

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.

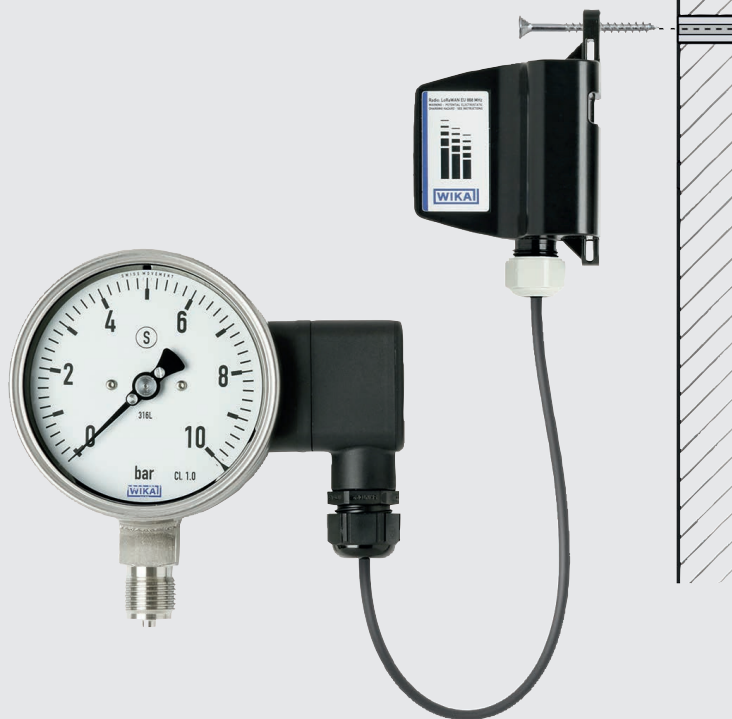
Installation examples

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

Accuracy specifications	
Accuracy class ¹⁾	1.0 per EN 837-1
Temperature error	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 ¹⁾

kg/cm ²		
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 ¹⁾

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 ¹⁾

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 ¹⁾

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 ¹⁾

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	
Unit	<ul style="list-style-type: none"> ■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Increased overload safety	<ul style="list-style-type: none"> ■ Without ■ 1.6 times ■ 2 times <p>The possibility of selection depends on indication range and nominal size</p>
Vacuum resistance	<ul style="list-style-type: none"> ■ Without ■ Vacuum-resistant to -1 bar
Dial	
Scale layout	<ul style="list-style-type: none"> ■ Single scale ■ Dual scale
Movement	Brass
Pointer	
Instrument pointer	Aluminium, black

Other measuring ranges on request

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

Other process connections on request

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

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





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

Operating conditions	
Medium temperature range ¹⁾	-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 ²⁾	<ul style="list-style-type: none"> ■ IP54 ■ IP65 (for instruments with case filling)
Weight	<ul style="list-style-type: none"> ■ 0,636 kg [1,70 lb] (for instruments without case filling) ■ 0,905 kg [2,42 lb] (for instruments with case filling)

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

Certificates (option)

