Electrical contact pressure gauge with aluminium case
Model: P531, P532, P533, P534, P537, P539 series

Spec. sheet no. PD05-05

Service intended
P530 series are designed for a local reading of measured pressure and equipped with the inductive 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 setpoints.

Nominal diameter
100 and 150 mm

Accuracy
±1.5 % of full scale

Scale range (MPa, kPa, bar)
-0.1 ~ 0 to -0.1 ~ 2 MPa
0 ~ 0.1 to 0 ~ 100 MPa

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

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

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)

Element
C type bourdon tube
Stainless steel (316SS)

Case
Black finished aluminium

Cover
Black finished aluminium
Screwed

Window
Acrylic resin
Safety glass (P539)

Movement
Stainless steel

Dial
White aluminium with black graduations

Pointer
BsT3 alloy, black painted pointer with golden plated

Contacts
Contact rating : AC 110 V, 0.5 A/AC 220 V 0.25 A
DC 110 V, 0.3 A/DC 220 V 0.15 A
Dielectric strength : AC 1,000 V/min
Insulation resistance : More than 100 MΩ at DC 500 V

Process connection
⅜", ½" PT, NPT and PF

Certificates
Pressure equipment directive (2014/68/EU) Annex III Module H

Main order — Ordering information

1. Base model

P531 High alarm contact type pressure gauge
P532 High and low alarm contact type pressure gauge
P533 Low alarm contact type pressure gauge
P534 Two high alarm contact type pressure gauge
P537 Two low alarm contact type pressure gauge
P539 Multi-purpose contact type pressure gauge for transformer, only available with diameter 100 mm

2. Nominal diameter

4 100 mm
6 150 mm, not available with model P539 series

3. Type of mounting

A Bottom connection, direct
B Bottom connection, surface, case mounting plate, not available with diameter 150 mm
G Lower back connection, direct, only available with diameter 150 mm and model P539
L Lower back connection, flush, case center mounting plate, not available with diameter 150 mm
M Lower back connection, flush, cover center mounting bracket, only available with diameter 150 mm

