

# Bourdon tube pressure gauge for connection to WIKA radio unit

## Safety version, NS 100 [4"]

### Models PGU23.100 and PGU26.100

WIKA data sheet PV 42.03



for further approvals,  
see page 6

#### Applications

- Remote monitoring of the process pressure for non-critical applications in combination with WIKA radio unit, model NETRIS®3
- Process industry: Oil and gas, chemical and petrochemical industries, water and wastewater, power generation
- For gaseous and liquid aggressive media that are not highly viscous or crystallising
- Increased safety requirements for personal protection

#### Special features

- IIoT-capable measuring instrument in combination with WIKA radio unit, model NETRIS®3
- Mechanical on-site indication with integrated digital interface
- Intrinsically safe version Ex i per ATEX, IECEx
- Measuring ranges from 0 ... 0.6 to 0 ... 1,600 bar [0 ... 10 to 0 ... 20,000 psi] as well as vacuum and +/- measuring ranges

#### Description

The model PGU2x.100 pressure gauge in combination with the model NETRIS®3 radio unit is used wherever web-based remote monitoring of the process pressure is desired in addition to on-site indication.

The model PGU2x.100 combines a mechanical measuring system with electronic signal processing and is intended for connection to the WIKA model NETRIS®3 radio unit. In this way, cloud based process and plant monitoring can be realised in industrial applications. Condition-based and preventive maintenance through centralised big data analysis is thus possible.



**Bourdon tube pressure gauge for connection to WIKA radio unit, model PGU23.100**

The model PGU2x.100 pressure gauge fulfils safety-related requirements of the relevant standards and regulations for the on-site indication of the operating pressure of pressure vessels.

The model PGU2x is based upon a model 2xx.30 high-quality, safety pressure gauge with a nominal size of 100, which corresponds to the S3 safety version of the EN 837-1.

The WIKA measuring instrument PGU2x.100 is part of the WIKA IIoT solution. With this, WIKA offers a holistic solution for your digitalisation strategy.

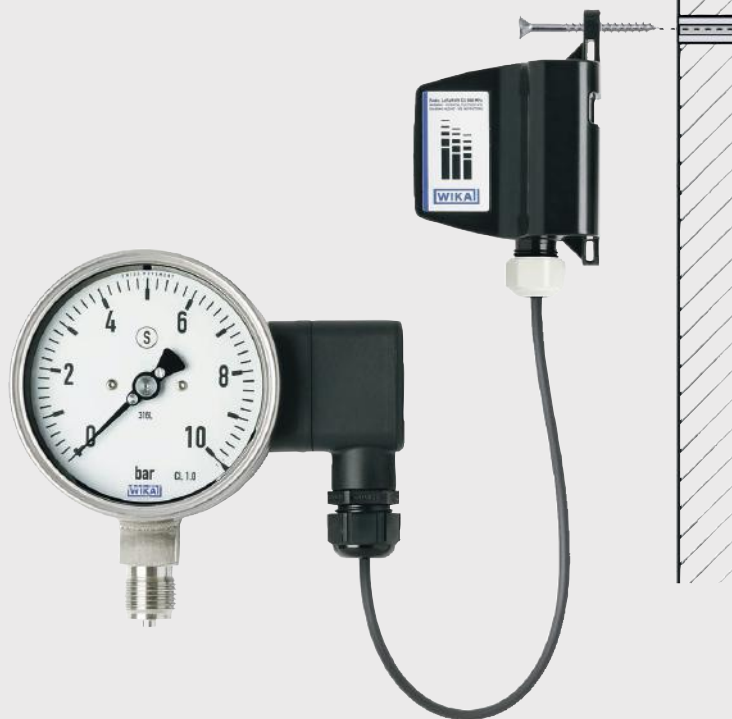
## Installation examples

Model PGU2x.100 with mounted WIKA radio unit, model NETRIS®3

Direct mounting of model NETRIS®3



Wall mounting of model NETRIS®3



Radio unit NETRIS®3 not included in the scope of delivery

### Mounting variants for the WIKA model NETRIS®3 radio unit

The radio unit can be mounted either by direct mounting to the case back of the pressure gauge or remotely in a more suitable location.

