

# Bourdon tube pressure gauge

## Mining version

### Model 213.41, NS 50 [2"]

WIKA data sheet PM 01.12

#### Applications

- For hydraulic equipment in the mining industry
- For measuring locations with high dynamic pressure loads, pressure spikes and vibrations

#### Special features

- Long service life due to especially robust design
- Vibration- and shock-resistant
- No formation of condensation
- Staple-lock coupling DN 10 per DIN 20043
- Scale ranges up to 800 bar or 10,000 psi



Bourdon tube pressure gauge, model 213.41

#### Description

The liquid-filled model 213.41 Bourdon tube pressure gauge is constructed with a forged brass case and stainless steel measuring element.

The gauge is designed to meet the strict requirements of the mining industry.

Due to the case fill fluid, the measuring element and movement are efficiently damped. Therefore, these instruments are particularly suited to measuring locations with high dynamic loads, such as fast load cycles or vibrations.

A version with a luminescent dial and pointer can be supplied for low-light areas.

WIKA manufactures and qualifies the pressure gauge in accordance with the standards EN 837-1 and ASME B40.100. As a safety function, this instrument has a blow-out device with blow-out plug on the top of the case. In the event of a failure, overpressure can escape there.

# Specifications

Basic information	
<b>Standard</b>	<ul style="list-style-type: none"> <li>■ EN 837-1</li> <li>■ ASME B40.100</li> </ul> <p>For information on the "Selection, installation, handling and operation of pressure gauges", see technical information IN 00.05.</p>
<b>Nominal size (NS)</b>	Ø 50 mm [2"]
<b>Connection location</b>	Lower mount (radial)
<b>Window</b>	Acrylic glass (PMMA)
<b>Case</b>	
Design	Safety level "S1" per EN 837-1: With blow-out device at case circumference, 12 o'clock
Material	<ul style="list-style-type: none"> <li>■ Forged brass, black painted</li> <li>■ Forged brass, natural finish</li> </ul>
<b>Ring</b>	Crimp ring, stainless steel
<b>Case filling <sup>1)</sup></b>	<ul style="list-style-type: none"> <li>■ Glycerine</li> <li>■ Silicone oil</li> </ul>
<b>Movement</b>	Copper alloy

1) For operating conditions, see table on page 3

Measuring element	
<b>Type of measuring element</b>	Bourdon tube, helical type
<b>Material</b>	Stainless steel 1.4404 (316L)
<b>Leak tightness</b>	Leakage rate: $< 5 \cdot 10^{-3}$ mbar l/s

Accuracy specifications		
<b>Accuracy class</b>	■ EN 837-1	Class 2.5
	■ ASME B40.100	$\pm 3\%$   $\pm 2\%$   $\pm 3\%$ of measuring span (grade B)
<b>Temperature error</b>	On deviation from the reference conditions at the measuring system: $\leq \pm 0.4\%$ per 10 °C [ $\leq \pm 0.4\%$ per 18 °F] of full scale value	
<b>Reference conditions</b>		
Ambient temperature	+20 °C [+68 °F]	

## Scale ranges

bar	
0 ... 60	0 ... 600
0 ... 250	0 ... 700
0 ... 300	0 ... 800
0 ... 450	-

kg/cm <sup>2</sup>	
0 ... 60	0 ... 600
0 ... 250	0 ... 700
0 ... 300	0 ... 800
0 ... 450	-

kPa	
0 ... 6,000	0 ... 60,000
0 ... 25,000	0 ... 70,000
0 ... 30,000	0 ... 80,000
0 ... 45,000	-

MPa	
0 ... 6	0 ... 60
0 ... 25	0 ... 70
0 ... 30	0 ... 80
0 ... 45	-

psi	
0 ... 800	0 ... 7,500
0 ... 3,000	0 ... 8,700
0 ... 4,000	0 ... 10,000
0 ... 5,000	-

Further details on: scale ranges	
<b>Special scale ranges</b>	Other scale ranges on request
<b>Unit</b>	<input type="checkbox"/> bar <input type="checkbox"/> psi <input type="checkbox"/> kg/cm <sup>2</sup> <input type="checkbox"/> kPa <input type="checkbox"/> MPa
<b>Dial</b>	
Scale colour	Black
Material	Copper alloy
Special scale	Other scales or customer-specific dials, e.g. with luminous dial, red mark, circular arcs or circular sectors, on request
<b>Instrument pointer</b>	<input type="checkbox"/> Copper alloy, black <input type="checkbox"/> Copper alloy, painted with luminous colour
<b>Pointer stop pin</b>	At zero point

