

Bourdon tube pressure gauge, copper alloy

For tyre pressure measuring instruments per EN 12645

Model 111.14

WIKA data sheet PM 01.21



For further approvals,
see page 4

Applications

- For use in tyre inflation systems for monitoring the tyre pressure during inflating
- Filling stations, garages, service stations

Special features

- Design per EN 12645
- Scale ranges: 0 ... 4 bar, 0 ... 10 bar and 0 ... 12 bar
- Nominal sizes NS 63 [2 ½"] and NS 80 [3"] available



Model 111.14, for tyre pressure measuring instruments

Description

The model 111.14 has been developed specifically to monitor the tyre pressure of vehicles.

This pressure gauge is particularly suited to be integrated in tyre pressure measuring instruments specified in EN 12645. The advantage of this mechanical Bourdon tube pressure gauge is its reliability and long-term stability without the need for auxiliary power.

Individual customer versions

Based on many years of experience in manufacturing and development, WIKA is happy to offer support in the construction and production of customer-specific solutions. WIKA's specialists are able to provide best practices for developing customised tyre measuring instruments for local markets.

Specifications

Basic information	
Standard	EN 12645
Nominal size (NS)	<ul style="list-style-type: none"> ■ Ø 63 mm [2 ½"] ■ Ø 80 mm [3"]
Connection location	<ul style="list-style-type: none"> ■ Lower mount (radial) ¹⁾ ■ Centre back mount
Window	Plastic, crystal-clear, welded to the case
Case	<ul style="list-style-type: none"> ■ Plastic, black ■ Steel, black painted
Movement	Copper alloy

1) Only available for NS 63 [2 ½"]

Measuring element	
Type of measuring element	Bourdon tube, C-type
Material	Copper alloy

Accuracy specifications ¹⁾		
Reference conditions		
Ambient temperature t_{amb}	15 ... 25 °C [59 ... 77 °F]	
Maximum permissible error		
Error limits when complying with the reference conditions an the measuring system.		
0 ... 4 bar	±0.08 bar	
> 4 ... ≤ 10 bar	±0.16 bar	
> 10 bar	±0.25 bar	
Temperature error		
Error limits on deviation from the reference conditions at the measuring system. Formulas below only apply to entries in °C for t_{amb} . → For permissible ambient temperatures t_{amb} see "Operating conditions".		
0 ... 4 bar	$t_{amb} < 15\text{ °C}$	$\pm 0.005 * (15 - t_{amb}) + 0.08 \text{ bar}$
	$t_{amb} > 25\text{ °C}$	$\pm 0.005 * (t_{amb} - 25) + 0.08 \text{ bar}$
> 4 ... ≤ 10 bar	$t_{amb} < 15\text{ °C}$	$\pm 0.005 * (15 - t_{amb}) + 0.16 \text{ bar}$
	$t_{amb} > 25\text{ °C}$	$\pm 0.005 * (t_{amb} - 25) + 0.16 \text{ bar}$
> 10 bar	$t_{amb} < 15\text{ °C}$	$\pm 0.005 * (15 - t_{amb}) + 0.25 \text{ bar}$
	$t_{amb} > 25\text{ °C}$	$\pm 0.005 * (t_{amb} - 25) + 0.25 \text{ bar}$

1) Accuracy specifications per EN 12645

Examples for maximum permissible error calculation

Example 1

Scale range: 0 ... 4 bar

Ambient temperature t_{amb} : -10 °C

Maximum permissible error: $\pm |0.005 * (15 - (-10)) + 0.08| \text{ bar} = \pm 0.205 \text{ bar}$

Example 2

Scale range: 0 ... 4 bar

Ambient temperature t_{amb} : 40 °C

Maximum permissible error: $\pm |0.005 * (40 - 25) + 0.08| \text{ bar} = \pm 0.155 \text{ bar}$

Scale ranges

bar			kPa		
0 ... 4	0 ... 10	0 ... 12 ¹⁾	0 ... 400	0 ... 1.000	0 ... 1.200 ¹⁾

1) Only available for NS 80 [3"]

Further details on: scale ranges	
Special scale ranges	Other scale ranges on request
Unit	<input type="checkbox"/> bar <input type="checkbox"/> kPa
Dial	
Scale colour	Black
Scale graduation	0.1 bar
Material	Ø 63 mm [2 ½"] Plastic, white
	Ø 80 mm [3"] Aluminium, white
Special scale	Customer-specific dials on request
Pointer	Knife edge pointer, aluminium, black

