

Bourdon tube pressure gauge, copper alloy

Panel mounting series

Models 111.16 and 111.26

WIKA data sheet PM 01.10



For further approvals,
see page 6

Applications

- For gaseous and liquid media that are not highly viscous or crystallising and will not attack copper alloy parts
- Heating and air-conditioning technology
- Small-capacity compressors
- Drink dispensers
- Medical engineering

Special features

- Specifically for panel mounting
- Reliable and cost-effective
- Version per EN 837-1 or ASME B40.100
- Scale ranges to 0 ... 400 bar or 0 ... 6,000 psi



Fig. left: Model 111.16
Fig. right: Model 111.26

Description

The models 111.16 and 111.26 have been specifically designed for panel mounting and therefore feature a back mount process connection.

The model 111 pressure gauges are based on the proven Bourdon tube measuring system. On pressurisation, the deformation of the Bourdon tube, proportional to the incident pressure, is transmitted to the movement via a link and indicated.

For easy installation, the plastic cases of the panel mounting series are already equipped with a mounting flange.

The model 111.16 Bourdon tube pressure gauge can be fitted to the control panel by means of a mounting bracket (accessory). The model 111.26 is mounted to the panel by “snap-in mounting” using lateral locating lugs at the case. In addition, metallised front bezels can be supplied for the model 111.26.

The panel mounting series of model 111 is also available in customer-specific versions, e.g. with individual dial layout.

Specifications

Basic information	
Standard	<ul style="list-style-type: none"> ■ EN 837-1 ■ ASME B40.100 <p>→ For information on the "Selection, installation, handling and operation of pressure gauges", see technical information IN 00.05.</p>
Further version	<ul style="list-style-type: none"> ■ Oil- and grease-free ■ For closed heating systems With red mark pointer and adjustable green sector, scale range 0 ... 4 bar, red mark at 2.5 or 3 bar ■ For water level indication (hydrometer) and heating systems Scale ranges 0 ... 0.6 to 0 ... 25 bar, with second scale in mWS and red mark pointer
Nominal size (NS)	<ul style="list-style-type: none"> ■ Ø 40 mm [1 ½"] ■ Ø 50 mm [2"] ■ Ø 63 mm [2 ½"] ■ Ø 80 mm [3"]¹⁾
Connection location	Centre back mount
Window	Plastic, crystal-clear, snap-fitted in case
Case	Plastic, black
Mounting	
Model 111.16	<ul style="list-style-type: none"> ■ Panel mounting flange ■ Mounting bracket
Model 111.26	<ul style="list-style-type: none"> ■ Locating lugs on the case side ■ Triangular profile ring (only NS 40 [1 ½"], 50 [2"], 63 [2 ½"]) ■ Front flange (only NS 80 [3"])
Movement	Copper alloy

1) Only available for model 111.26

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Material	Copper alloy
Leak tightness	Leakage rate: $< 5 \cdot 10^{-3}$ mbar l/s

Accuracy specifications	
Accuracy class	
EN 837-1	<ul style="list-style-type: none"> ■ Class 2.5 ■ Class 1.6
ASME B40.100	■ $\pm 3\%$ $\pm 2\%$ $\pm 3\%$ of measuring span (grade B)
Temperature error	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
Reference conditions	
Ambient temperature	+20 °C [68 °F]

Scale ranges

bar	
0 ... 0.6	0 ... 25
0 ... 1	0 ... 30
0 ... 1.6	0 ... 40
0 ... 2	0 ... 60
0 ... 2.5	0 ... 70
0 ... 4	0 ... 100
0 ... 6	0 ... 140
0 ... 7	0 ... 160
0 ... 10	0 ... 200
0 ... 12	0 ... 250
0 ... 14	0 ... 315
0 ... 16	0 ... 400
0 ... 20	

kPa	
0 ... 60	0 ... 2,500
0 ... 70	0 ... 3,000
0 ... 100	0 ... 4,000
0 ... 160	0 ... 6,000
0 ... 200	0 ... 7,000
0 ... 250	0 ... 8,000
0 ... 300	0 ... 10,000
0 ... 400	0 ... 14,000
0 ... 600	0 ... 16,000
0 ... 700	0 ... 20,000
0 ... 800	0 ... 25,000
0 ... 1,000	0 ... 31,500
0 ... 1,400	0 ... 40,000
0 ... 1,600	

psi	
0 ... 10	0 ... 500
0 ... 15	0 ... 600
0 ... 30	0 ... 800
0 ... 60	0 ... 1,000
0 ... 100	0 ... 1,500
0 ... 150	0 ... 2,000
0 ... 160	0 ... 3,000
0 ... 200	0 ... 4,000
0 ... 250	0 ... 5,000
0 ... 300	0 ... 6,000
0 ... 400	

kg/cm ²	
0 ... 0.6	0 ... 25
0 ... 1	0 ... 30
0 ... 1.6	0 ... 40
0 ... 2	0 ... 60
0 ... 2.5	0 ... 70
0 ... 4	0 ... 100
0 ... 6	0 ... 140
0 ... 7	0 ... 160
0 ... 10	0 ... 200
0 ... 14	0 ... 250
0 ... 16	0 ... 315
0 ... 20	0 ... 400

