

Ultra high purity pressure gauge (EP grade)

Model: P820 series (316L type double melt)

Spec. sheet no. PD08-02

Service intended

P820 series are specially designed for the ultra-high purity gas distribution system used in a semiconductor, electronic, medical, biotechnology and pharmaceutical industry.



Nominal diameter

50 (2") and 63 mm (2½")

Accuracy

Grade A: 50 (2") and 63 mm (2½")

Grade B: 50 (2") and 63 mm (2½")

Scale range

0 ~ 28 MPa

Working pressure

Steady pressure : 75 % of full scale value

Fluctuating pressure : 67 % of full scale value

Working temperature

Ambient : -40 ~ 65 °C

Fluid : Max. 100 °C

Temperature effect

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



Standard features

Pressure connection

Type 316L SS double melt electropolished
low mount or center back mount

Surface finish $Ra \leq 0.25 \mu m$

■ ¼" NPT male thread

■ Swivel male or female face seal fitting

Element

Type 316L SS

<6 MPa : C-type bourdon tube

≥6 MPa : Helical type bourdon tube

Case

Type 304SS, Electropolished with pressure relief

Cover and window

Twist-lock polycarbonate

Movement

Stainless steel

Dial

White aluminium with pointer stop pin

With black/red lettering, dual pressure scale (bar/psi)

Pointer

Black painted aluminium alloy

Helium leak rate

Tested to confirm leakage rates of less than
 10^{-9} mbar • ℓ /sec

Certificates

ATEX II 2G Ex h IIC T6...T1 Gb

ATEX II 2D Ex h IIIC T85°C...T450°C Db

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1. Base model**P820** Ultra high purity gauge (316L type double melt)**2. Nominal diameter**

- 1** 50 mm (2")
- 2** 63 mm (2½")

3. Type of mounting

- A** Low mount (LM)
- F** Center back mount (CBM)
- I** Center back connection, flush, case center mounting plate with bracket, only available with diameter 50 mm

4. Accuracy

- 3** Grade A
- 4** Grade B

5. Connection type

- CD** ¼" NPT (Male)
- SF** Swivel female face seal
- SM** Swivel male face seal
- TW** Tube welding

6. Unit

- H** bar
- I** MPa

7. Range**XXX** Refer to pressure range table**8. Pressure connection material and dials color**

- 4** 316L SS and 2 colors
- 8** 316L SS and 3 colors

9. Options

- 0** None
- 1** Accessories

Sample ordering code

1	2	3	4	5	6	7	8	9
P820	1	A	3	CD	H	XXX	4	0

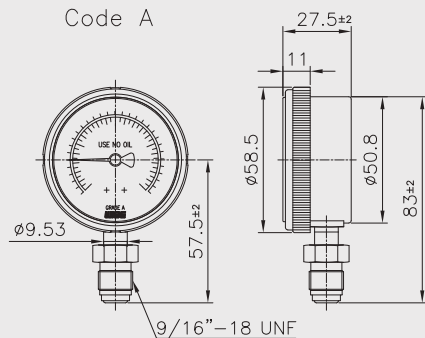


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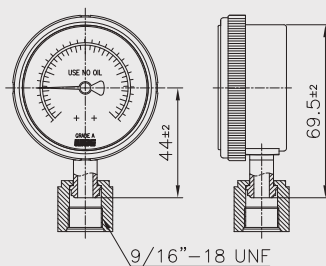
P820 : Type of mounting (1/2)

