

## Bourdon tube pressure gauge, stainless steel For the process industry, safety version Models 232.30 and 233.30

WIKA data sheet PM 02.04



for further approvals,  
see page 6

### Applications

- Increased safety requirements for personal protection
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Oil and gas industry, chemical and petrochemical industries, power engineering and also water and wastewater technology

### Special features

- Safety version with solid baffle wall (Solidfront) designed in compliance with the requirements of EN 837-1 and ASME B40.100
- Excellent load-cycle stability and shock resistance
- With case filling (model 233.30) for applications with high dynamic pressure loads and vibrations
- EMICO gauge version, to avoid fugitive emissions
- Scale ranges from 0 ... 0.6 to 0 ... 1,600 bar [0 ... 10 to 0 ... 20,000 psi]



Bourdon tube pressure gauge, model 232.30, NS 100 [4\"]

### Description

This high-quality Bourdon tube pressure gauge has been designed especially for increased safety requirements within the process industry.

The use of high-quality stainless steel materials and the robust design are geared to applications in the chemical and process engineering industries. Thus the instrument is suitable for liquid and gaseous media, also in aggressive environments.

Scale ranges of 0 ... 0.6 to 0 ... 1,600 bar [0 ... 10 to 0 ... 20,000 psi] ensure the measuring ranges required for a wide variety of applications.

WIKA manufactures and qualifies the pressure gauge in accordance with the standards EN 837-1 and ASME B40.100. This safety version is made up of a non-splintering window, a solid baffle wall between measuring system and dial and a blow-out back. In the event of a failure, the operator is protected at the front side, as media or components can only be ejected via the back of the case.

For harsh operating conditions (e.g. vibrations), all instruments are also available with an optional liquid filling.

# 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>Further version</b>	<ul style="list-style-type: none"> <li>■ For oxygen, oil- and grease-free</li> <li>■ Per NACE <sup>1)</sup> MR0175 / ISO 15156, use in H<sub>2</sub>S-containing environments in oil and gas production</li> <li>■ Per NACE <sup>1)</sup> MR0103 / ISO 17945, metals resistant to sulphide stress cracking</li> <li>■ With pre-volume deflagration flame arrester <sup>2)</sup> for connection to zone 0 (EPL Ga); model 910.21; see data sheet AC 91.02</li> <li>■ Monel version; models 262 and 263; see data sheet PM 02.33</li> <li>■ EMICOgauge, to avoid fugitive emissions; instrument hook-up with instrumentation valves → See page 10</li> </ul>
<b>Nominal size (NS)</b>	<ul style="list-style-type: none"> <li>■ Ø 63 mm [2 ½"]</li> <li>■ Ø 100 mm [4"]</li> <li>■ Ø 160 mm [6"]</li> </ul>
<b>Connection location</b>	<ul style="list-style-type: none"> <li>■ Lower mount (radial)</li> <li>■ Lower back mount <sup>3)</sup></li> </ul>
<b>Window</b>	Laminated safety glass (NS 63 [2 ½"]: Polycarbonate)
<b>Case</b>	
Design	<p>Safety level "S3" per EN 837-1            With solid baffle wall and blow-out back            Scale ranges ≤ 0 ... 16 bar [≤ 0 ... 300 psi] with compensating valve to vent and reseal case</p>
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> <li>■ Panel mounting flange, polished stainless steel</li> <li>■ Surface mounting lugs on the back, stainless steel</li> </ul>
<b>Case filling (model 233.30)</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Glycerine</li> <li>■ Glycerine-water mixture for NS 100 [4"] and 160 [6"] with scale range ≤ 0 ... 2.5 bar [≤ 0 ... 40 psi] or for NS 63 [2 ½"] with scale range ≤ 0 ... 4 bar [≤ 0 ... 60 psi]</li> <li>■ Silicone oil</li> </ul>
<b>Movement</b>	<ul style="list-style-type: none"> <li>■ Stainless steel</li> <li>■ everlast<sup>®</sup> version</li> </ul>

1) General information about NACE standards; see data sheet IN 00.21

2) Only for instruments with Ex approval

3) Not available for NS 160 [6"]

Measuring element	
<b>Type of measuring element</b>	Bourdon tube, C-type or helical type
<b>Material</b>	Stainless steel 1.4404 (316L)
<b>Leak tightness</b>	<ul style="list-style-type: none"> <li>■ Helium tested, leakage rate: &lt; 5 · 10<sup>-3</sup> mbar l/s</li> <li>■ Helium tested, leakage rate: &lt; 1 · 10<sup>-6</sup> mbar l/s</li> </ul>

