	10

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.

Thermocouple type K

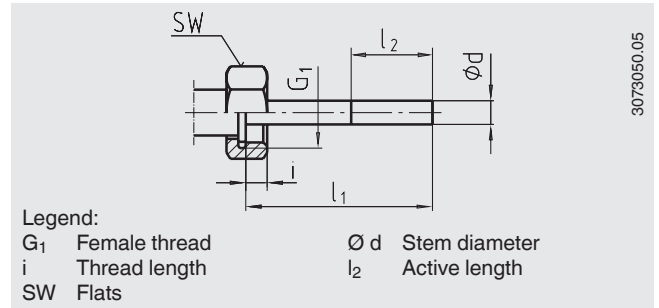
Class	Temperature range	Limited error
DIN EN 60584 part 2		
2	-40 ... +333 °C	±2.5 °C
2	333 ... 1,200 °C	±0.0075 · t ¹⁾

Connection designs

Design 3, union nut

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

Nominal size NS	Process connection		Dimensions in mm		
	G_1	i	SW	$\varnothing d$	
100	$G \frac{1}{2}$	8.5	27	13	
	$G \frac{3}{4}$	10.5	32	13	

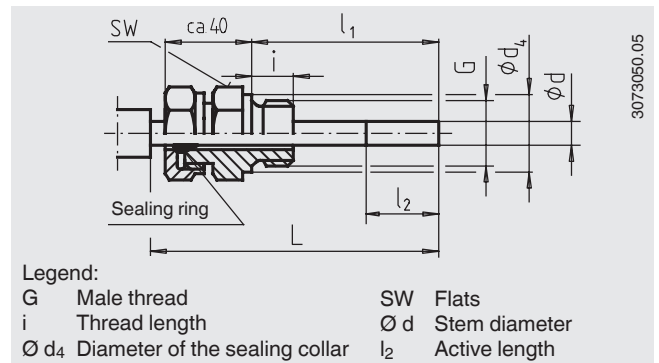


Design 4, compression fitting (sliding on stem)

Insertion length $l_1 =$ variable

Length $L = l_1 + 40$ mm

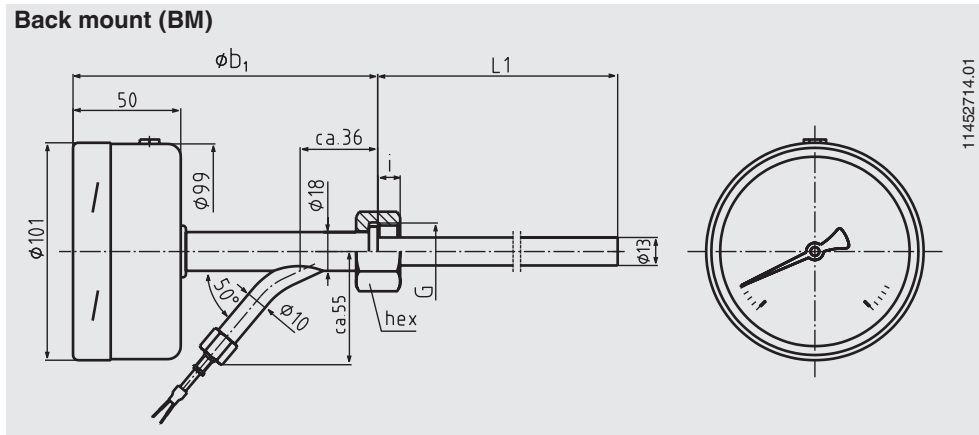
Nominal size NS	Process connection		Dimensions in mm			
	G	i	SW	d_4	$\varnothing d$	
100	$G \frac{1}{2} B$	14	27	26	13	
	$G \frac{3}{4} B$	16	32	32	13	
	$\frac{1}{2}$ NPT	19	22	-	13	
	$\frac{3}{4}$ NPT	20	30	-	13	



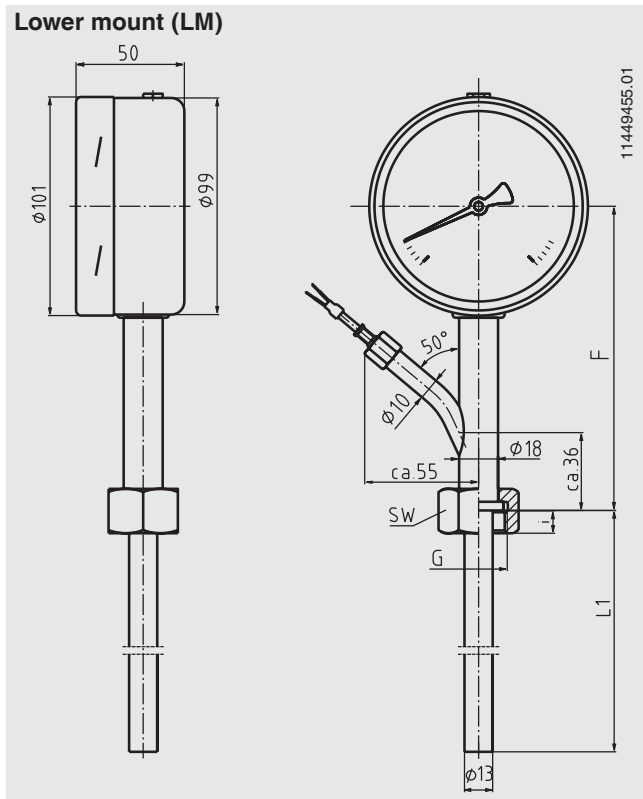
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Dimensions in mm

Back mount (BM)



Lower mount (LM)



Nominal size	Dimensions in mm					Weight in kg
NS	b	b ₁ 1)	F 1)	D ₁	D ₂	
100	50	140	140	101	99	0.75

1) Other standard lengths are 175 and 210 mm

Ordering information

Model / Nominal size / Scale range / Design of connection / Process connection / Length L_1 / Options

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