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

→ For approvals and certificates, see website

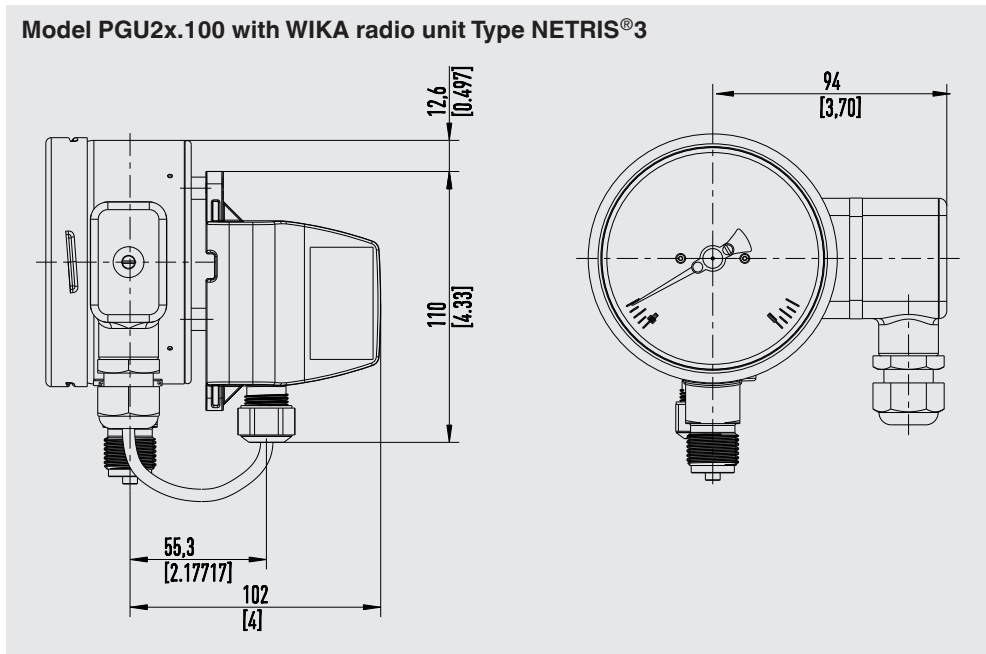
Safety-related characteristic values (Ex)

Safety-related characteristic values (Ex)	
Electrical parameters of the intrinsically safe voltage supply	
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 μ F
Effective internal inductance L_i	Negligible
Temperature range	
Ambient temperature	-40 ... +60 °C [-40 ... +140 °F]
Medium temperature ¹⁾	-40 ... +100 °C [-40 ... +212 °F]

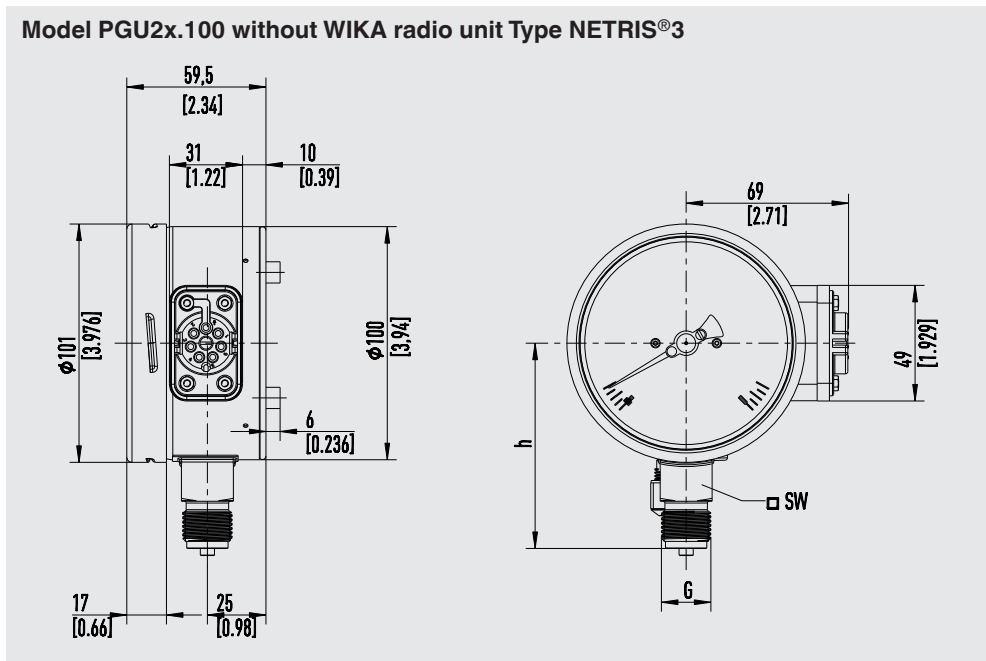
1) Restricted medium temperature range: -40 ... +60 °C [-40 ... +140 °F] with direct mounting of model NETRIS®3 to the case back of the pressure gauge, see "mounting variants" page 2

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








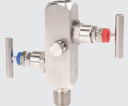

Process connection with thread per EN 837-1

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