Bourdon tube pressure gauge, copper alloy
Miniature design, NS 27 [1"]
Model 111.12.027

For further approvals, see page 4

Applications

- For gaseous and liquid media that are not highly viscous or crystallising and will not attack wetted materials
- Indication of cylinder charging pressure
- Respiratory protective equipment, sports weapons, welding engineering (compact equipment)
- Medical equipment

Special features

- Small and compact
- Ideal for integration solutions
- Scale range from 0 ... 4 bar to 0... 400 bar
- Nominal size of 27 mm [1"]
- One-piece case and process connection from copper alloy

Fig. left: model 111.12.027, low-pressure version, case copper alloy, nickel-plated
Fig. right: model 111.12.027, high-pressure version, case copper alloy, natural finish

Description

The miniature design of this pressure gauge is cost-effective and specifically aimed for integration solutions. This instrument is based on a reliable Bourdon tube measuring system. The brass measuring system guarantees low temperature influence and high measuring stability. The model 111.12.027 is available in a low-pressure version with scale ranges from 0 ... 4 to 0 ... 25 bar and in a high-pressure version from 0 ... 100 to 0 ... 400 bar.

The one-piece case and process connection makes the instrument resistant to mechanical damage. This proven design is ideal for applications with compact equipment requiring built-in small pressure gauges.

Data sheets showing similar products:
Miniature design, OEM version; model 101.12; see data sheet PM 01.27

Specifications

Basic information	
Standard	Per EN 837-1, where applicable → For information on the “Selection, installation, handling and operation of pressure gauges”, see technical information IN 00.05.
Version	
Low-pressure	Scale range from 0 ... 4 bar to 0... 25 bar
High-pressure	Scale range from 0 ...100 bar to 0... 400 bar
Nominal size (NS)	Ø 27 mm [1“]
Connection location	Centre back mount
Window	Plastic, crystal-clear, snap-fitted in case
Case	■ Copper alloy ■ Copper alloy, nickel-plated
Mounting	Customisable on request
Movement	Copper alloy

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

Accuracy specifications	
Accuracy class	4.0
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, low-pressure version

bar	
0 ... 4	0 ... 12
0 ... 6	0 ... 16
0 ... 10	0 ... 25

kg/cm²	
0 ... 4	0 ... 12
0 ... 6	0 ... 16
0 ... 10	0 ... 25

kPa	
0 ... 400	0 ... 1,200
0 ... 600	0 ... 1,600
0 ... 1,000	0 ... 2,500

MPa	
0 ... 0.4	0 ... 1.2
0 ... 0.6	0 ... 1.6
0 ... 1	0 ... 2.5

psi	
0 ... 60	0 ... 160
0 ... 100	0 ... 250
0 ... 150	-

Scale ranges, high-pressure version

bar	
0 ... 100	0 ... 250
0 ... 160	0 ... 315
0 ... 200	0 ... 400

kg/cm²	
0 ... 100	0 ... 250
0 ... 160	0 ... 315
0 ... 200	0 ... 400

psi	
0 ... 1,500	0 ... 6,000

MPa	
0 ... 10	0 ... 25
0 ... 16	0 ... 40
0 ... 20	-

Further details on: scale ranges	
Special scale ranges	→ Other scale ranges on request
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Dial	
Scale colour	Black
Material	Plastic
Special scale	→ Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request
Instrument pointer	Plastic, black
Pointer stop pin	At zero point

Process connection		
Standard	■ EN 837-1 ■ ISO 7 ■ ANSI/B1.20.1	
Size		
EN 837-1	G ⅛ B, male thread	
ANSI/B1.20.1	⅛ NPT, male thread	
ISO 7	R ⅛, male thread	
Restrictor	■ Without ■ Ø 0.3 mm [0.012"], brass	
Material (wetted)		
Bourdon tube	Copper alloy	
Process connection	Low-pressure version	Copper alloy with internal polyamide (PA) adapter
	High-pressure version	Copper alloy

→ Other process connections on request

Operating conditions	
Medium temperature	Max. +60 °C [+140 °F]
Ambient temperature	0 ... 60 °C [32 ... 140 °F]
Pressure limitation	
Steady	¾ x full scale value
Fluctuating	⅔ x full scale value
Short time	Full scale value
Ingress protection per IEC/EN 60529	IP41

Approvals

Logo	Description	Region
CE	**EU declaration of conformity** Pressure equipment directive PS > 200 bar, module A, pressure accessory	European Union

Optional approvals

Logo	Description	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**PAC Ukraine** Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

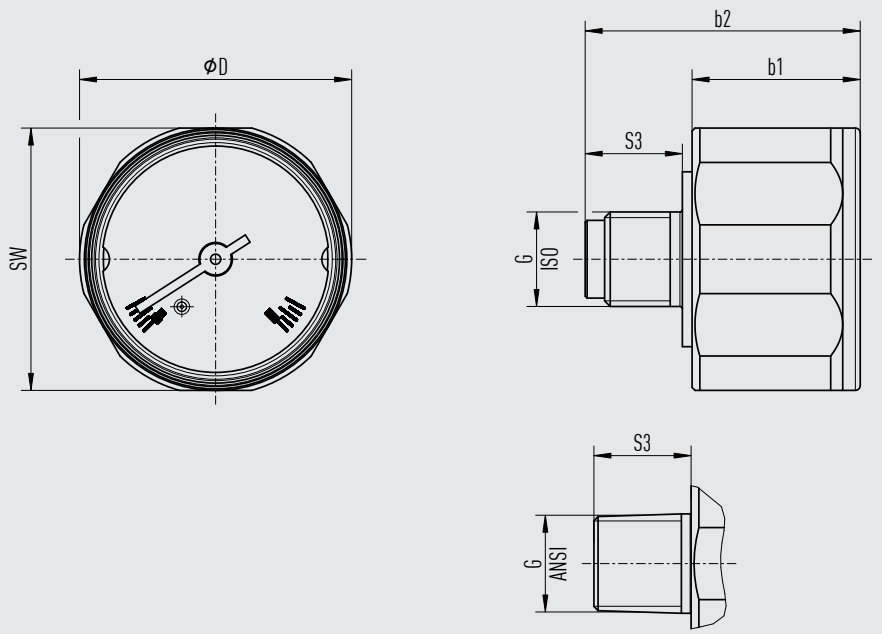
Certificates

Certificates	
Certificates	2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm [in]

Model 111.12.027



Weight: approx. 33 g [1.16 oz]

Version	G	Dimensions in mm [in]				
		D	b1 ±0.5 [0.02]	b2 ±1 [0.04]	S3	SW
Low pressure	G ⅛ B	28 [1.1]	18.5 [0.73]	30.5 [1.2]	10 [0.39]	27 [1.06]
	⅛ NPT	28 [1.1]	18.5 [0.73]	28.5 [1.12]	10 [0.39]	27 [1.06]
	R ⅛	28 [1.1]	18.5 [0.73]	28.5 [1.12]	10 [0.39]	27 [1.06]
High pressure	G ⅛ B	28 [1.1]	17.5 [0.69]	28.5 [1.12]	10 [0.39]	27 [1.06]
	⅛ NPT	28 [1.1]	17.5 [0.69]	28.5 [1.12]	10 [0.39]	27 [1.06]
	R ⅛	28 [1.1]	17.5 [0.69]	28.5 [1.12]	10 [0.39]	27 [1.06]

Ordering information

Model / Scale range / Process connection / Options

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