4. Accuracy

4 ±1.5 % of full scale

5. Process connection

D ⅜"
E ½", only lower back mounting type

6. Connection type

B PF
C PT
D NPT
Z Other

7. Unit

H bar
I MPa
J kPa

8. Range

XXX Refer to pressure unit and range table

9. Pressure connection material and dial color

3 316SS and 2 colors
7 316SS and 3 colors

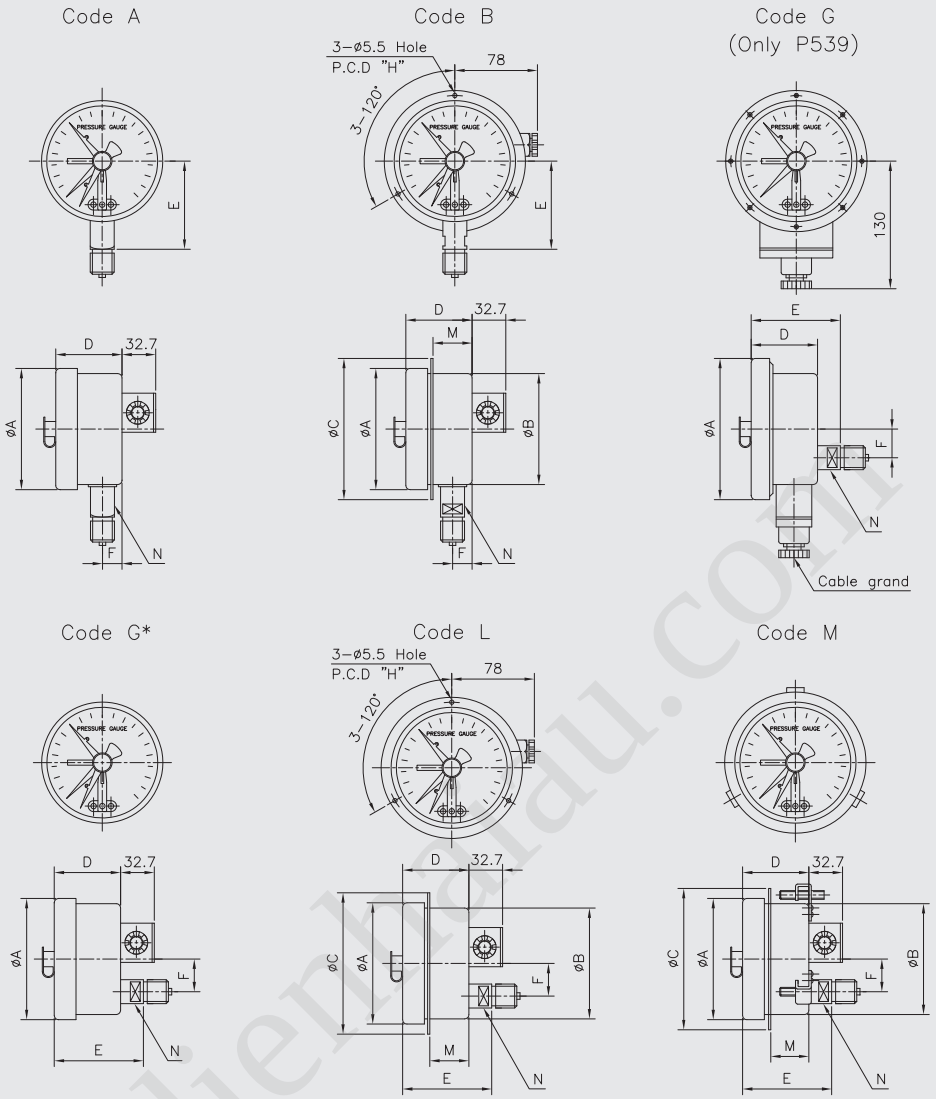
10. Option

0 None
1 Accessories

Sample ordering code

1	2	3	4	5	6	7	8	9	10
P531	**4**	**A**	**4**	**D**	**D**	**H**	**XXX**	**3**	**0**

P53X : Type of mounting



Dimensions (mm)

Dial size	Available code		A	B	C	D ±2	E ±2	F ±1	H	M	N
100	P531 P533	A	110			78.5	74	15			14
		B	110	107	136	78.5	74	15	120	58.5	14
		L	110	107	136	78.5	97.3	36	120	58.5	17
	P532 P534	A	110			78.5	74	15			14
		B	110	107	136	78.5	74	15	120	58.5	14
		L	110	107	136	78.5	97.3	36	120	58.5	17
	P537	A	110			78.5	74	15			14
		B	110	107	136	78.5	74	15	120	58.5	14
		L	110	107	136	78.5	97.3	36	120	58.5	17
	P539	G	134			68	86	36			14
150	P531 P533	A	172			68.5	107	18.2			22
		G*	172			68.5	86.3	45			17
		M	172	159	184	69	86.8	45		42	17
	P532 P534	A	172			68.5	107	18.2			22
		G*	172			68.5	86.3	45			17
		M	172	159	184	69	86.8	45		42	17
	P537	A	172			68.5	107	18.2			22
		G*	172			68.5	86.3	45			17
		M	172	159	184	69	86.8	45		42	17

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 P530 series**
		Dry gauges
Maximum voltage		250 V
Current ratings	**Make ratings**	1.0 A
	Break ratings	1.0 A
	Continuos load	0.6 A
Maximum load		30 W 50 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

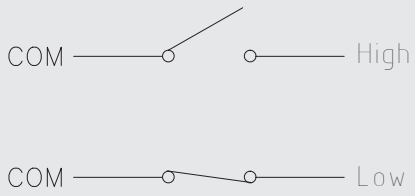
Voltage (DIN IEC 38) DC / AC	**Electrical contacts type pressure gauge model P530 series**		
	Dry gauges		
	Ohmic load		Inductive load
	DC	AC	
			cosØ > 0.7
V	mA	mA	mA
220 / 230	100	120	65
110 / 110	200	240	130
48 / 48	300	450	200
24 / 24	400	600	250