Accuracy specifications		
<b>Accuracy class</b>		
NS 63 [2 ½"]	EN 837-1	Class 1.6
	ASME B40.100	±2 % of measuring span (grade A)
NS 100 [4"], 160 [6"]	EN 837-1	Class 1.0
	ASME B40.100	±1 % of measuring span (grade 1A)
<b>Temperature error</b>	On deviation from the reference conditions at the measuring system: ≤ ±0.4 % per 10 °C [≤ ±0.4 % per 18 °F] of full scale value	
<b>Reference conditions</b>		
Ambient temperature	+20 °C [68 °F]	

## Scale ranges

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

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

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

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

psi	
0 ... 10 <sup>1)</sup>	0 ... 1,000
0 ... 15	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 60	0 ... 3,000
0 ... 100	0 ... 4,000
0 ... 160	0 ... 5,000
0 ... 200	0 ... 6,000
0 ... 300	0 ... 7,500
0 ... 400	0 ... 10,000
0 ... 600	0 ... 15,000
0 ... 800	0 ... 20,000 <sup>1)</sup>

1) Not available for NS 63 [2 ½"]

## Vacuum and +/- scale ranges

bar	
-0.6 ... 0 <sup>1)</sup>	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	

MPa	
-0.06 ... 0 <sup>1)</sup>	-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 <sup>1)</sup>	-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

1) Not available for NS 63 [2 ½"]

Further details on: Scale 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>■ 2-fold</li> <li>■ 3-fold</li> <li>■ 4-fold</li> <li>■ 5-fold</li> </ul> <p>The possibility of selection depends on scale 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 colour	Black
Material	Aluminium
Customer-specific version	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ With temperature scale for refrigerant, e.g. for NH3: R 717</li> </ul> <p>Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request</p>
<b>Pointer</b>	
Instrument pointer	Aluminium, black
Mark pointer/drag pointer	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Red mark pointer on dial, fixed</li> <li>■ Red mark pointer on window, adjustable</li> <li>■ Mark pointer on bayonet ring, adjustable</li> <li>■ Red drag pointer on window, adjustable</li> </ul>
<b>Pointer stop pin</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ At zero point (only for NS 63 [2 ½"])</li> <li>■ At 6 o'clock (only for NS 100 [4"], 160 [6"])</li> </ul>


Other scale ranges on request

Process connection	
<b>Standard</b>	<ul style="list-style-type: none"> <li>■ EN 837-1</li> <li>■ ISO 7</li> <li>■ ANSI/B1.20.1</li> </ul>
<b>Size</b>	
EN 837-1	<ul style="list-style-type: none"> <li>■ G 1/8 B, male thread</li> <li>■ G 1/4 B, male thread</li> <li>■ G 1/2 B, male thread</li> <li>■ M12 x 1.5, male thread</li> <li>■ M20 x 1.5, male thread</li> </ul>
ISO 7	<ul style="list-style-type: none"> <li>■ R 1/4, male thread</li> <li>■ R 1/2, male thread</li> </ul>
ANSI/B1.20.1	<ul style="list-style-type: none"> <li>■ 1/4 NPT, male thread</li> <li>■ 1/2 NPT, male thread</li> </ul>
<b>Restrictor</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Ø 0.6 mm [0.024"], stainless steel</li> <li>■ Ø 0.3 mm [0.012"], stainless steel</li> </ul>
<b>Material (wetted)</b>	
Process connection	<ul style="list-style-type: none"> <li>■ NS 100 [4"], 160 [6"]: Stainless steel 1.4404 (316L)</li> <li>■ NS 63 [2 1/2"]: Stainless steel 1.4571 (316 Ti)</li> </ul>
Bourdon tube	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4404 (316L)</li> </ul>