Process connection	
Standard	EN 837-1
Size	
EN 837-1	G ¼ B, male thread
Material (wetted)	
Process connection	Copper alloy
Bourdon tube	Copper alloy



Other process connections on request

Operating conditions	
Medium temperature	≤ 40 °C [104 °F]
Ambient temperature range t_{amb}	-20 ... +55 °C [-4 ... 131 °F]
Storage temperature range	-40 ... +70 °C [-40 ... 158 °F]
Pressure limitation	
Steady	3/4 x full scale value
Fluctuating	2/3 x full scale value
Short time	1.25 x full scale value
Ingress protection per IEC/EN 60529	IP44

Approvals

Logo	Description	Region
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

Optional approvals

Logo	Description	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	MChS Permission for commissioning	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	PAC China Metrology, measurement technology	China

Manufacturer's declaration

Logo	Description
-	Pressure Equipment Directive (PED) for maximum allowable pressure $PS \leq 200$ bar

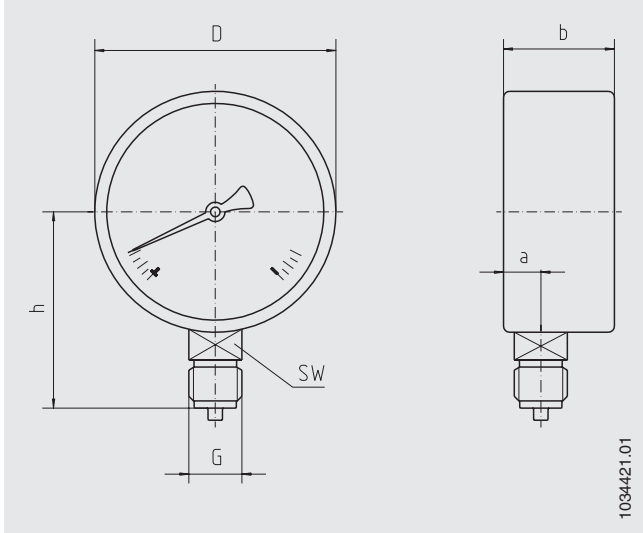
Certificates

Certificates	
Certificates	<ul style="list-style-type: none"> ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

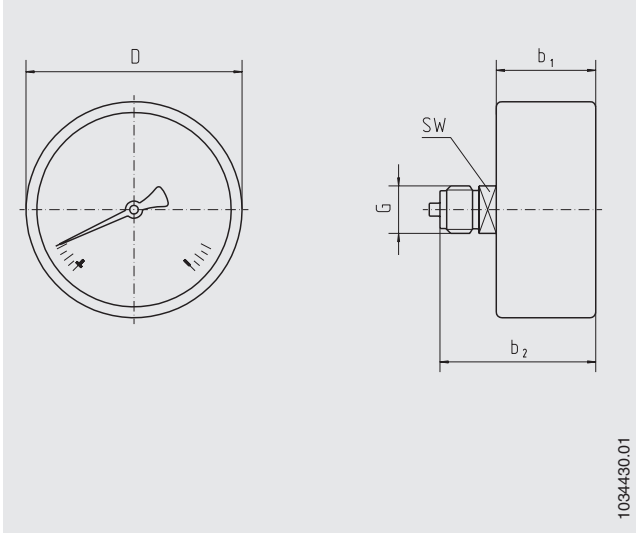
→ For approvals and certificates, see website

Dimensions in mm [in]

Lower mount (radial)




Centre back mount



NS	G	Dimensions in mm [in]							Weight in g [oz]
		a	b	b ₁ ±0.5 [0.02]	b ₂ ±1 [0.04]	D	h ±1 [0.04]	SW	
63 [2 ½"]	G ¼ B	10 [0.39]	27.5 [1.08]	27.5 [1.08]	48 [1.89]	62 [2.44]	53.5 [2.11]	14 [0.55]	Approx. 80 [2.82]
80 [3"]	G ¼ B	-	-	32 [1.26]	49 [1.93]	79 [3.11]	-	14 [0.55]	Approx. 110 [3.88]

Accessories and spare parts

Model	Description	Order number
	910.17 Seals → See data sheet AC 09.08	-

Ordering information

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

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