<Ø50>

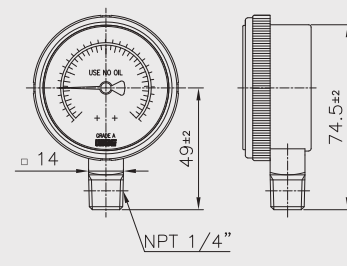
Code A



Swivel male

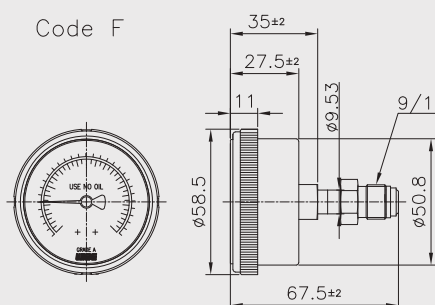


Swivel female

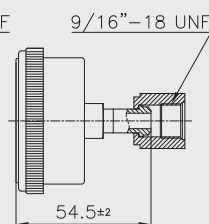


NPT male

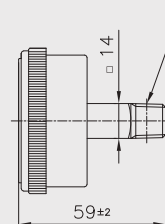
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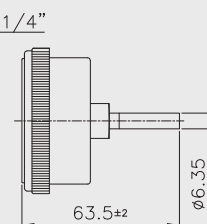
Swivel male



