All stainless steel safety pressure gauges according to EN 837-1/S3 with or without glycerine filling
New: as multifunctional pressure instrument

Nominal sizes ND 100

Connection position bottom

Description

The all stainless steel pressure gauges are ideal for the hard conditions and the resulting high demands on pressure measurement in production facilities in chemical industry and other comparable branches. Resistance to aggressive media and environments is achieved by using high-grade materials such as stainless steel both for the measuring system and the case.

The glycerine filling provides wear-protection for the measuring system through damping, should pulsating pressures and mechanical vibrations occur. The measuring system is of accuracy class 1.0, has overrange protection amounting to 1.3 times the max. rating and can be loaded up to the full scale value.

The safety execution of the pressure gauges comprises a burstproof solid front between dial and Bourdon tube, a laminated safety glass as well as a blow-out back (according to EN 837-1/S3).

Pressure gauges with glycerine filling are equipped with a compensation diaphragm. This diaphragm avoids a pressure rise in the case that is due to temperature bound volume expansion of the liquid filling, thus avoiding indicated errors.

If an output signal is expected by the measuring point, **„the multi-functional instrument“ P2114 ND 100** can be used.
It connects the pressure measurement without auxiliary energy with the possibility of a sensor signal for the remote transmission of the upcoming pressure values.
This instrument is particularly suitable for pressure control rather regulation.

Features

- Measuring system of high corrosion resistant materials, stainless steel or Monel 400
- Resistant to chemicals
- Accuracy class 1.0
- Fulfills highest safety requirements to EN 837-1/S3
- Solid front between measuring system and dial
- Vibration-free display and long service life through glycerine filling

Measuring ranges

0 ... 0,6 bar to 0 ... 1000 bar
(higher measuring ranges see P1701)

Applications

Processing technology,

Machine and apparatus construction,

Compressors

Models: P2112, P2113, P2114, P2143, P2153

Technical data

Models	P2112	P2113	P2143	P2153	P2114	Option
Nominal size	100					
Symbol						
Contact type	without		Inductive		Multifunctional	
Number of contacts *)	without		1 to 3 depending on measuring range			
Accuracy	1.0 acc. to EN 837-1					
Ranges	0 ... 0.6 bar to 0 ... 1000 bar negative or positive / negative and positive gauge pressure					
Application	Constant load: up to full scale value Alternating load: up to 0,9 x full scale value short-time: overload capacity 1.3					(model: P2112 + P2113 1.5 to 2 x)
Case	Stainless steel, 1.4301 with blow-out back, solid front Scale ranges ≤ 0 … 16 bar, with compensating valve to vent case					Rear mounting bracket, stainless steel
Bezel	Stainless steel, 1.4301 bayonet ring					Front flange, VA or VA polished
window	Laminated safety glass					Polycarbonat (safety glass)
Dial	Al. white, scale and imprint black					Dual scale
Pointer	Al. black				Aluminium, black, adjustable	
Movement	Stainless steel				Brass	
Measuring element	Stainless steel, 316 L					Measuring element: Monel
	Bourdon tube up to 60 bar , helical tube above 100 bar					Stainless steel, 1.4571
Connection - position - thread	Stainless steel 316 L Radial bottom G 1/2 B					Other threads on request
Temperature - Medium - Ambient	Tmin. -20°C…Tmax. 200°C - for unfilled instruments Tmin. -20°C…Tmax. 100°C - for filled instruments Tmin. -40°C…Tmax. 60°C - for unfilled instruments Tmin. -20°C…Tmax. 60°C - for filled instruments					
Temperature drift	0,4%/10K if deviation from normal temperature 20°C					
Liquid filling	without	Glycerin	without	Polybuten	without	Silicone M50
Protection acc. to EN 60 529 / IEC 529	IP 65		IP 54	IP 65	IP 65	
Throttle	without					ø 0,4 ; ø 0,5; ø 0,8
CE-confirmy	Construction acc. to ATEX Ex II 2 GD c		ATEX: 94/4			*Model P2114*: acc. to ATEX Ex ia IIC T4/T5/T6 rather Ex I M2 Ex ia I
Pressure Equipment Directive	97/23/EG					
Weight approx.	0.660 kg				0.80 kg	