Other process connections on request

Operating conditions		
<b>Medium temperature</b>		
Unfilled instruments	-40 ... +200 °C [-40 ... +392 °F]	
Instruments with glycerine filling	-20 ... +100 °C [-4 ... +212 °F]	
Instruments with silicone oil filling	-40 ... +100 °C [-40 ... +212 °F]	
<b>Ambient temperature</b>		
Unfilled instruments or with silicone oil filling	-40 ... +60 °C [-40 ... +140 °F]	
Instruments with glycerine filling	-20 ... +60 °C [-4 ... +140 °F]	
<b>Pressure limitation</b>		
NS 63 [2 1/2"]	Steady	3/4 x full scale value
	Fluctuating	2/3 x full scale value
	Short time	Full scale value
NS 100 [4"], 160 [6"]	Steady	Full scale value
	Fluctuating	0.9 x full scale value
	Short time	1.3 x full scale value
<b>Ingress protection per IEC/EN 60529</b>	<ul style="list-style-type: none"> <li>■ IP65</li> <li>■ IP66</li> <li>■ IP54 (for lower back mount)</li> </ul>	

## Approvals

Logo	Description	Country
	<b>EU declaration of conformity</b> Pressure equipment directive PS > 200 bar, module A, pressure accessory	European Union
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...) For scale ranges ≤ 1,000 bar	Canada

## Optional approvals

Logo	Description	Country
 	<b>EU declaration of conformity</b> ATEX directive Hazardous areas - Ex h Gas II 2G Ex h IIC T6 ... T1 Gb X Dust II 2D Ex h IIC T85°C ... T450°C Db X	European Union
	<b>EAC</b> Hazardous areas	Eurasian Economic Community
	<b>PAC Russia</b> Metrology, measurement technology	Russia
	<b>PAC Kazakhstan</b> Metrology, measurement technology	Kazakhstan
-	<b>MChS</b> Permission for commissioning	Kazakhstan
	<b>PAC Belarus</b> Metrology, measurement technology	Belarus
-	<b>PAC Ukraine</b> Metrology, measurement technology	Ukraine
	<b>PAC Uzbekistan</b> Metrology, measurement technology	Uzbekistan
-	<b>CPA</b> Metrology, measurement technology	China
	<b>DNV GL</b> Ships, shipbuilding (e.g. offshore)	International

## Manufacturer's information and certificates

Logo	Description
-	Pressure equipment directive (PED) for maximum allowable pressure PS ≤ 200 bar
-	Suitability of wetted materials for drinking water in accordance with the European 4MS initiative
-	Emission protection in accordance with TA-Luft (VDI 2440) <sup>1)</sup>

1) only for EMICOgauge → See page 10

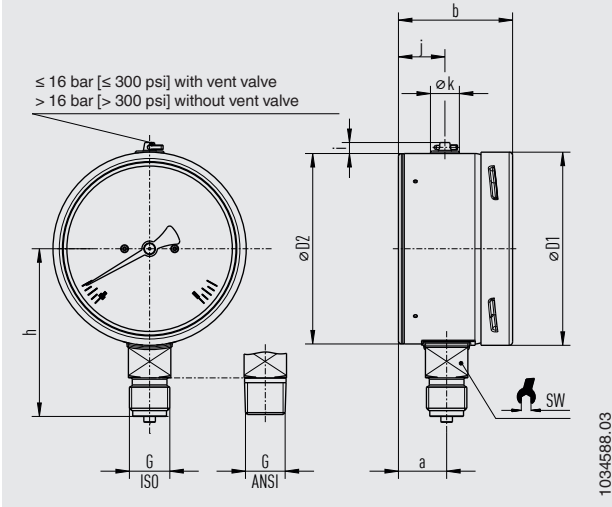
## Certificates (option)

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> <li>■ PCA calibration certificate, traceable and accredited in accordance with ISO/IEC 17025</li> <li>■ Calibration certificate by a national accreditation body, traceable and accredited in accordance with ISO/IEC 17025 on request</li> </ul>
<b>Recommended calibration interval</b>	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

## Dimensions in mm [in]

### Lower mount (radial)



NS	Weight	
	Model 232.30	Model 233.30
63 [2 ½"]	approx. 0.20 kg [0.44 lb]	approx. 0.26 kg [0.57 lb]
100 [4"]	approx. 0.65 kg [1.43 lb]	approx. 1.08 kg [2.38 lb]
160 [6"]	approx. 1.30 kg [2.87 lb]	approx. 2.34 kg [4.94 lb]