## Specifications

Basic information	
<b>Further version</b>	<ul style="list-style-type: none"> <li>■ Oil- and grease-free</li> <li>■ For oxygen, oil- and grease-free</li> <li>■ Monel version; model PGU26.100</li> </ul>
<b>Nominal size (NS)</b>	Ø 100 mm [4"]
<b>Window</b>	Laminated safety glass
<b>Connection location</b>	Lower mount (radial)
<b>Case</b>	
Design	Safety level "S3" per EN 837-1: With solid baffle wall (solidfront) and blow-out back
Material	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4301 (304)</li> <li>■ Stainless steel 1.4571 (316 Ti)</li> </ul>
<b>Ring</b>	Bayonet ring, stainless steel
<b>Mounting</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Panel mounting flange, stainless steel</li> </ul>
<b>Case filling</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Silicone oil</li> </ul>
<b>Connection type</b>	
Material	PA 6, black

Accuracy specifications	
<b>Accuracy class <sup>1)</sup></b>	1.0 per EN 837-1
<b>Temperature error</b>	When the temperature of the measuring system deviates from the reference temperature (20 °C [68 °F]): max. $\leq \pm 0.4 \%$ /10 K of full scale value

1) The accuracy class is valid for the mechanical display and for the digitally transmitted pressure values.

## Measuring ranges

bar		
0 ... 0.6	0 ... 10	0 ... 160
0 ... 1	0 ... 16	0 ... 250
0 ... 1.6	0 ... 25	0 ... 400
0 ... 2.5	0 ... 40	0 ... 600
0 ... 4	0 ... 60	0 ... 1,000
0 ... 6	0 ... 100	0 ... 1,600 <sup>1)</sup>

kg/cm <sup>2</sup>		
0 ... 0.6	0 ... 10	0 ... 160
0 ... 1	0 ... 16	0 ... 250
0 ... 1.6	0 ... 25	0 ... 400
0 ... 2.5	0 ... 40	0 ... 600
0 ... 4	0 ... 60	0 ... 1,000
0 ... 6	0 ... 100	0 ... 1,600 <sup>1)</sup>

kPa		
0 ... 60	0 ... 1,000	0 ... 16,000
0 ... 100	0 ... 1,600	0 ... 25,000
0 ... 160	0 ... 2,500	0 ... 40,000
0 ... 250	0 ... 4,000	0 ... 60,000
0 ... 400	0 ... 6,000	0 ... 100,000
0 ... 600	0 ... 10,000	0 ... 160,000 <sup>1)</sup>

MPa		
0 ... 0.06	0 ... 1	0 ... 16
0 ... 0.1	0 ... 1.6	0 ... 25
0 ... 0.16	0 ... 2.5	0 ... 40
0 ... 0.25	0 ... 4	0 ... 60
0 ... 0.4	0 ... 6	0 ... 100
0 ... 0.6	0 ... 10	0 ... 160 <sup>1)</sup>

psi		
0 ... 10	0 ... 300	0 ... 3,000
0 ... 15	0 ... 400	0 ... 4,000
0 ... 30	0 ... 600	0 ... 5,000
0 ... 60	0 ... 800	0 ... 6,000
0 ... 100	0 ... 1,000	0 ... 10,000
0 ... 160	0 ... 1,500	0 ... 15,000
0 ... 200	0 ... 2,000	0 ... 20,000 <sup>1)</sup>

1) Only for model PGU23.100

## Vacuum and +/- measuring ranges

bar	
-0.6 ... 0	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	

MPa	
-0.06 ... 0	-0.1 ... +0.5
-0.1 ... 0	-0.1 ... +0.9
-0.1 ... +0.06	-0.1 ... +1.5
-0.1 ... +0.15	-0.1 ... +2.4
-0.1 ... +0.3	

kPa	
-60 ... 0	-100 ... +500
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,500
-100 ... +150	-100 ... +2,400
-100 ... +300	

psi	
-30 inHg ... 0	-30 inHg ... +100
-30 inHg ... +15	-30 inHg ... +160
-30 inHg ... +30	-30 inHg ... +200
-30 inHg ... +60	-30 inHg ... +300

Further details on: Measuring ranges	
<b>Unit</b>	<ul style="list-style-type: none"> <li>■ bar</li> <li>■ psi</li> <li>■ kg/cm<sup>2</sup></li> <li>■ kPa</li> <li>■ MPa</li> </ul>
<b>Increased overload safety</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ 1.6 times</li> <li>■ 2 times</li> </ul> <p>The possibility of selection depends on indication range and nominal size</p>
<b>Vacuum resistance</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Vacuum-resistant to -1 bar</li> </ul>
<b>Dial</b>	
Scale layout	<ul style="list-style-type: none"> <li>■ Single scale</li> <li>■ Dual scale</li> </ul>
<b>Movement</b>	Brass
<b>Pointer</b>	
Instrument pointer	Aluminium, black

