

# Diaphragm seal type pressure gauge

**Model: P710 Series – Screwed process connection**

**Model: P720 Series - "I" type process connection**

**Model: P730 Series – Flat type flange process connection**

Spec. sheet no. PD07-02

## Service intended

Diaphragm seal type gauges are suitable for the situation where the process medium would corrode the instrument connection and pressure sensing element. Furthermore, this type of gauge is highly recommended in a situation where the process medium contains suspended solids, or if it is sufficiently viscous to clog the instrument connection and pressure sensing element. Additionally, it is recommended to be used where the process medium might freeze or solidify the instrument connection and pressure sensing element due to the ambient or process temperature change, and where the process medium requires the flushing from the system to prevent any contamination.

## Design

Internal diaphragm

## Accuracy

Refer to gauge model

## Suitable pressure range (MPa, kPa, bar)

-0.1 ~ 0 to -0.1 ~ 2.5 MPa

0 ~ 0.1 to 0 ~ 35 MPa

## Filling liquid

Silicone oil

## Working temperature

Ambient : -20 ~ 65 °C

Fluid : Max. 100 °C

## Diaphragm material

Diaphragms are available in many corrosion resistant materials. Compatibility of selected material and process fluid is the responsibility of user.

## Temperature effect

Accuracy at temperature above and below the reference temperature (20 °C) will be effected by approximately  $\pm 0.5\%$  per 10 °C of full scale



Model : P710

Model : P720



Model : P730

## Standard features

### Process connection

Model P710 : PT, NPT and others feasible

Model P720, P730 : Flanges to ANSI, JIS or other standard

### Upper flange (Gauge side)

Stainless steel (304SS, 316SS, Titanium))

### Diaphragm

316L SS, Monel, Hastelloy-C

Titanium, Tantalum, Nickel, Alloy20

### Under flange (Process side)

Stainless steel (304SS, 304L SS, 316SS, 316L SS)

Monel, Hastelloy-C, Titanium, Nickel

### Certificates

ATEX Ex II GD c IIC TX

### Option

- Diaphragm and under flange are available in PTFE coating or PTFE lining (★ See note)
- Under flange (Process side) are available in purging plug or heating/cooling jacket

**1. Base model**

<b>P711</b>	Screwed process connection diaphragm seal
<b>P712</b>	Screwed process connection remote diaphragm seal
<b>P721</b>	"I" type process connection diaphragm seal
<b>P722</b>	"I" type process connection remote diaphragm seal
<b>P731</b>	Flat type flange process connection diaphragm seal
<b>P732</b>	Flat type flange process connection remote diaphragm seal

**2. Gauge model and mounting type**

**XX** Refer to gauge model and mounting type table

**3. Upper flange / Diaphragm material**

<b>B</b>	304SS / 316L SS
<b>E</b>	316L SS / 316L SS
<b>H</b>	304SS / 316L SS with PTFE sheet
<b>I</b>	Alloy 825 / Alloy 825
<b>J</b>	316SS / 316L SS
<b>K</b>	316SS / Monel
<b>L</b>	316SS / Hastelloy-C
<b>M</b>	316L SS / Monel
<b>N</b>	316SS / Tantalum
<b>Q</b>	316SS / 316L SS with PTFE sheet
<b>R</b>	Titanium / Titanium
<b>S</b>	316L SS / Tantalum
<b>T</b>	316SS / Nickel
<b>U</b>	316SS / Alloy 20
<b>V</b>	PVC / PTFE
<b>X</b>	316L SS / Hastelloy-C
<b>Y</b>	PVDF / PTFE

**4. Process connection type**

**XXX** Refer to process connection type table

**5. Unit**

<b>H</b>	bar
<b>I</b>	MPa
<b>J</b>	kPa

**6. Range**

**XXX** Refer to pressure range table

**7. Under flange material**

<b>7X</b>	Alloy 20
<b>BX</b>	304SS
<b>DX</b>	304L SS
<b>CX</b>	316SS
<b>EX</b>	316L SS
<b>LX</b>	Monel
<b>KX</b>	Hastelloy-C
<b>MX</b>	Titanium
<b>51</b>	316L SS with PTFE coating (see note1)
<b>JX</b>	Inconel 600
<b>RX</b>	304SS with PTFE coating (see note1)
<b>PX</b>	304SS with PTFE lining (see note1)
<b>SX</b>	316SS with PTFE coating (see note1)
<b>QX</b>	316SS with PTFE lining (see note1)
<b>50</b>	316L SS with PTFE lining (see note1)
<b>53</b>	Teflon
<b>22</b>	Nickel
<b>18</b>	317SS
<b>54</b>	PVC
<b>55</b>	CPVC
<b>39</b>	Alloy 825
<b>56</b>	PVDF
<b>ZZ</b>	Other

Note1 : PTFE lining and coating is available for the pressure range less than 7 MPa.