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

NS	G	Dimensions in mm [in]								
		h ±1 [0.04]	a	b	D1	D2	i	y	k	SW
63 [2 ½"]	G ¼ B	54 [2.13]	17.5 [0.69]	42 [1.65]	63 [2.48]	62 [2.44]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
	G ⅝ B	51 [2.01]								
	M12 x 1.5	54 [2.13]								
100 [4"]	G ¼ B	87 [3.43]	25 [0.98]	59.5 [2.34]	100 [3.94]	100 [3.94]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	G ½ B	87 [3.43]								
	M12 x 1.5	80 [3.15]								
	M20 x 1.5	87 [3.43]								
160 [6"]	G ¼ B	111 [4.37]	27 [1.06] <sup>1)</sup>	65 [2.56] <sup>2)</sup>	159 [6.26]	159 [6.26]	6 [0.24]	18.5 [0.73]	15 [0.59]	22 [0.87]
	G ½ B	118 [4.65]								
	M12 x 1.5	111 [4.37]								
	M20 x 1.5	118 [4.65]								

### Process connection with thread per ISO 7

NS	G	Dimensions in mm [in]								
		h ±1 [0.04]	a	b	D1	D2	i	y	k	SW
63 [2 ½"]	R ¼	54 [2.13]	17.5 [0.69]	42 [1.65]	63 [2.48]	62 [2.44]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
100 [4"]	R ¼	80 [3.15]	25 [0.98]	59.5 [2.34]	100 [3.94]	100 [3.94]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	R ½	86 [3.39]								
160 [6"]	R ¼	111 [4.37]	27 [1.06] <sup>1)</sup>	65 [2.56] <sup>2)</sup>	159 [6.26]	159 [6.26]	6 [0.24]	18.5 [0.73]	15 [0.59]	22 [0.87]
	R ½	117 [4.61]								

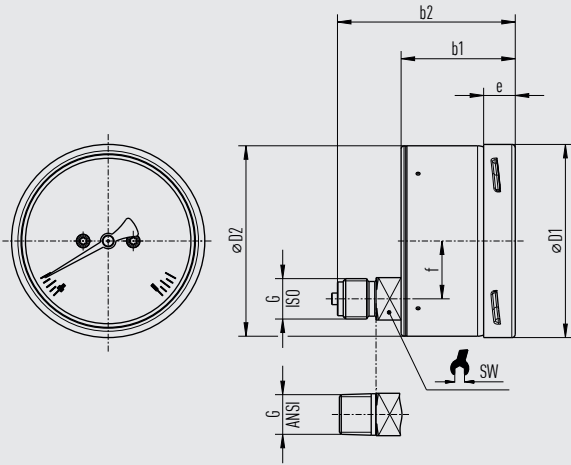
### Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]								
		h ±1 [0.04]	a	b	D1	D2	i	y	k	SW
63 [2 ½"]	¼ NPT	54 [2.13]	17.5 [0.69]	42 [1.65]	63 [2.48]	62 [2.44]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
	⅝ NPT	51 [2.01]								
100 [4"]	¼ NPT	80 [3.15]	25 [0.98]	59.5 [2.34]	100 [3.94]	100 [3.94]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	½ NPT	86 [3.39]								
160 [6"]	¼ NPT	111 [4.37]	27 [1.06] <sup>1)</sup>	65 [2.56] <sup>2)</sup>	159 [6.26]	159 [6.26]	6 [0.24]	18.5 [0.73]	15 [0.59]	22 [0.87]
	½ NPT	117 [4.61]								

1) With scale range ≥ 0 ... 100 bar [1,500 psi] a = 41.5 [1.63]

2) With scale range ≥ 0 ... 100 bar [1,500 psi] b = 79 [3.11]

Model 232.30, lower back mount



1034596.03

NS	Weight
63 [2 1/2"]	approx. 0.20 kg [0.44 lbs]
100 [4"]	approx. 0.65 kg [1.43 lbs]

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

NS	G	Dimensions in mm [in]						
		b1	b2	D1	D2	e	f	SW
63 [2 1/2"]	G 1/4 B	42 [1.65]	61 [2.4]	63 [2.48]	62 [2.44]	14.5 [0.57]	18.5 [0.73]	14 [0.55]
	G 1/8 B							
	M12 x 1.5							
100 [4"]	G 1/4 B	59.5 [2.34]	93 [3.66]	101 [3.98]	100 [3.94]	17 [0.67]	30 [1.18]	22 [0.87]
	G 1/2 B							
	M12 x 1.5							
	M20 x 1.5							

