Electrical contact type pressure gauge with nickel plated zinc case
Model: P542, P543 series

Spec. sheet no. PD05-07

Service intended
P542 and P543 series are designed for a local reading of measured pressure and equipped with the electrical contact block which allows all the combinations of contacts to be used. The contact block is mounted on the dial. The window is fitted with a knob for external adjustment of the set points. These are also designed to direct the leakage of insulating oil inside the electric cable.

Nominal diameter
100 and 150 mm

Accuracy
±1.0 % of full scale

Scale range (MPa, kPa, bar)
-0.1 ~ 0.6 MPa to -0.1 ~ 1 MPa
-0.1 ~ 0.3 MPa

Working pressure
Steady : 75 % of full scale value
Over range protection : 130% of full scale

Working temperature
Ambient : -40 ~ 65 °C
Fluid : Max. 100 °C

Degree of protection
EN60529/IEC529/IP67

Temperature effect
Accuracy at temperature above and below the reference temperature (20 ℃) will be effected by approximately ±0.4 % per 10 ℃ of full scale

Standard features

Pressure connection
Stainless steel (316SS)
Threaded entry, radial

Element
Stainless steel (316SS)
C type bourdon tube

Case
Nickel plated zinc for 100 mm (P542)
Triple setpoint only 316SS 100 and 150 mm (P543)

Cover
Nickel plated zinc for 100 mm
Triple setpoint only 316SS 150 mm (P543)

Window
Safety glass

Movement
Stainless steel

Dial
White aluminium with black graduations

Pointer
BsT3 alloy, black painted pointer with gold plated

Contact
Contact : Dual set point or triple set point
Contact rating : AC 110 V, 0.5 A/AC 220 V, 0.25 A
Dielectric strength : AC 2,000 V/min insulation
Insulation resistance : More than 100 MΩ at DC 500 V

Process connection
⅜" PF

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Main order — Ordering information

1. Base model

P542	Electrical contact type pressure gauge (Dual contact)
P543	Electrical contact type pressure gauge (Triple contact)

2. Nominal diameter (mm)

4	100
6	150

3. Type of mounting

B	Bottom entry and surface mounting flange

4. Accuracy

3	±1.0 % of full scale

5. Process connection

D	⅜"

6. Connection type

B	PF

7. Unit

H	bar
I	MPa
J	kPa

8. Range

029	-0.1 ~ 0.3 MPa (-1 ~ 3 bar)
031	-0.1 ~ 0.6 MPa (-1 - 6 bar)
032	-0.1 ~ 1 MPa (-1 ~ 10 bar)

9. Dial color

6	3 colors

10. Option

0	None
1	Accessories

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Sample ordering code

1	2	3	4	5	6	7	8	9	10
P542	**6**	**B**	**3**	**D**	**B**	**H**	**029**	**6**	**0**

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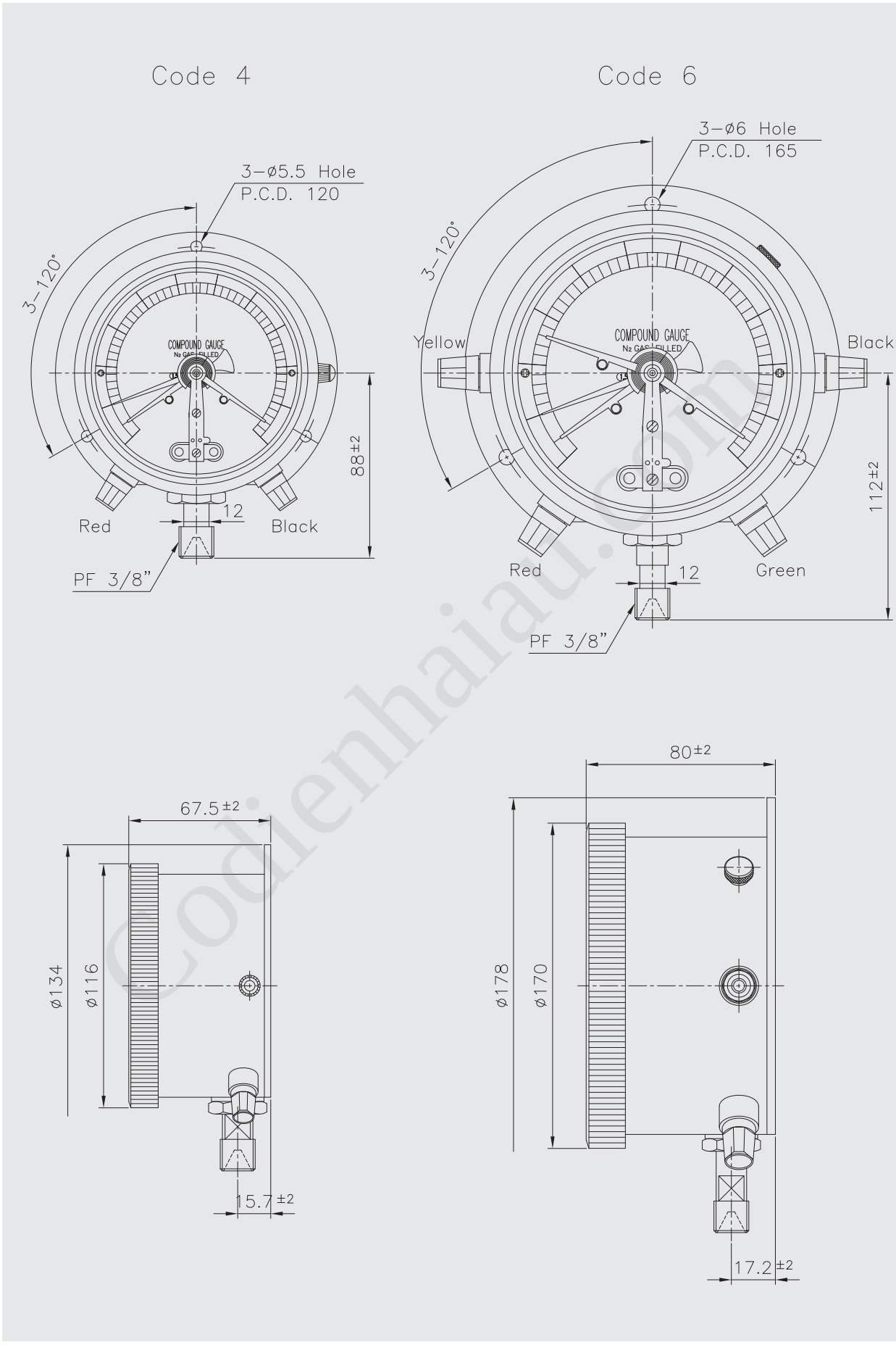
P542 : Type of mounting