Note2 : Using Plastic as its material, the pressure range is available up to 2 MPa.

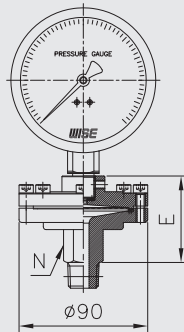
**8. Option**

<b>0</b>	None
<b>1</b>	Accessories
<b>2</b>	Liquid (Glycerin in gauge)
<b>E</b>	Liquid (Silicone in gauge)
<b>F</b>	Flushing ring
<b>H</b>	PVC jacked capillary tube

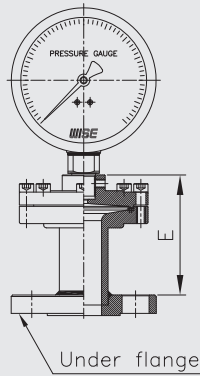
1	2	3	4	5	6	7	8	Sample ordering code
P711	XX	B	XXX	H	XXX	7X	0	

## P7XX : Type of mounting (1/2)

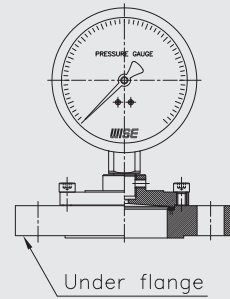
Code P711



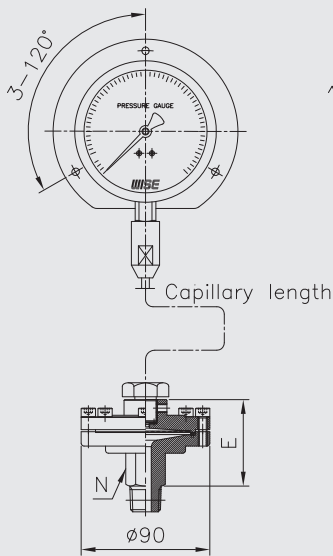
Code P721



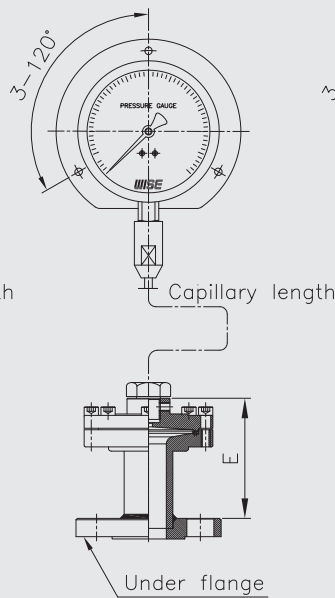
Code P731



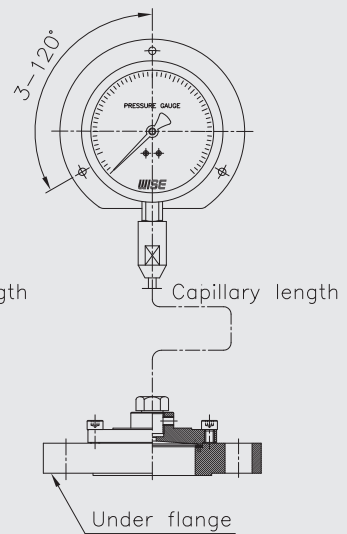
Code P712



Code P722



Code P732

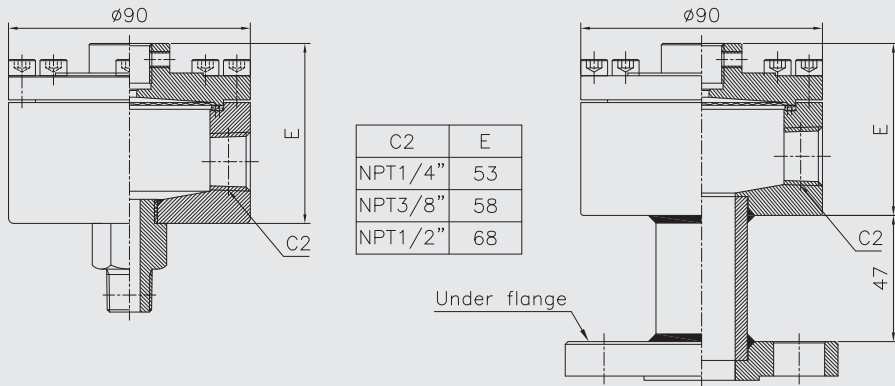


Dimensions (mm)

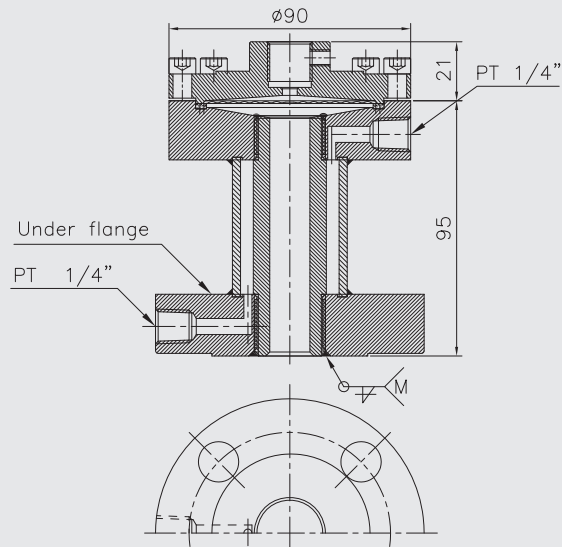
Available code	E	N	Capillary length
P711,P712	60	24	2000,3000,6000(Other : )
P721,P722	83		2000,3000,6000(Other : )
P731,P732			2000,3000,6000(Other : )

## P7XX : Type of mounting (2/2)

\* Options  
<Flushing ring type>



<Heat/Cooling type>



