Bourdon tube pressure gauge, copper alloy
Low-lead version
Model PG11LF

Applications

- For gaseous and liquid media that are not highly viscous or crystallising and will not attack copper alloy parts
- Drinking water

Special features

- Design per EN 837-1 or ASME B40.100
- Wetted parts with low-lead content for drinking water
- Low-lead version, in line with upcoming RoHS directive requirements
- Nominal sizes of 40 [1 ½"], 50 [2"] and 63 [2 ½"] available
- Scale ranges to 0 ... 60 bar [0 ... 800 psi]

Fig. left: model PG11LF, back mount
Fig. right: model PG11LF, lower mount (radial)

Description

The model PG11LF pressure gauges are based on the proven Bourdon tube measuring system. The deflection of the Bourdon tube is transmitted to a movement and indicated.

For mounting in control panels, the pressure gauges can, depending on the process connection, be fitted with a surface mounting flange or with a triangular profile ring and mounting bracket.

The model PG11LF was designed for use in all applications requiring copper alloy materials with low-lead content. It is in line with upcoming EU regulations regarding the Drinking Water Directive (DWD) and the Restriction of Hazardous Substances Directive (RoHS).

All materials used in the wetted parts are listed on the European positive list of individual metallic compositions for metallic materials, as detailed in Commission Implementing Decision (EU) 2024/367.

Specifications

Basic information	
Standard	■ EN 837-1 ■ ASME B40.100 → For information on the “Selection, installation, handling and operation of pressure gauges”, see technical information IN 00.05.
Nominal size (NS)	■ Ø 40 mm [1 ½"] ■ Ø 50 mm [2"] ■ Ø 63 mm [2 ½"]
Connection location	■ Lower mount (radial) ■ Centre back mount
Window	Plastic, crystal-clear, snap-fitted in case
Case	
Design	■ Without safety level ■ Safety level “S1” per EN 837-1: with blow-out device
Material	■ Plastic, black ■ Steel, black
Mounting	■ Without ■ Panel mounting flange ■ Surface mounting flange [1]
Movement	■ Copper alloy ■ Copper alloy with low-lead content [2]

1) Only available for NS 63 [2 ½"].
2) In line with upcoming RoHS directive requirements

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Material	Copper alloy [1]
Leak tightness	Leakage rate: $< 5 \cdot 10^{-3}$ mbar l/s

1) The used copper alloy contains less than 0.1 % lead by weight.

Accuracy specifications	
Accuracy class	
EN 837-1	■ Class 1.6 ■ Class 2.5
ASME B40.100	Grade B
Temperature error	On deviation from the reference conditions at the measuring system: ≤ ±0.4 % per 10 °C [≤ ±0.4 % per 18 °F] of full scale value
Reference conditions	
Ambient temperature	+20 °C [68 °F]

Scale ranges

bar	
0 ... 0.6	0 ... 10
0 ... 1	0 ... 16
0 ... 1.6	0 ... 20
0 ... 2.5	0 ... 25
0 ... 4	0 ... 40
0 ... 6	0 ... 60

kg/cm²	
0 ... 0.6	0 ... 10
0 ... 1	0 ... 16
0 ... 1.6	0 ... 20
0 ... 2.5	0 ... 25
0 ... 4	0 ... 40
0 ... 6	0 ... 60

kPa	
0 ... 60	0 ... 1,000
0 ... 100	0 ... 1,600
0 ... 160	0 ... 2,000
0 ... 250	0 ... 2,500
0 ... 400	0 ... 4,000
0 ... 600	0 ... 6,000

MPa	
0 ... 0.06	0 ... 1
0 ... 0.1	0 ... 1.6
0 ... 0.16	0 ... 2.0
0 ... 0.25	0 ... 2.5
0 ... 0.4	0 ... 4
0 ... 0.6	0 ... 6

psi	
0 ... 10	0 ... 200
0 ... 15	0 ... 300
0 ... 30	0 ... 400
0 ... 60	0 ... 500
0 ... 100	0 ... 600
0 ... 150	0 ... 800
0 ... 160	-