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Snap - action contacts

General

Electromechanical limit switches in pointer type measuring instruments are auxiliary current switches which open or close electrical circuits at set limit values by means of a contact arm which is moved by the actual value pointer.
The snap action contact is a mechanical contact for switching capacities up to 30 W 50 VA max.
Contact making will be delayed and or advanced in relation to the movement of the actual value pointer.
To closed the circuit, the contact pin of the movable contact arm is attracted in a jump by the permanent magnet fastened to the supporting arm shortly before the set value has been reached.
Due to the retention force of the magnet, snap action contacts are more resistant against shock and vibration.
The switching safety is increased by the increased contact pressure.
When the citcuit is opened, the magnet keeps the contact arm in its place until the restoring force of the measuring element exceeds the magnetic force, and the contact opens in a jump.

Specifications

Maximum contact rating with non-inductive (ohmic) load		**Electrical contacts type pressure gauge model P540 series**	
		Dry gauges	**Liquid filled gauges**
Maximum voltage		250 V	250 V
Current ratings	**Make ratings**	1.0 A	1.0 A
	Break ratings	1.0 A	1.0 A
	Continuos load	0.6 A	0.6 A
Maximum load		30 W 50 VA	20 W 20 VA
Material of contact points		Silver-Nickel alloy (80% Ag / 20%Ni / 10㎛) gold-plated	
Ambient operating temperature		-20 °C...+70 °C	
Max. no. of contacts		2	
Voltage test		Circuit / protective earth conductor - 2,000 vac 1 minute	
		Circuit /circuit - 2,000 vac 1 minute	

Recommended contact ratings with ohmic and inductive load

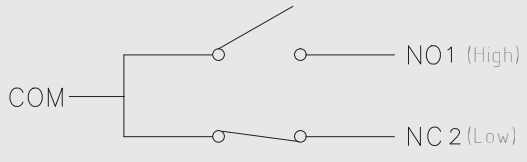
Voltage (DIN IEC 38) DC / AC	**Electrical contacts type pressure gauge model P540 series**					
	Dry gauges			**Liquid filled gauges**		
	Ohmic load		Inductive load	Ohmic load		Inductive load
	DC	AC		DC	AC	
			cosØ > 0.7			cosØ > 0.7
V	mA	mA	mA	mA	mA	mA
220 / 230	100	120	65	65	90	40
110 / 110	200	240	130	130	180	85
48 / 48	300	450	200	190	330	130
24 / 24	400	600	250	250	450	150

In order to ensure a high switching reliability of the contacts the switching voltage should not be below 24 V, also taking environmental influences in the long term into account.

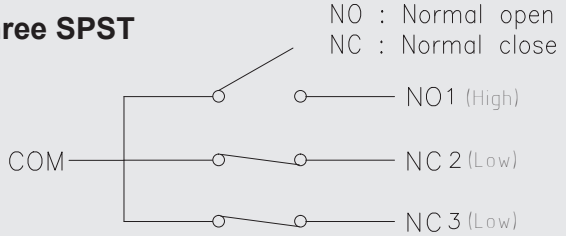
SPST switching element

Single-pole, single throw (SPST) has two connection : C-common, NO-normally open, which allows the switching element to be electrically to the circuit NO state.

Two SPST



Three SPST



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Conversion table

Pressure conversion chart

psi	atm	kgf/cm²	inH_2O	mmHg	inHg	kPa	bar	mmH_2O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.835	0.06895	704.28104
14.696	1	1.0332	407.484	760	29.921	101.325	1.01325	10350.0936
14.2233	0.96784	1	394.38	735.559	28.959	98.096	0.98067	10,000
0.036092	0.002454	0.00253	1	1.8651	0.07343	0.249	0.00249	25.4
0.019336	0.001315	0.001359	0.53616	1	0.03937	0.1333	0.001333	13.618464
0.491154	0.0033421	0.03453	13.6185	25.4	1	3.3864	0.033864	345.9099
0.145	0.00987	0.010197	4.0186	7.5006	0.2953	1	0.01	102.07244
14.5038	0.98692	1.01972	402.156	750.062	29.53	100	1	10214.7624
0.00142	0.000097	0.0001	0.03937	0.0734	0.0029	0.0098	0.000098	1

Memo

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Memo

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