**Process connection with thread per ISO 7**

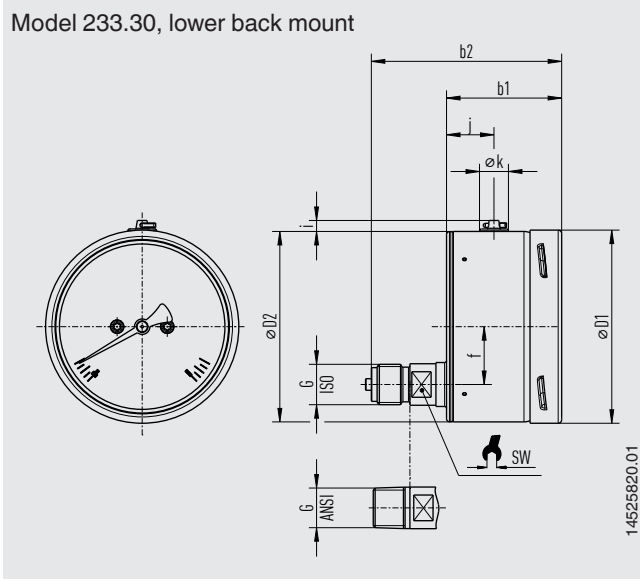
NS	G	Dimensions in mm [in]						
		b1	b2	D1	D2	e	f	SW
63 [2 1/2"]	R 1/4	42 [1.65]	61 [2.4]	63 [2.48]	62 [2.44]	14.5 [0.57]	18.5 [0.73]	14 [0.55]
100 [4"]	R 1/4	59.5 [2.34]	93 [3.66]	101 [3.98]	100 [3.94]	17 [0.67]	30 [1.18]	22 [0.87]
	R 1/2							

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

NS	G	Dimensions in mm [in]						
		b1	b2	D1	D2	e	f	SW
63 [2 1/2"]	1/4 NPT	42 [1.65]	61 [2.4]	63 [2.48]	62 [2.44]	14.5 [0.57]	18.5 [0.73]	14 [0.55]
	1/8 NPT							
100 [4"]	1/4 NPT	59.5 [2.34]	93 [3.66]	101 [3.98]	100 [3.94]	17 [0.67]	30 [1.18]	22 [0.87]
	1/2 NPT							



Model 233.30, lower back mount



NS	Weight
63 [2 1/2"]	approx. 0.28 kg [0.62 lbs]
100 [4"]	approx. 1.08 kg [2.38 lbs]

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

NS	G	Dimensions in mm [in]								
		b1	b2	D1	D2	f	i	y	k	SW
63 [2 1/2"]	G 1/4 B	42 [1.65]	68 [2.68]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
	G 1/8 B									
	M12 x 1.5									
100 [4"]	G 1/4 B	59.5 [2.34]	100 [3.94]	101 [3.98]	100 [3.94]	30 [1.18]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	G 1/2 B									
	M12 x 1.5 M20 x 1.5									

**Process connection with thread per ISO 7**

NS	G	Dimensions in mm [in]								
		b1	b2	D1	D2	f	i	y	k	SW
63 [2 1/2"]	R 1/4	42 [1.65]	68 [2.68]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
100 [4"]	R 1/4	59.5 [2.34]	100 [3.94]	101 [3.98]	100 [3.94]	30 [1.18]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	R 1/2									

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

NS	G	Dimensions in mm [in]								
		b1	b2	D1	D2	f	i	y	k	SW
63 [2 1/2"]	1/4 NPT	42 [1.65]	68 [2.68]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	18 [0.71]	15 [0.59]	14 [0.55]
	1/8 NPT									
100 [4"]	1/4 NPT	59.5 [2.34]	100 [3.94]	101 [3.98]	100 [3.94]	30 [1.18]	6 [0.24]	24 [0.94]	15 [0.59]	22 [0.87]
	1/2 NPT									

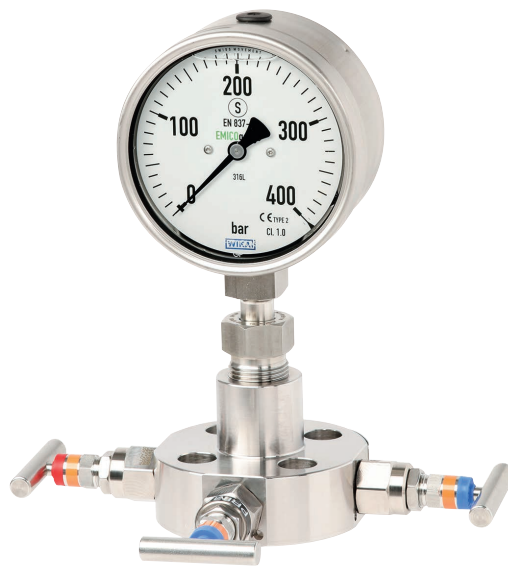
# EMICOgauge

## Instrument hook-up with instrumentation valves

The EMICOgauge instrument hook-up, consisting of pressure gauge and instrumentation valve, minimises the number of leakage points and thus reduces the risk of media escaping into the environment. In order to guarantee the system's leak tightness, an additional leak test is carried out in advance, for each individual component.