Vacuum and compound 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

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

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

psi	
-15 inHg ... 0	-30 inHg ... +100
-30 inHg ... 0	-30 inHg ... +160
-30 inHg ... +15	-30 inHg ... +200
-30 inHg ... +30	-30 inHg ... +300
-30 inHg ... +60	-30 inHg ... +400

→ Other scale ranges on request

Further details on: scale ranges	
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Increased overload safety	■ Without ■ 1.6 times ■ 2 times
	The possibility of selection depends on scale range and nominal size
Vacuum resistance	■ Without ■ Vacuum-resistant to -1 bar
Dial	
Scale colour	Black
Material	Plastic, white
Customer-specific version	Other scales, e.g. with red mark, circular arcs or circular sectors, on request
	→ Alternatively, adhesive label set for red and green circular arcs; see data sheet AC 08.03
Pointer	
Instrument pointer	Plastic, black
Mark pointer / drag pointer	■ Without ■ Red mark pointer on dial, fixed ■ Red mark pointer on window, adjustable
Pointer stop pin	■ Without ■ At zero point

Process connection	
Standard	■ EN 837-1 ■ ISO 7 ■ ANSI/B1.20.1
Size	
EN 837-1	■ G ⅛ B, male thread ■ G ¼ B, male thread
ANSI/B1.20.1	■ ⅛ NPT, male thread ■ ¼ NPT, male thread
ISO 7	■ R ⅛, male thread ■ R ¼, male thread
Restrictor	■ Without ■ Ø 0.3 mm [0.012"], copper alloy [1]
Material (wetted)	
Process connection	Copper alloy [1]
Bourdon tube	Copper alloy [1]

1) The used copper alloy contains less than 0.1 % lead by weight.

→ 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	
Lower mount (radial)	IP33
Centre back mount	IP41 [1]

1) Ingress protection IP44 for steel case

Approvals

Logo	Description	Country
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's declaration

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

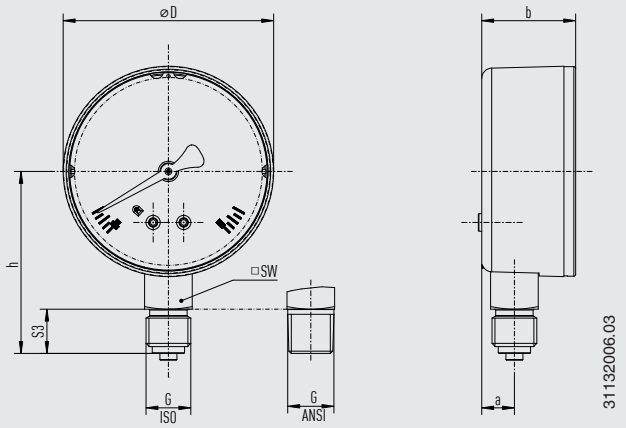
Certificates

Description	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy, material proof of wetted parts) ■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm [in]