MPa	
0 ... 0.06	0 ... 2.5
0 ... 0.1	0 ... 3
0 ... 0.16	0 ... 4
0 ... 0.2	0 ... 6
0 ... 0.25	0 ... 7
0 ... 0.4	0 ... 10
0 ... 0.6	0 ... 14
0 ... 0.7	0 ... 16
0 ... 1	0 ... 20
0 ... 1.4	0 ... 25
0 ... 1.6	0 ... 31.5
0 ... 2	0 ... 40

Vacuum and +/- scale ranges

bar	
-0.6 ... 0	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	-1 ... +30

kg/cm ²	
-0.6 ... 0	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	-1 ... +30

kPa	
-60 ... 0	-100 ... +500
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,500
-100 ... +150	-100 ... +2,400
-100 ... +300	-100 ... +3,000

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	-0.1 ... +3

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

Further details on: Scale ranges

Special scale ranges	Other scale ranges on request	
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 scale range and nominal size</p>	
Vacuum resistance	<ul style="list-style-type: none"> ■ Without ■ Vacuum-resistant to -1 bar [-30 inHg] 	
Dial		
Scale colour	Black	
Material	NS 40 [1 ½"], 50 [2"], 63 [2 ½"]	Plastic
	NS 80 [3"]	Aluminium
Special scale	Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request	
Pointer		
Mark pointer/drag pointer	<ul style="list-style-type: none"> ■ Without ■ Red mark pointer on dial, fixed ¹⁾ ■ Red mark pointer on window, adjustable 	
Instrument pointer	Plastic, black	
Pointer stop pin	<ul style="list-style-type: none"> ■ Without ■ At zero point 	



1) Red mark pointer with measuring ranges 0 ... 0.6 to 0 ... 60 bar

Process connection	
Standard	<ul style="list-style-type: none"> ■ EN 837-1 ■ ISO 7 ■ ANSI/B1.20.1
Size	
EN 837-1	<ul style="list-style-type: none"> ■ G 1/8 B, male thread ■ G 1/4 B, male thread ■ G 1/2 B, male thread
ISO 7	<ul style="list-style-type: none"> ■ R 1/8, male thread ■ R 1/4, male thread ■ R 1/2, male thread
ANSI/B1.20.1	<ul style="list-style-type: none"> ■ 1/8 NPT, male thread ■ 1/4 NPT, male thread ■ 1/2 NPT, male thread
Restrictor	<ul style="list-style-type: none"> ■ Without ■ Ø 0.5 mm [0.02"], copper alloy ■ Ø 0.3 mm [0.012"], copper alloy
Material (wetted)	
Process connection	Copper alloy
Bourdon tube	Copper alloy



Other process connections on request

Operating conditions	
Medium temperature	-20 ... +60 °C [-4 ... +140 °F]
Ambient temperature	-20 ... +60 °C [-4 ... +140 °F]
Pressure limitation	
Steady	3/4 x full scale value
Fluctuating	2/3 x full scale value
Short time	Full scale value
Ingress protection per IEC/EN 60529	IP41

Approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	Pressure Equipment Directive PS > 200 bar, module A, pressure accessory	
	UKCA	United Kingdom
	Pressure equipment (safety) regulations	
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

Optional approvals

Logo	Description	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	PAC China Metrology, measurement technology	China

Manufacturer's information and certificates

Logo	Description
-	Pressure Equipment Directive (PED) for maximum allowable pressure $PS \leq 200$ bar
-	Suitability of wetted materials for drinking water per European 4MS initiative

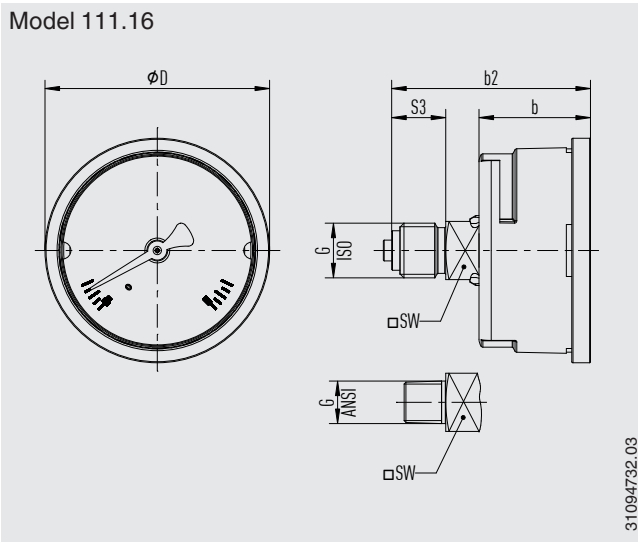
Certificates (option)

Certificates	
Certificates	<ul style="list-style-type: none"> ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ PCA calibration certificate, traceable and accredited per ISO/IEC 17025 ■ Calibration certificate by a national accreditation body, traceable and accredited per ISO/IEC 17025 on request
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm [in]