During mounting, the 360° swivel adapter connection of the EMICOgauge enables quick alignment of the pressure gauge with simultaneous pressure sealing. With this design, maintenance and dismantling of the pressure gauge and valve are also easy. WIKA can guarantee the leak tightness of the assembly for up to 20 mounting and dismantling operations.

The possible combinations of pressure gauges and the attachable valve models IV1x, IV2x and IVM are very large. Since special pressure connections are often required for specific applications, a large number of variants have been defined for the EMICOgauge in order to avoid adapters, which would otherwise be needed, with their 2 additional sealing points.



**EMICOgauge consisting of model 232.30, NS 100 [4"] and mounted instrumentation valve**

### Advantages

- Significantly reduced risk of fugitive emissions, since the version for "fugitive emissions" complies with TA-Luft (VDI 2440)
- Fully tested and ready-to-install solution of an instrument-valve assembly
- Reduction of leakage paths in pressurised systems
- 360° swivel connection (swivel adapter) enables easy replacement and positioning of pressure gauges
- For various applications in chemical and petrochemical plants such as gas processing and production

### Specifications

#### Basic information for pressure gauges

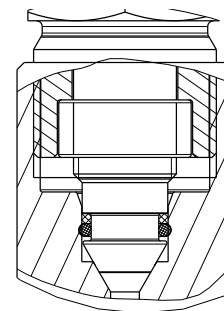
Nominal size (NS)	Ø 100 mm [4"]
Scale range	Between 0 ... 0.6 bar and 0 ... 420 bar As well as corresponding measuring spans for other units and +/- scale ranges
Connection location	Lower mount (radial)

#### Assembly

Mounting type	EMICOgauge connection: 360° swivel connection (swivel adapter) with special pressure sealing Spare part: 5 x sealing set consisting of O-ring and support ring; article no. 14525042
Instrumentation valve	<ul style="list-style-type: none"> <li>■ For instrument version of IVM → See data sheet AC 09.17</li> <li>■ Model IV10, IV11 or IV20 → See data sheets AC 09.22 and AC 09.19</li> </ul>

### Special pressure sealing

The redundant sealing from metal/metal seat and an additional O-ring sealing with support ring ensures the required leak tightness of the measuring assembly in addition to a long service life.