1) fsv = full scale value

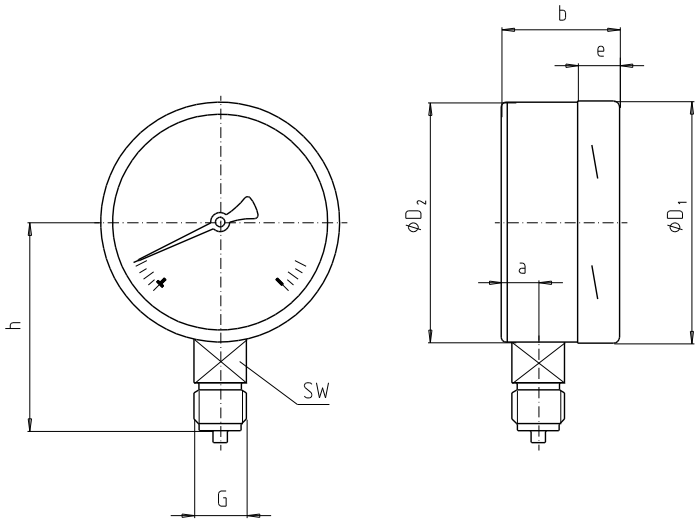
*) Number of contacts

Measuring range	Magnetic snap-action contact	Inductive contact
to 1 bar	1	1
1.6 bar	2	3
above 4 bar	4	3

Technical data

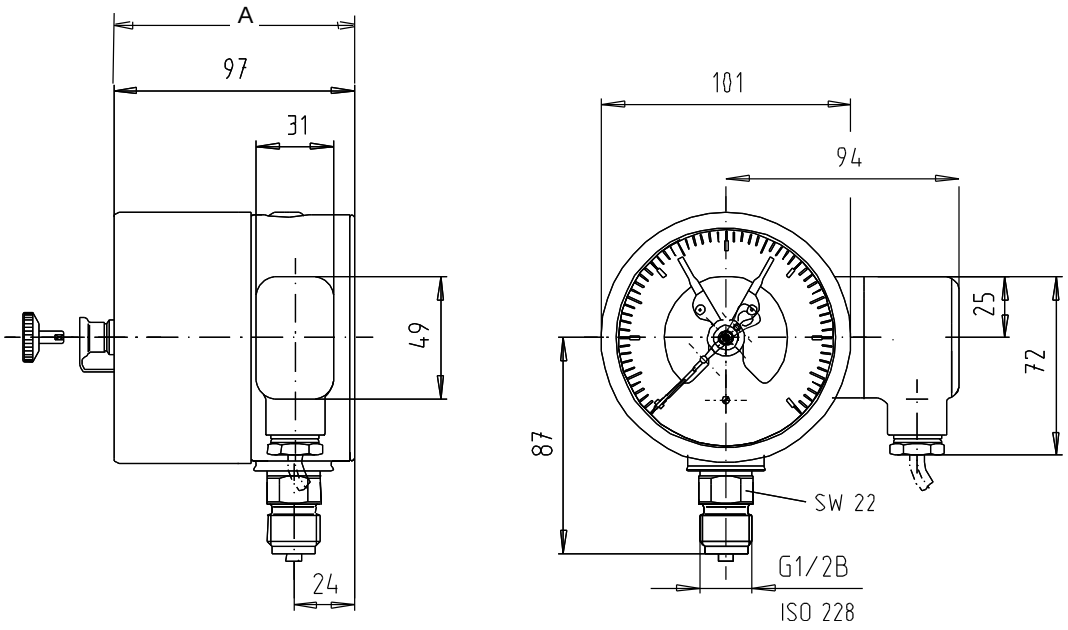
Models	P2112	P2113	P2143	P2153	P2114	Option
Nominal size	100					
Symbol						
Elektrical Connection	-----		Cable connector right hand side; 6 screw terminals + PE, cross section of the conducting wire 2.5 mm² Screw type conduit fitting M20x1.5, outgoing downwards		L-plug connector, 180 °C rotatable, max. 1.5 mm², wire protector, cable gland M20 x 1.5, external cable diameter 7-13 mm, incl. strain relief	
Power supply UB – Supply voltage effect – Permissible residual ripple	-----		-----		12 < UB ≤ 30 ≤ 0,1 % fsv/10 V ≤ 10 % ss	
Output signal	-----		-----		4 … 20 mA, 2-wire	0…20 mA, 0…10 V, 4…20 mA passiv, acc. to NAMUR NE 43
Permissible max. load RA	-----		-----		RA ≤ (UB - 12 V)/0.02 A with RA in Ohm and UB in Volt, however max. 600 Ω	
Effect of load	-----		-----		≤ 0,1 % fsv	
Electrical zero point	-----		-----		through a jumper across terminals 5 and 6 (see operating instructions)	
- Long-term stability of electronics	-----		-----		< 0,3 % fsv / a	
- Electrical output signal	-----		-----		≤ 1 % of measuring span	
Linearity	-----		-----		≤ 1,0 % of span (limit point calibration)	
Conformity specifications	-----		-----		Ex - Variant	
Power supply	-----		-----		14 … 30 DC V	
Short circuit rating	-----		-----		100 mA	
Rating	-----		-----		1000 mW	
internal capacitance	-----		-----		Ci ≤ 12 nF	
internal inductance	-----		-----		mH - negligible	
EMC- directive	-----		-----		2004/108/EG EC Interference emission (Limit Class B) and immunity to EN 61 326-1	