Model 111.16



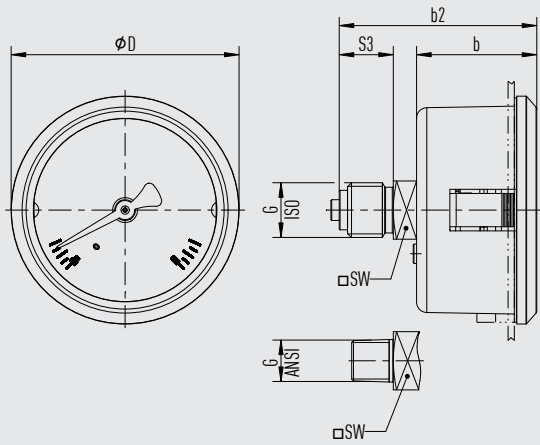
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NS	G ¹⁾	Dimensions in mm [in]				
		$b \pm 0.5$ [0.02]	$b_2 \pm 1$ [0.04]	S3	D	SW
40 [1 ½"]	G ½ B, ½ NPT, R ½	26.5 [1.04]	44.5 [1.75]	10 [0.93]	45 [1.77]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	26.5 [1.04]	47.5 [1.87]	13 [0.51]	45 [1.77]	14 [0.55]
50 [2"]	G ½ B, ½ NPT, R ½	26.5 [1.04]	44.5 [1.75]	10 [0.93]	54 [2.13]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	26.5 [1.04]	47.5 [1.87]	13 [0.51]	54 [2.13]	14 [0.55]
63 [2 ½"]	G ½ B, ½ NPT, R ½	29.5 [1.16]	44.5 [1.75]	10 [0.93]	68 [2.68]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29.5 [1.16]	47.5 [1.87]	13 [0.51]	68 [2.68]	14 [0.55]

1) The G ½ B process connection of this instrument is manufactured without a centring spigot and with a thread run-out instead of a thread undercut.

NS	Weight in g [oz]
40 [1 ½"]	90 [3.17]
50 [2"]	100 [3.53]
63 [2 ½"]	120 [4.23]

Model 111.26, NS 40 [1 ½"], 50 [2"], 63 [2 ½"]



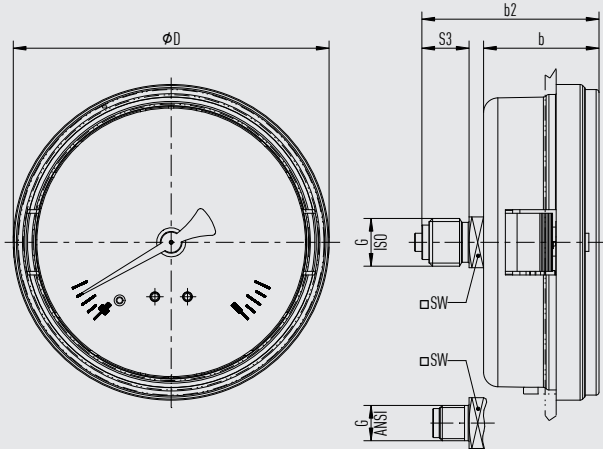
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NS	Weight in g [oz]
40 [1 ½"]	130 [4.56]
50 [2"]	130 [4.56]
63 [2 ½"]	140 [4.94]

NS	G ¹⁾	Dimensions in mm [in]				
		b ±0.5 [0.02]	b2 ±1 [0.04]	S3	D	SW
40 [1 ½"]	G ½ B, ½ NPT, R ½	29 [1.14]	44.5 [1.75]	10 [0.93]	44 [1.73]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29 [1.14]	47.5 [1.87]	13 [0.51]	44 [1.73]	14 [0.55]
50 [2"]	G ½ B, ½ NPT, R ½	29 [1.14]	44.5 [1.75]	10 [0.93]	55 [2.16]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29 [1.14]	47.5 [1.87]	13 [0.51]	55 [2.16]	14 [0.55]
63 [2 ½"]	G ½ B, ½ NPT, R ½	29 [1.14]	44.5 [1.75]	10 [0.93]	68 [2.68]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29 [1.14]	47.5 [1.87]	13 [0.51]	68 [2.68]	14 [0.55]

1) The G ½ B process connection of this instrument is manufactured without a centring spigot and with a thread run-out instead of a thread undercut.

Model 111.26, NS 80 [3"]











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NS	Weight in g [oz]
80 [3"]	180 [6.35]

NS	G ¹⁾	Dimensions in mm [in]				
		b ±0.5 [0.02]	b2 ±1 [0.04]	S3	D	SW
80 [3"]	G ½ B, ½ NPT, R ½	31.5 [1.24]	45.5 [1.79]	10 [0.93]	87 [3.43]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	31.5 [1.24]	48.5 [1.91]	13 [0.51]	87 [3.43]	14 [0.55]

1) The G ½ B process connection of this instrument is manufactured without a centring spigot and with a thread run-out instead of a thread undercut.

Accessories and spare parts

Model	Description
	910.33 Adhesive label set for red and green circular arcs → See data sheet AC 08.03
	910.17 Seals → 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
	BV Ball valve, process and instrument version → See data sheet AC 09.28

Ordering information

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

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