Other measuring ranges on request

Process connection	
<b>Standard</b>	<ul style="list-style-type: none"> <li>■ EN 837-1</li> <li>■ ANSI/B1.20.1</li> </ul>
<b>Size</b>	
EN 837-1	<ul style="list-style-type: none"> <li>■ G ¼ B, male thread</li> <li>■ G ½ B, male thread</li> <li>■ M20 x 1.5, male thread</li> </ul>
ANSI/B1.20.1	<ul style="list-style-type: none"> <li>■ ¼ NPT, male thread</li> <li>■ ½ NPT, male thread</li> </ul>

Other process connections on request

Digital interface	
<b>Signal type</b>	Unified WIKA interface (UWI)
<b>Signal transmission of the pressure value</b>	The pressure value of the main scale is transmitted digitally. With dual scales, the pressure value of the second scale is not transmitted digitally.
<b>Digital signal resolution</b>	0.04 % of measuring span
<b>Connection type</b>	NETRIS®3 plug connection for angular connectors

Material		
<b>Material (wetted)</b>		
Process connection, measuring element	Model PGU23.100	Stainless steel 316L
	Model PGU26.100	Monel <sup>1)</sup>





1) For wetted materials from Monel to max. 1,000 bar [15,000 psi]

Operating conditions	
Medium temperature range <sup>1)</sup>	-40 ... +100 °C [-40 ... +212 °F]
Ambient temperature range	-40 ... +60 °C [-40 ... +140 °F]
Pressure limitation	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Short time	1.3 x full scale value
Ingress protection per IEC/EN 60529 <sup>2)</sup>	<ul style="list-style-type: none"> <li>■ IP54</li> <li>■ IP65 (for instruments with case filling)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>■ 0,636 kg [1,70 lb] (for instruments without case filling)</li> <li>■ 0,905 kg [2,42 lb] (for instruments with case filling)</li> </ul>

1) Restricted medium temperature range: -40 ... +60 °C [-40 ... +140 °F] with direct mounting of model NETRIS®3 to the case back of the pressure gauge, see mounting variants on page 2

2) The ingress protection only applies with a correct plug connection with model NETRIS®3.

## Approvals

Logo	Description	Country
 	<b>EU declaration of conformity</b>	European Union
	<b>ATEX directive</b> Hazardous areas - Ex i Zone 1 gas II 2G Ex ia IIC T4 Gb	
	Pressure equipment directive (pressure accessory, module A)	
	<b>EMC directive</b> EN 61326 emission (group 1, class B) and immunity (industrial application)	
	RoHS directive	
 	<b>IECEX</b> Hazardous areas - Ex i Zone 1 gas Ex ia IIC T4 Gb	International

## Certificates (option)

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

→ For approvals and certificates, see website

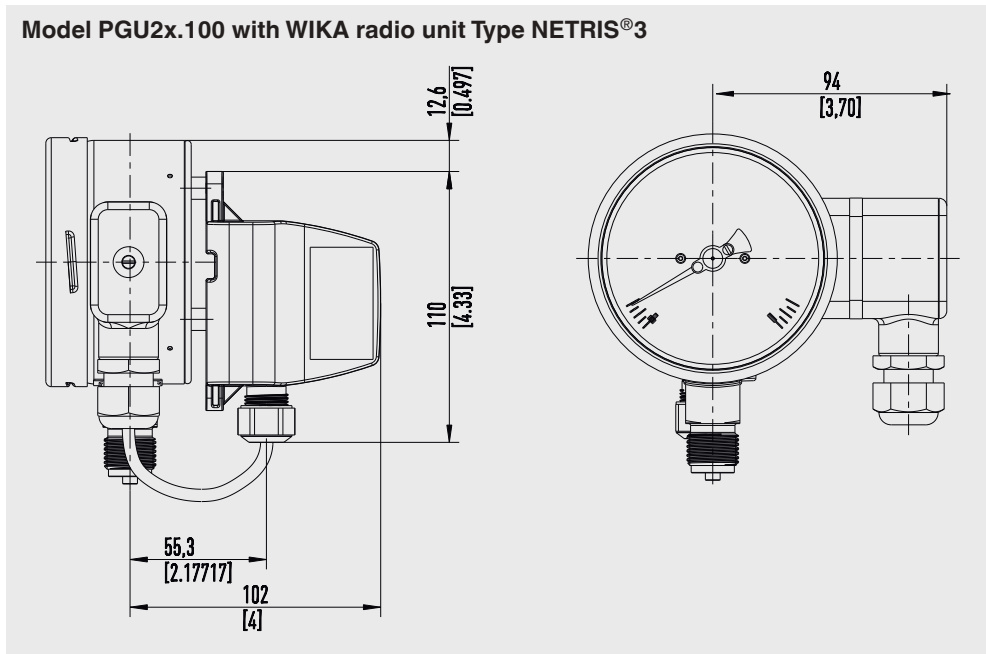
## Safety-related characteristic values (Ex)