Swivel female

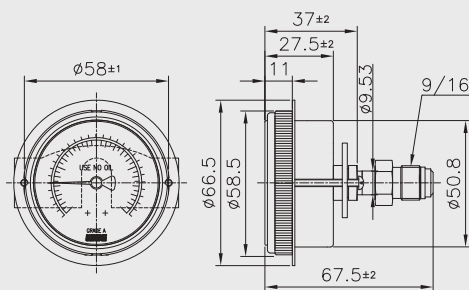


NPT male

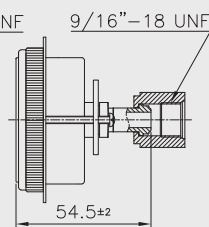


Tube welding

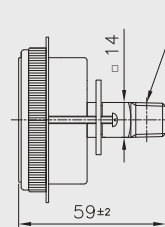
Code I



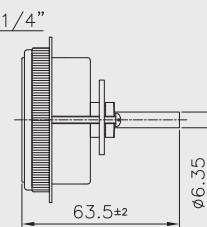
Swivel male



Swivel female



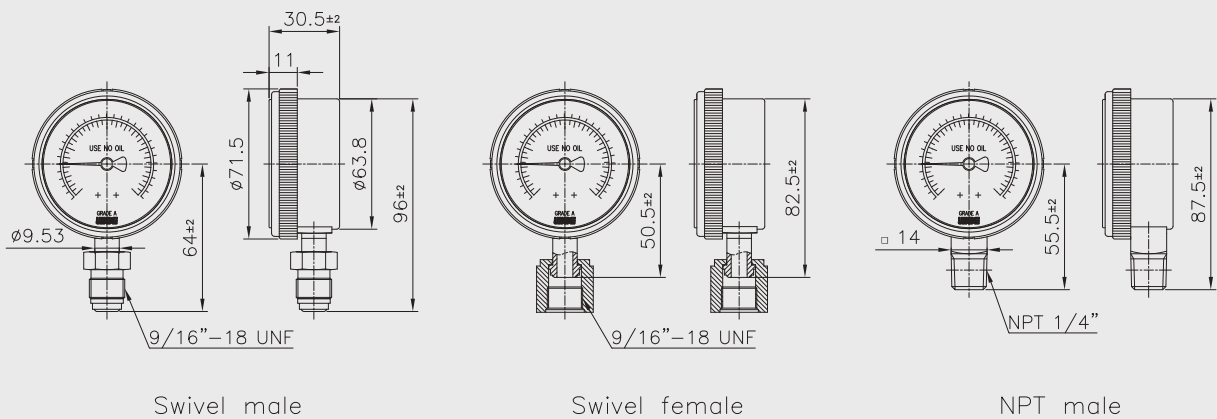
NPT male



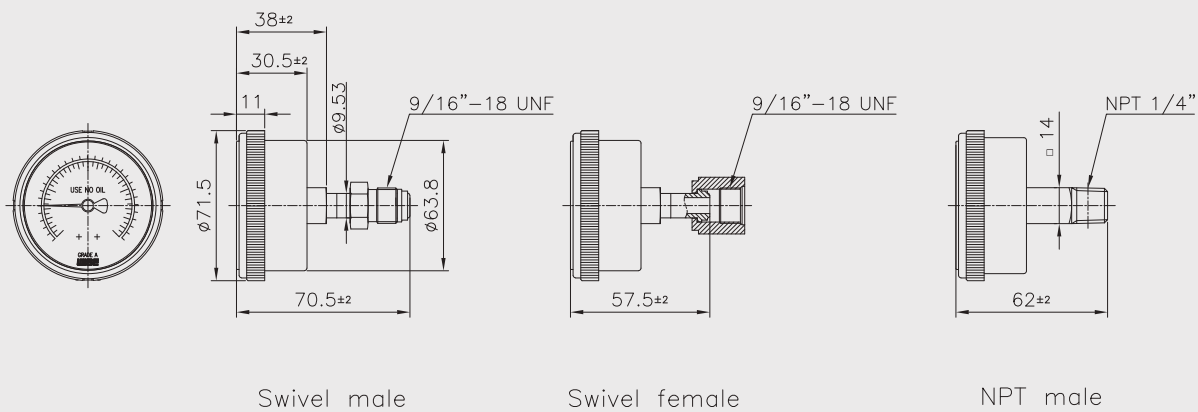
Tube welding

<Ø63>

Code A



Code F



Range table

Range and code	Unit and code		Nominal diameter	
	H : bar	I : MPa	50 mm	63 mm
041	0 ~ 1	0 ~ 0.1	X	O
133	0 ~ 1.6	0 ~ 0.16	X	O
042	0 ~ 2	0 ~ 0.2	O	O
134	0 ~ 2.5	0 ~ 0.25	X	O
043	0 ~ 3	0 ~ 0.3	O	O
044	0 ~ 4	0 ~ 0.4	O	O
045	0 ~ 6	0 ~ 0.6	O	O
047	0 ~ 10	0 ~ 1	O	O
050	0 ~ 15	0 ~ 1.5	O	O
143	0 ~ 16	0 ~ 1.6	O	O
051	0 ~ 20	0 ~ 2	O	O
052	0 ~ 25	0 ~ 2.5	O	O
054	0 ~ 35	0 ~ 3.5	O	O
151	0 ~ 40	0 ~ 4	O	O
055	0 ~ 50	0 ~ 5	O	O
056	0 ~ 60	0 ~ 6	O	O
057	0 ~ 70	0 ~ 7	O	O
058	0 ~ 100	0 ~ 10	O	O
059	0 ~ 150	0 ~ 15	O	O
060	0 ~ 160	0 ~ 16	O	O
062	0 ~ 250	0 ~ 25	O	O
027	-1 ~ 1	-0.1 ~ 0.1	O	O
127	-1 ~ 1.6	-0.1 ~ 0.16	X	O
028	-1 ~ 2	-0.1 ~ 0.2	O	O
029	-1 ~ 3	-0.1 ~ 0.3	O	O
030	-1 ~ 4	-0.1 ~ 0.4	O	O
010	-1 ~ 5	-0.1 ~ 0.5	O	O
031	-1 ~ 6	-0.1 ~ 0.6	O	O
014	-1 ~ 9	-0.1 ~ 0.9	O	O
032	-1 ~ 10	-0.1 ~ 1	O	O
033	-1 ~ 15	-0.1 ~ 1.5	O	O
034	-1 ~ 20	-0.1 ~ 2	O	O
035	-1 ~ 25	-0.1 ~ 2.5	X	O

O : Available X : Not available

Description of accuracy

Permissible error (± Percent of span)

Accuracy Grade	Lower 1/4 of scale	Middle 1/2 of scale	Upper 1/4 of scale
A	2.0	1.0	2.0
B	3.0	2.0	3.0

Conversion table

Pressure conversion chart

psi	atm	kgf/cm ²	inH ₂ O	mmHg	inHg	kPa	bar	mmH ₂ O
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