Dimensions

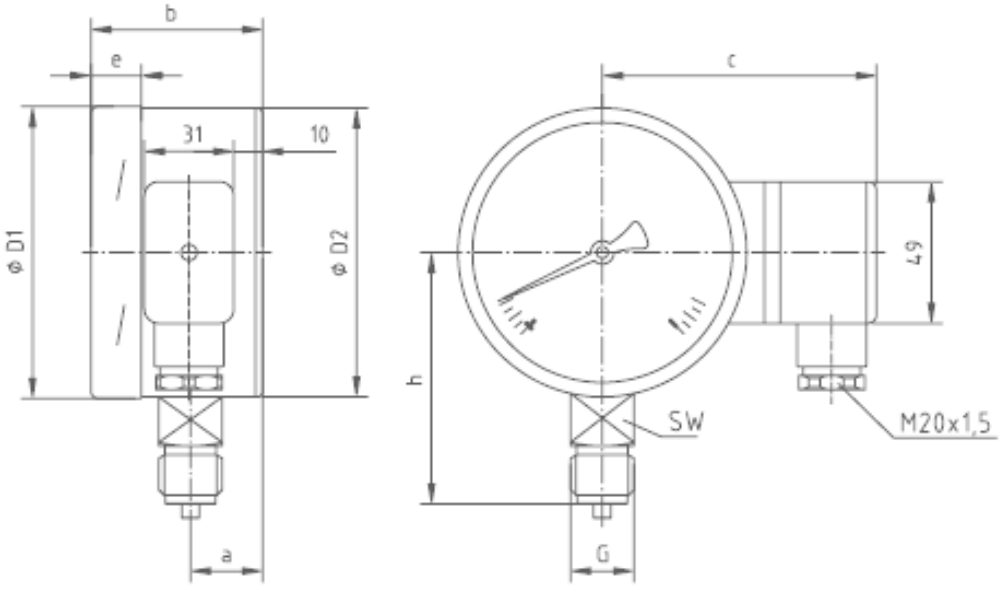


Models	Dimensions in mm							
	A	b	D1	D2	e	G	h ±1	SW
P2112, P2113	24	57.5	101	100	17.5	G1/2 B	87	22

Dimensions



Model	P2143	P2153
Dimension "A"	104 mm	108 mm



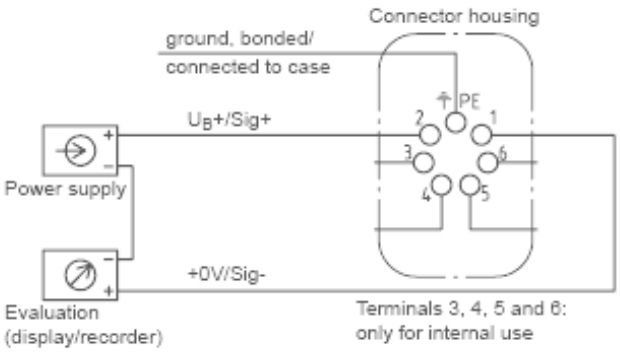
Model	Dimension in mm									weight in kg
	a	b	c	D1	D2	e	G	h ±1	SW	
P2114	25	59.5	94	101	100	17	G1/2 B	87	22	0.80

Terminal assignment

Terminals 1 and 2 are the terminals for the signal output and for the power supply. The terminal marked with PE (protective earth) is connected internally to the housing. The connections 3 to 6 or 4 to 6 (for the 3-wire version), must remain free and must not be used as connection points (also see Chapter 10 "Technical data").

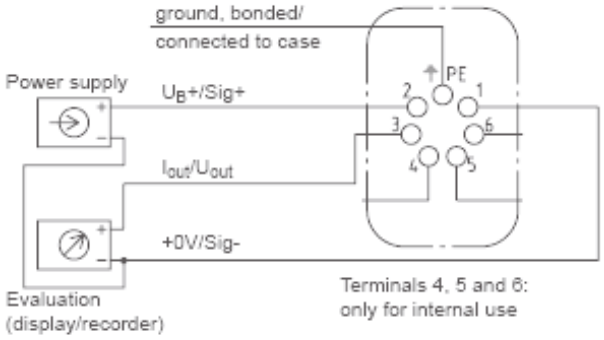
2-wire-design

i.e. 4 ... 20 mA



3-wire-design

i.e. 0 ... 20 mA / 0 ... 10 V



An unstabilised DC voltage, with a residual ripple of max. 10 % peak-to-peak in the range of the indicated supply voltage limits, is sufficient as a power supply. Make sure that the supply voltage applied exceeds the maximum required voltage by at least the value of the voltage drop across the external display or evaluation devices; i.e. the transmitter can operate using a non-stabilised supply voltage within the given limits, so long as the voltage available to the transmitter does not fall below 12 V, or below 14 V for the Ex-version.

Modifications reserved