Process connection	
<b>Standard</b>	Staple-lock coupling per DIN 20043
<b>Size</b>	DN 10
<b>Restrictor</b>	<input type="checkbox"/> Without <input type="checkbox"/> Ø 0.5 mm [0.02"], brass
<b>Material (wetted)</b>	
Process connection	Copper alloy
Bourdon tube	Stainless steel 1.4404 (316L)



Other process connections on request

Operating conditions	
<b>Medium temperature</b>	max. +60 °C [+140 °F]
<b>Ambient temperature</b>	
Instruments with glycerine filling	-20 ... +60 °C [-4 ... +140 °F]
Instruments with silicone oil filling	-40 ... +60 °C [-40 ... +140 °F]
<b>Pressure limitation</b>	
Steady	3/4 x full scale value
Fluctuating	2/3 x full scale value
Short time	Full scale value
<b>Ingress protection per IEC/EN 60529</b>	IP65

## Approvals

Logo	Description	Country
	<b>EU declaration of conformity</b> Pressure Equipment directive PS > 200 bar, module A, pressure accessory	European Union

### Optional approvals

Logo	Description	Country
	<b>PAC Kazakhstan</b> Metrology, measurement technology	Kazakhstan
-	<b>PAC Ukraine</b> Metrology, measurement technology	Ukraine
	<b>PAC Uzbekistan</b> Metrology, measurement technology	Uzbekistan
-	<b>CPA</b> Metrology, measurement technology	China

## Manufacturer's declaration

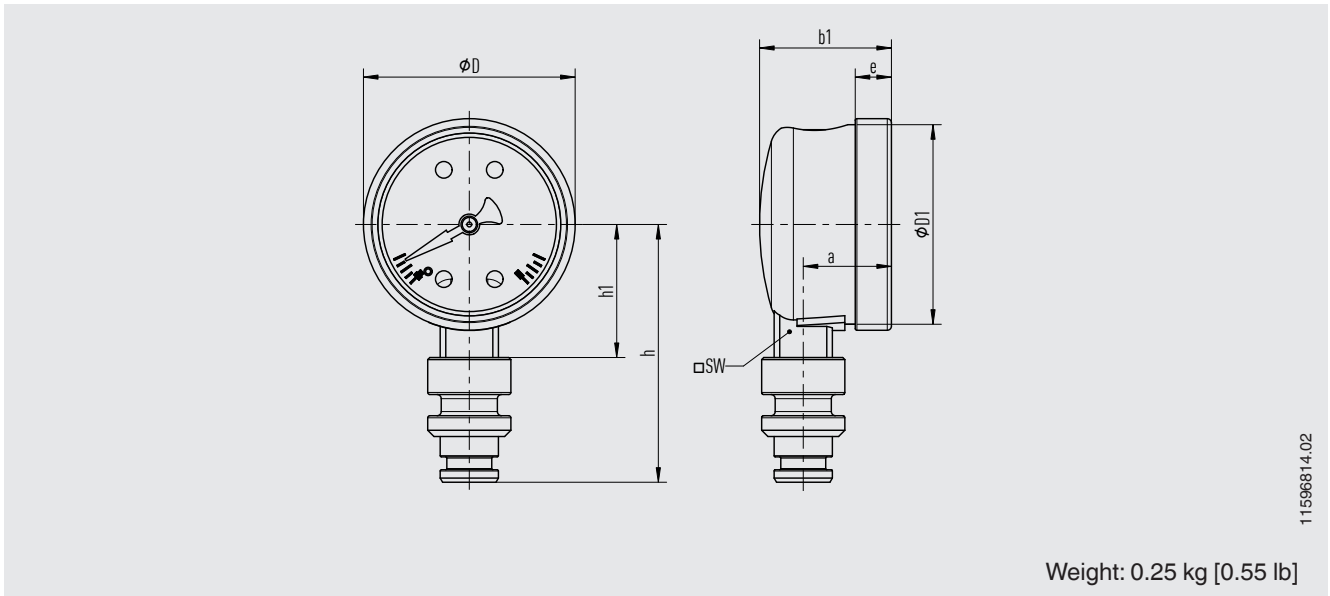
Logo	Description
-	Pressure Equipment Directive (PED) for maximum allowable pressure $PS \leq 200$ bar

## Certificates

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

→ For approvals and certificates, see website

## Dimensions in mm [in]



### Staple-lock coupling per DIN 20043

NS	Dimensions in mm [in]							
	$h \pm 1$ [0.04]	$h_1 \pm 0.5$ [0.02]	e	a	$b_1 \pm 0.5$ [0.02]	D	D1	SW
DN 10	62 [2.44]	32 [1.26]	8.7 [0.34]	21.2 [0.83]	31.7 [1.25]	51 [2.01]	48 [1.89]	14 [0.55]

### Ordering information

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

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