## Process connection type table - 8<sup>th</sup> and 9<sup>th</sup> characters

8 <sup>th</sup> character		9 <sup>th</sup> character			
Code	Connection size	For model P711, P712		For model P721, P722, P731, P732	
		Code	Connection type	Code	Flange rating
C *	¼"	PF	PF	KA	JIS 5K RF
D *	⅜" (10A)	AB	PT	AC	B16.5 Class 150 RF
E	½" (15A)	AA	NPT	AE	B16.5 Class 150 FF
F	¾" (20A)	FF	BSPT	AD	B16.5 Class 150 RFSF
G	1" (25A)	GG	BSPF	AF	B16.5 Class 300 RF
H	1½" (32A)	HH	NPS	AH	B16.5 Class 300 FF
J	1½" (40A)	JJ	M	AG	B16.5 Class 300 RFSF
K	2" (50A)			AJ	B16.5 Class 600 RF
L	2½" (65A)			KT	JIS 5K FF
M	3" (80A)			AL	B16.5 Class 600 FF
N	4" (100A)			AK	B16.5 Class 600 RFSF
P	⅞"			KL	JIS 10K RF
Z	Other			KN	JIS 10K FF
				KM	JIS 10K RFSF
				KP	JIS 20K RF
				KR	JIS 20K FF
				KQ	JIS 20K RFSF
				KC	JIS 30K RF
				KU	JIS 30K FF
				KJ	JIS 30K RFSF
				AS	B16.5 Class 900 RF
				KD	JIS 40K RF
				KV	JIS 40K FF
				A8	B16.5 Class 150 RTJ
				A9	B16.5 Class 300 RTJ
				AV	B16.5 Class 600 RTJ
				AT	B16.5 Class 1,500 RF
				AN	B16.5 Class 1,500 FF
				AB	B16.5 Class 1,500 RFSF
				AX	B16.5 Class 1,500 RTJ
				AY	B16.5 Class 2,500 RTJ
				ZZ	Other