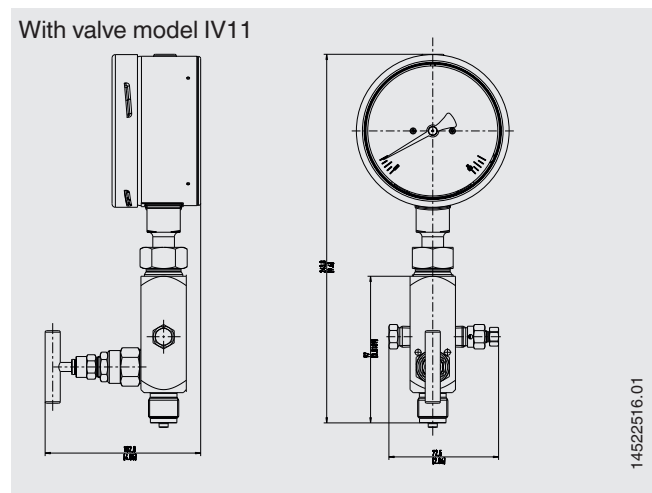
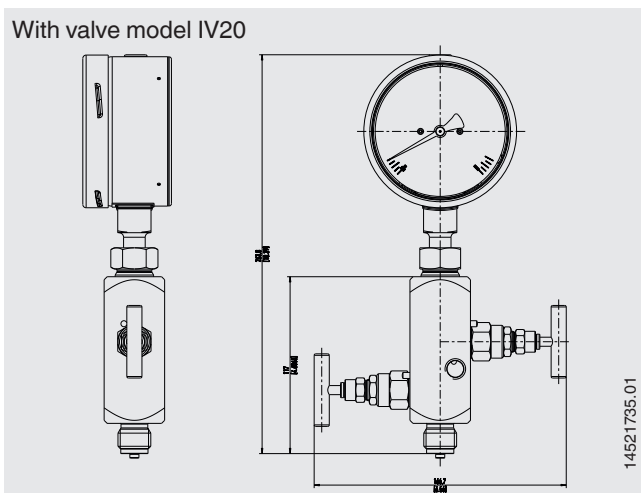
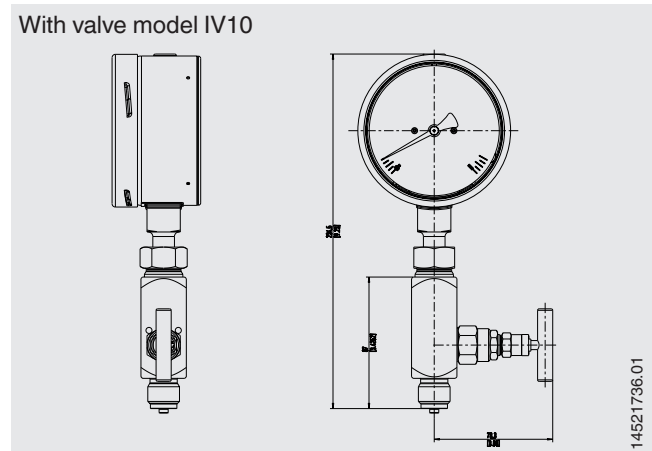
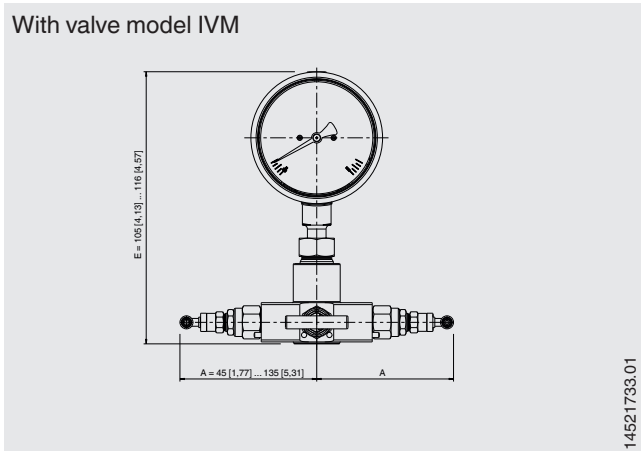
## Process connection

Standard	
Model IVM	<ul style="list-style-type: none"> <li>■ In line with ASME B16.5, RF or RJ</li> <li>■ In line with EN 1092-1, form B1 or B2</li> </ul>
Model IV10, IV11 or IV20	<ul style="list-style-type: none"> <li>■ ANSI/B1.20.1</li> <li>■ EN 837-1</li> </ul>
Size	
In line with ASME B16.5, RF or RJ	Flange ½" ... 2" / class 150 ... class 2500
In line with EN 1092-1, form B1 or B2	Flange DN 15 ... DN 25 / PN 16 ... PN 100
ANSI/B1.20.1	½ NPT, male thread or ½ NPT, female thread
EN 837-1	G ½ B male
Material (wetted)	
Process connection	Stainless steel 1.4404 (316L)
Sealing	O-ring: FKM; backup sealing ring: PEEK





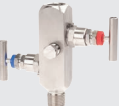



## Operating conditions

Medium temperature	
With unfilled pressure gauge	-20 ... +150 °C [-4 ... +302 °F]
With filled pressure gauge	-20 ... +100 °C [-4 ... +212 °F]
Ambient temperature	
	-20 ... +60 °C [-4 ... +140 °F]
Leak tightness of the overall system	
	Fulfills the fugitive emission requirements per TA Luft (VDI 2440), helium tested, leakage rate: $< 1 \cdot 10^{-4}$ mbar l/s

### Examples of EMICOgauge, model 232.30, NS 100 [4"] and mounted instrumentation valve



## Accessories and spare parts for models 232.30 and 233.30

Model	Description
	<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 multipoint 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
	<b>BV</b> Ball valve, process and instrument version → See data sheet AC 09.28
	<b>IBF2, IBF3</b> Monoblock with flange connection → See data sheet AC 09.25

### Ordering information

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

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