

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

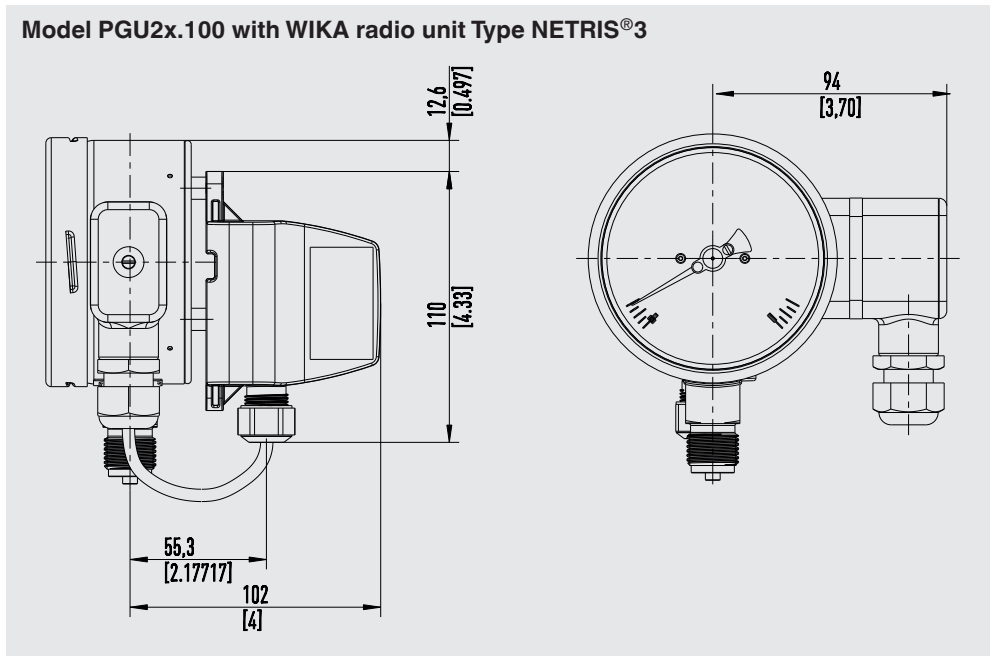
Safety-related characteristic values (Ex)

| 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] |

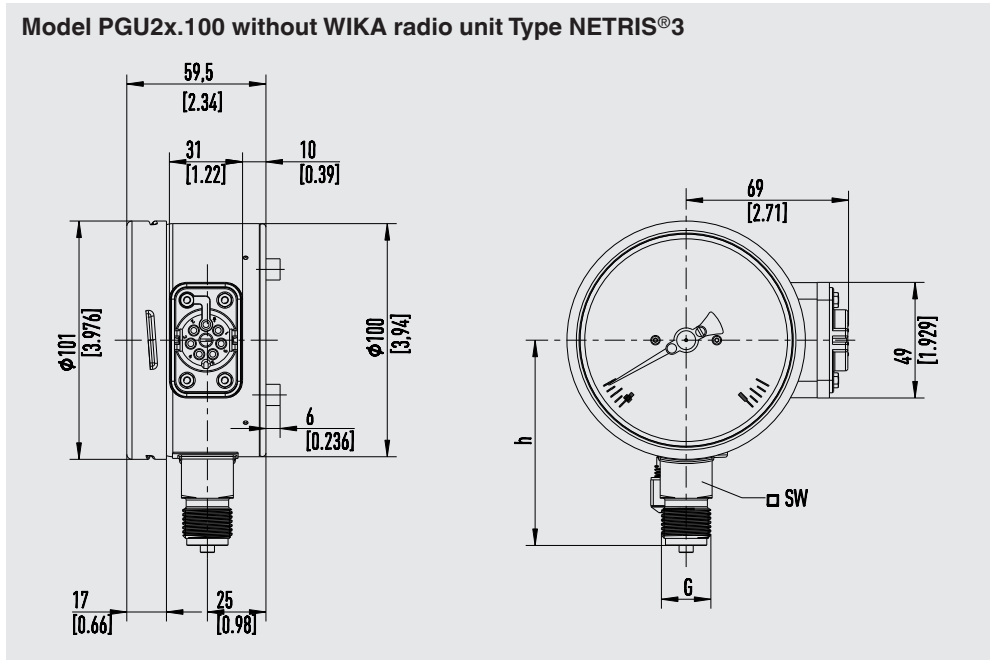
1) Restricted medium temperature range: -40 ... +60 °C [-40 ... +140 °F] with direct mounting of model NETRIS[®]3 to the case back of the pressure gauge, see "mounting variants" page 2

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








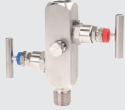

Process connection with thread per EN 837-1

| 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 |

Ordering information

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

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