Model PG11LF, lower mount (radial), plastic case

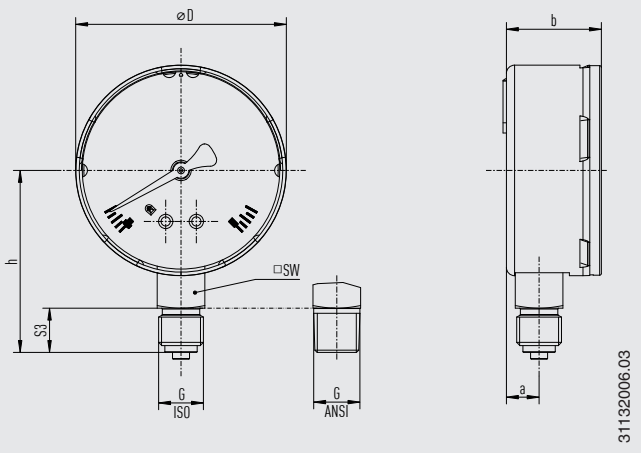


NS	G [1]	Dimensions in mm [in]					
		h ±1 [0.04]	S3	a	b ±0.5 [0.02]	D	SW
40 [1 ½"]	G ⅛ B, ⅛ NPT, R ⅛	36 [1.42]	10 [0.39]	9.5 [0.37]	26.5 [14]	39 [1.54]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	39 [1.54]	13 [0.51]	9.5 [0.37]	26.5 [14]	39 [1.54]	14 [0.55]
50 [2"]	G ⅛ B, ⅛ NPT, R ⅛	42 [1.65]	10 [0.39]	10 [0.39]	27.5 [18]	49 [1.93]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	45 [1.77]	13 [0.51]	10 [0.39]	27.5 [18]	49 [1.93]	14 [0.55]
63 [2 ½"]	G ⅛ B, ⅛ NPT, R ⅛	50,5 [1.99]	10 [0.39]	9.5 [0.37]	27.5 [18]	62 [2.44]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	53.5 [2.11]	13 [0.51]	9.5 [0.37]	27.5 [18]	62 [2.44]	14 [0.55]

1) The G ⅛ B process connection of this instrument is manufactured without a centring spigot and with a thread runout instead of a thread undercut.

NS	Weight in kg [lb]
40 [1 ½"]	0.08 [0.18]
50 [2"]	0.10 [0.22]
63 [2 ½"]	0.13 [0.29]

Model PG11LF, lower mount (radial), steel case

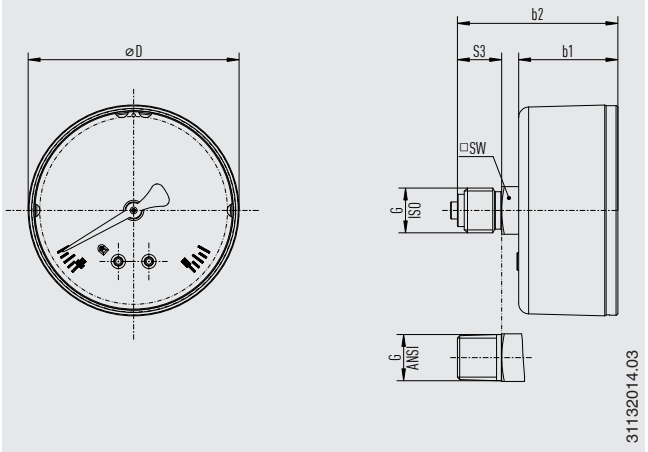


NS	G [1]	Dimensions in mm [in]					
		h ±1 [0.04]	S3	a	b ±0.5 [0.02]	D	SW
40 [1 ½"]	G ⅛ B, ⅛ NPT, R ⅛	36 [1.42]	10 [0.39]	9.5 [0.37]	26 [1.02]	39 [1.54]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	39 [1.54]	13 [0.51]	9.5 [0.37]	26 [1.02]	39 [1.54]	14 [0.55]
50 [2"]	G ⅛ B, ⅛ NPT, R ⅛	42 [1.65]	10 [0.39]	9.5 [0.37]	28 [1.10]	49 [1.93]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	45 [1.77]	13 [0.51]	9.5 [0.37]	28 [1.10]	49 [1.93]	14 [0.55]
63 [2 ½"]	G ⅛ B, ⅛ NPT, R ⅛	50.5 [1.99]	10 [0.39]	9.5 [0.37]	28 [1.10]	61.9 [2.44]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	53.5 [2.11]	13 [0.51]	9.5 [0.37]	28 [1.10]	61.9 [2.44]	14 [0.55]

1) The G ⅛ B process connection of this instrument is manufactured without a centring spigot and with a thread runout instead of a thread undercut.