\* Only available with model P711, P712

\* Connection size 10A can be apply according to JIS standard

**Available gauges model and mounting type table - 5<sup>th</sup> and 6<sup>th</sup> characters**

Code	Model	Remark	Code	Model	Remark
2C	P221 50A		MF	P524 100B	Only available remote diaphragm seal type
3C	P229 160A		NF	P525 100B	Only available remote diaphragm seal type
4C	P235 35A		FG	P521 100G	
6C	P222 114A		HG	P522 100G	
7A	P252 63A		KG	P523 100G	
7B	P252 63B	Only available remote diaphragm seal type	MG	P524 100G	
7F	P252 63F		NG	P525 100G	
7G	P252 63G		EN	P513 100N	
7J	P252 63J	Only available remote diaphragm seal type	FN	P521 100N	Only available remote diaphragm seal type
7N	P252 63N	Only available remote diaphragm seal type	GN	P522 100N	Only available remote diaphragm seal type
7U	P252 80A		HN	P523 100N	Only available remote diaphragm seal type
7V	P252 80G		FA	P531 100A	
7W	P252 80N	Only available remote diaphragm seal type	FB	P531 100B	Only available remote diaphragm seal type
7X	P252 80B	Only available remote diaphragm seal type	FL	P531 100L	Only available remote diaphragm seal type
7Y	P252 80M	Only available remote diaphragm seal type	GA	P531 150A	
8A	P252 100A		GL	P531 150M	Only available remote diaphragm seal type
8B	P252 100B	Only available remote diaphragm seal type	HA	P532 100A	
8C	P252 100W	Only available remote diaphragm seal type	HB	P532 100B	Only available remote diaphragm seal type
8D	P252 100L	Only available remote diaphragm seal type	HL	P532 100L	Only available remote diaphragm seal type
8G	P252 100G		JA	P532 150A	
8M	P252 100M	Only available remote diaphragm seal type	JB	P532 150B	Only available remote diaphragm seal type
8N	P252 100N	Only available remote diaphragm seal type	JL	P532 150M	Only available remote diaphragm seal type
7P	P258 63A		KA	P533 100A	
7Q	P258 63B	Only available remote diaphragm seal type	KB	P533 100B	Only available remote diaphragm seal type
7E	P258 63F		KL	P533 100L	Only available remote diaphragm seal type
7R	P258 63J	Only available remote diaphragm seal type	LA	P533 150A	
7S	P258 63N	Only available remote diaphragm seal type	LL	P533 150M	Only available remote diaphragm seal type
7T	P258 63G		MA	P534 100A	
8U	P258 80A		MB	P534 100B	Only available remote diaphragm seal type
8V	P258 80G		ML	P534 100L	Only available remote diaphragm seal type
8W	P258 80N	Only available remote diaphragm seal type	NA	P534 150A	
8X	P258 80B	Only available remote diaphragm seal type	NL	P534 150M	Only available remote diaphragm seal type
8P	P258 100A		9N	P253 63N	Only available remote diaphragm seal type
8Q	P258 100B	Only available remote diaphragm seal type	AA	P253 100A	
8R	P258 100M	Only available remote diaphragm seal type	AB	P253 100B	Only available remote diaphragm seal type
8S	P258 100N	Only available remote diaphragm seal type	AN	P253 100N	Only available remote diaphragm seal type
8T	P258 100G		AP	P259 100A	
8Y	P258 100W	Only available remote diaphragm seal type	AQ	P259 100B	Only available remote diaphragm seal type
8Z	P258 100L	Only available remote diaphragm seal type	AS	P259 100N	Only available remote diaphragm seal type
9A	P253 63A		CA	P330 150A	
9B	P253 63B	Only available remote diaphragm seal type	CB	P330 150B	Only available remote diaphragm seal type
9F	P253 63F		CM	P330 150M	Only available remote diaphragm seal type
9J	P253 63J	Only available remote diaphragm seal type	CP	P336 100A	
FE	P521 100A		CQ	P336 100B	Only available remote diaphragm seal type
HE	P522 100A		CR	P336 100G	
KE	P523 100A		CS	P336 100M	Only available remote diaphragm seal type
ME	P524 100A		DD	P500-1 100A	
NE	P525 100A		DE	P500-2 100A	
FF	P521 100B	Only available remote diaphragm seal type	DF	P500-3 100A	
HF	P522 100B	Only available remote diaphragm seal type	DG	P500-4 100A	
KF	P523 100B	Only available remote diaphragm seal type	DH	P500-5 100A	

Available gauges model and mounting type table - 5<sup>th</sup> and 6<sup>th</sup> characters