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

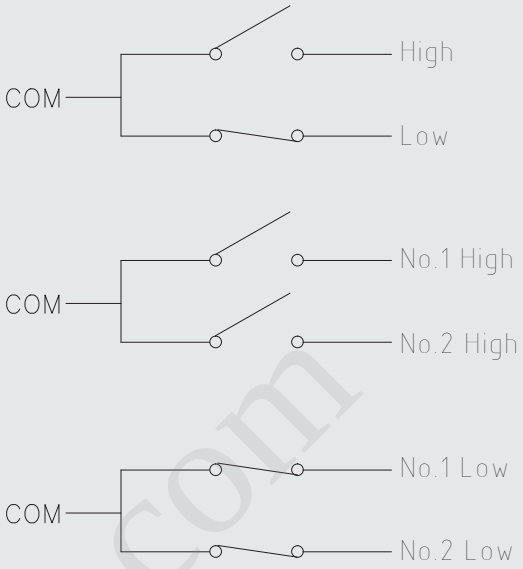
Single-pole, single throw (SPST) has two connection : C-common, NO-normally open, which allows the switching element to be electrically to the circuit NO state.

One SPST



Two SPST

NO : Normal open
NC : Normal close



Pressure unit and range table

Range and code	Unit and code			P531, P532, P533, P534, P537		P539
	H : bar	I : MPa	J : kPa	100 mm	150 mm	100 mm
026	-1 ~ 0	-0.1 ~ 0	-100 ~ 0	O	O	O
040	0 ~ 0.5	0 ~ 0.05	0 ~ 50	O	X	O
041	0 ~ 1	0 ~ 0.1	0 ~ 100	O	O	O
042	0 ~ 2	0 ~ 0.2	0 ~ 200	O	O	O
043	0 ~ 3	0 ~ 0.3	0 ~ 300	O	O	O
044	0 ~ 4	0 ~ 0.4	0 ~ 400	O	O	O
045	0 ~ 6	0 ~ 0.6	0 ~ 600	O	O	O
047	0 ~ 10	0 ~ 1	0 ~ 1,000	O	O	O
050	0 ~ 15	0 ~ 1.5	X	O	O	O
051	0 ~ 20	0 ~ 2	X	O	O	O
052	0 ~ 25	0 ~ 2.5	X	O	O	O
054	0 ~ 35	0 ~ 3.5	X	O	O	O
055	0 ~ 50	0 ~ 5	X	O	O	O
057	0 ~ 70	0 ~ 7	X	O	O	O
058	0 ~ 100	0 ~ 10	X	O	O	O
059	0 ~ 150	0 ~ 15	X	O	O	O
062	0 ~ 250	0 ~ 25	X	O	O	O
064	0 ~ 350	0 ~ 35	X	O	O	O
066	0 ~ 500	0 ~ 50	X	O	O	O
068	0 ~ 700	0 ~ 70	X	O	O	O
070	0 ~ 1,000	0 ~ 100	X	O	O	O
027	-1 ~ 1	-0.1 ~ 0.1	-100 ~ 100	O	O	O
028	-1 ~ 2	-0.1 ~ 0.2	-100 ~ 200	O	O	O
029	-1 ~ 3	-0.1 ~ 0.3	-100 ~ 300	O	O	O
030	-1 ~ 4	-0.1 ~ 0.4	-100 ~ 400	O	O	O
031	-1 ~ 6	-0.1 ~ 0.6	-100 ~ 600	O	O	O
032	-1 ~ 10	-0.1 ~ 1	-100 ~ 1,000	O	O	O
033	-1 ~ 15	-0.1 ~ 1.5	-100 ~ 1.5 MPa	O	O	O
034	-1 ~ 20	-0.1 ~2	-100 ~ 2 MPa	O	O	O

O : Available X : Not available