Safety-related characteristic values (Ex)	
<b>Electrical parameters of the intrinsically safe voltage supply</b>	
Max. input voltage $U_i$	DC 7 V
Max. input current for gas applications $I_i$	250 mA
Max. input power $P_i$	330 mW
Effective internal capacitance $C_i$	4.75 $\mu$ F
Effective internal inductance $L_i$	Negligible
<b>Temperature range</b>	
Ambient temperature	-40 ... +60 °C [-40 ... +140 °F]
Medium temperature <sup>1)</sup>	-40 ... +100 °C [-40 ... +212 °F]

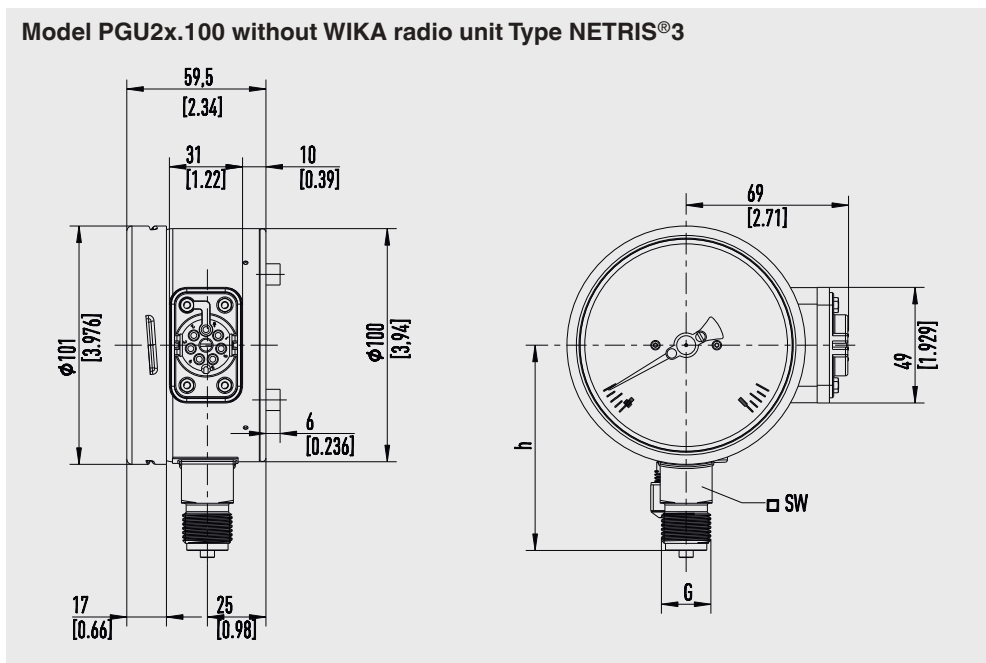
1) Restricted medium temperature range: -40 ... +60 °C [-40 ... +140 °F] with direct mounting of model NETRIS®3 to the case back of the pressure gauge, see "mounting variants" page 2

The model PGU2x.100 is intended for use with the intrinsically safe, battery-powered WIKA model NETRIS®3 radio unit with ignition protection type "ia".

## Dimensions in mm [in]



Radio unit NETRIS®3 not included in the scope of delivery



### Process connection with thread per EN 837-1








NG	G	Dimensions in mm [in]	
		h ±1 [0,04]	SW
100 [4"]	G ¼ B	87 [3,43]	22 [0,87]
	G ½ B	87 [3,43]	22 [0,87]
	M20 x 1,5	87 [3,43]	22 [0,87]

### Process connection with thread per ANSI/B1.20.1

NG	G	Dimensions in mm [in]	
		h ±1 [0,04]	SW
100 [4"]	¼ NPT	80 [3,15]	22 [0,87]
	½ NPT	86 [3,39]	22 [0,87]



## Accessories

	Model	Description
	<b>NETRIS®3</b>	Radio unit with LoRaWAN® for WIKA measuring instruments For applications in hazardous areas → See data sheet AC 40.03
	<b>910.17</b>	Sealings → See data sheet AC 09.08
	<b>910.15</b>	Syphons → See data sheet AC 09.06
	<b>910.13</b>	Overpressure protector → See data sheet AC 09.04
	<b>IV10, IV11</b>	Needle valve and multiport valve → See data sheet AC 09.22
	<b>IV20, IV21</b>	Block-and-bleed valve → See data sheet AC 09.19
	<b>IVM</b>	Monoflange, process and instrument version → See data sheet AC 09.17

## Ordering information

Model / Case filling / Indication range / Process connection / Options

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