NS	Weight in kg [lb]
40 [1 ½"]	0.09 [0.2]
50 [2"]	0.11 [0.24]
63 [2 ½"]	0.15 [0.33]

Model PG11LF, centre back mount, plastic case

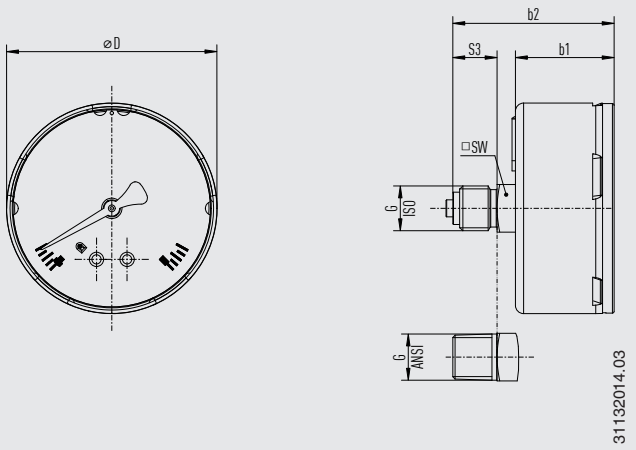


NS	G [1]	Dimensions in mm [in]				
		b1 ±0.5 [0.02]	b2 ±1 [0.04]	S3	D	SW
40 [1 ½"]	G ⅛ B, ⅛ NPT, R ⅛	26.5 [1.04]	42 [1.65]	10 [0.39]	39 [1.53]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	26.5 [1.04]	45 [1.77]	13 [0.51]	39 [1.53]	14 [0.55]
50 [2"]	G ⅛ B, ⅛ NPT, R ⅛	29.5 [1.87]	44.5 [1.75]	10 [0.39]	49 [1.93]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29.5 [1.87]	47.5 [1.87]	13 [0.51]	49 [1.93]	14 [0.55]
63 [2 ½"]	G ⅛ B, ⅛ NPT, R ⅛	29 [1.15]	44 [1.73]	10 [0.39]	62 [2.44]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29 [1.15]	47 [1.85]	13 [0.51]	62 [2.44]	14 [0.55]

1) The G ⅛ B process connection of this instrument is manufactured without a centring spigot and with a thread runout instead of a thread undercut.

NS	Weight in kg [lb]
40 [1 ½"]	0.06 [0.13]
50 [2"]	0.07 [0.15]
63 [2 ½"]	0.08 [0.18]

Model PG11LF, centre back mount, steel case



NS	G [1)]	Dimensions in mm [in]				
		b1 ±0.5 [0.02]	b2 ±1 [0.04]	S3	D	SW
40 [1 ½"]	G ⅛ B, ⅛ NPT, R ⅛	26 [1.02]	41,5 [1.63]	10 [0.39]	39 [1.53]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	26 [1.02]	45 [1.77]	13 [0.51]	39 [1.53]	14 [0.55]
50 [2"]	G ⅛ B, ⅛ NPT, R ⅛	27.5 [1.10]	43 [1.69]	10 [0.39]	49 [1.93]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	27.5 [1.10]	46 [1.81]	13 [0.51]	49 [1.93]	14 [0.55]
63 [2 ½"]	G ⅛ B, ⅛ NPT, R ⅛	29 [1.14]	44.5 [1.75]	10 [0.39]	62 [2.44]	14 [0.55]
	G ¼ B, ¼ NPT, R ¼	29 [1.14]	47.5 [1.87]	13 [0.51]	62 [2.44]	14 [0.55]

1) The G ⅛ B process connection of this instrument is manufactured without a centring spigot and with a thread runout instead of a thread undercut.

NS	Weight in kg [lb]
40 [1 ½"]	0.07 [0.15]
50 [2"]	0.1 [0.22]
63 [2 ½"]	0.15 [0.33]

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
	**IV1**	Needle valve and multiport needle valve → See data sheet AC 09.22
	**IV2**	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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