Code	Model	Remark	Code	Model	Remark
DJ	P500-1 160A		RK	P6211 100D	
DK	P500-2 160A		RL	P6221 100D	
DL	P500-3 160A		RM	P6231 100D	
DM	P500-4 160A		RN	P6241 100D	
DN	P500-5 160A		RO	P6251 100D	
EA	P359 125B		RC	P6211 160D	
EC	P257 100A		RD	P6221 160D	
ED	P511 100A		RE	P6231 160D	
EE	P512 100A		RF	P6241 160D	
EF	P513 100A		RG	P6251 160D	
EG	P514 100A		GW	P6212 100D	
EH	P515 100A		GX	P6222 100D	
EI	P257 100C	Only available remote diaphragm seal type	GY	P6232 100D	
EJ	P511 100B	Only available remote diaphragm seal type	GZ	P6242 100D	
EK	P512 100B	Only available remote diaphragm seal type	SA	P6252 100D	
EL	P257 160A		SB	P6212 160D	
EP	P257 160C	Only available remote diaphragm seal type	SC	P6222 160D	
GA	P601 150D		SD	P6232 160D	
PA	P535 100B	Only available remote diaphragm seal type	SE	P6242 160D	
PB	P535 150B	Only available remote diaphragm seal type	SF	P6252 160D	
PC	P535 100A		RH	P6311 150D	
PD	P535 100L	Only available remote diaphragm seal type	RJ	P6321 150D	
QA	P536 100B	Only available remote diaphragm seal type	RI	P6331 150D	
QB	P536 150B	Only available remote diaphragm seal type	RP	P6341 150D	
QC	P537 100B	Only available remote diaphragm seal type	RT	P6351 150D	
QD	P536 100A		RQ	P6312 150D	
QE	P536 100L		6Z	P6322 150D	
GB	P601 100D		RV	P6332 150D	
GC	P602 100D		RW	P6342 150D	
GD	P603 100D		RX	P6352 150D	
GE	P604 100D		RY	P6411 150D	
GF	P605 100D		RZ	P6412 150D	
6X	P601 160D		SG	P6413 150D	
GG	P602 160D		SH	P6414 150D	
GH	P603 160D		SI	P6415 150D	
GI	P604 160D		SJ	P6421 150D	
GJ	P605 160D		SK	P6422 150D	
GK	P611 100D		SL	P6423 150D	
6Y	P612 100D		SM	P6424 150D	
GM	P613 100D		SN	P6425 150D	
GV	P614 100D		SO	P6511 160D	
GO	P615 100D		SP	P6512 160D	
GP	P611 160D		SQ	P6513 160D	
GQ	P612 160D		SR	P6514 160D	
GR	P613 160D		SS	P6515 160D	
GS	P614 160D		ST	P6521 160D	
GT	P615 160D		SU	P6522 160D	
RA	P620 100D		SV	P6523 160D	
RB	P620 160D		SW	P6524 160D	
RR	P630 100D		SX	P6525 160D	
RS	P630 160D		6A	P661 100D	

**Available gauges model and mounting type table - 5<sup>th</sup> and 6<sup>th</sup> characters**

Code	Model	Remark	Code	Model	Remark
6B	P662 100D		UZ	P942	
6K	P661 160D		XA	P252 160A	
RU	P662 160D		XB	P252 160B	Only available remote diaphragm seal type
6E	P671 160D		XC	P258 160A	
6F	P672 160D		XD	P258 160B	Only available remote diaphragm seal type
6G	P673 160D		XE	P252 160N	Only available remote diaphragm seal type
6H	P6811 150D		XF	P258 160N	Only available remote diaphragm seal type
6L	P6812 150D		XG	P252 160M	Only available remote diaphragm seal type
6M	P6821 150D		XH	P258 160M	Only available remote diaphragm seal type
6N	P6822 150D		XI	P252 160G	
6I	P6911 160D		XJ	P945	
6O	P6912 160D		XK	P946	
6P	P6913 160D		XZ	P953 1B	
6Q	P6914 160D		XY	P953 2B	
6R	P6915 160D		YA	P970 1B	
6J	P6921 160D		YB	P990 single	
6T	P6922 160D		YC	P990 double	
6U	P6923 160D		YD	P970 2B	
6V	P6924 160D		YE	P947	
6W	P6925 160D		YF	P981	
TZ	P941		YG	P982	