

ULTRA HIGH PURITY GAUGES MODEL : P820 Series (Type 316L VIM/VAR)

WISE[®]

SERVICE INTENDED

The P820 Series specifically designed for ultra high purity gas distribution system used in semiconductor industry and electronic, medical, biotechnology, pharmaceutical industry.

NOMINAL DIAMETER

50mm (2"), 63mm (2 1/2")

ACCURACY

Grade A(ASME B40.1)

Lower 1/4 of scale - $\pm 2.0\%$ of span

Middle 1/2 of scale - $\pm 1.0\%$ of span

Upper 1/4 of scale - $\pm 2.0\%$ of span

Class 1.6(EN837-1) - $\pm 1.6\%$ of span

Class 1.0(EN837-1) - $\pm 1.0\%$ of span - optional

SCALE RANGE

0.1Mpa vacuum to 25MPa

WORKING PRESSURE

Steady pressure : 75% of full scale value

Fluctuating pressure : 67% of full scale value

OPERATING TEMPERATURE

Ambient : -40°C to +60°C

Medium : +100°C maximum



Standard Features

PRESSURE CONNECTION

Type 316L Stainless steel VIM/VAR electropolished low mount or center back mount

surface finish $Ra \leq 0.25 \mu m$

- 1/4 inch NPT male thread

- VCR[®] male or female face seal fitting

PRESSURE ELEMENT

Type 316L Stainless steel

<6MPa : C-type bourdon tube

$\geq 6MPa$: helical type bourdon tube

MOVEMENT

Type 304 Stainless steel

DIAL

White aluminum, with pointer stop pin

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

POINTER

Black aluminum pointer

CASE

Type 304 Stainless steel, electropolished with pressure relief

RING AND WINDOW

Twist-lock polycarbonate

HELIUM LEAK RATE

Tested to confirm leakage rates of less than

10^{-9} mbar • Q /sec

ORDERING INFORMATION

BASE MODEL

P820 : Ultra high purity gauges - 316L VIM / VAR

NOMINAL DIAMETER

- 1 : 50mm (2")
- 2 : 63mm (2 1/2")

MOUNTING

- A : Low mount(LM)
- E : Center back mount (CBM)

ACCURACY

- 3 : 1.0 Class
- 4 : 1.6 Class

CONNECTION TYPE

- CD : 1/4" NPT(male)
- SF : Swivel female face seal
- SM : Swivel male face seal
- FM : Fixed male face seal

UNIT

- H : bar
- I : MPa

RANGE

Refer to Range Table

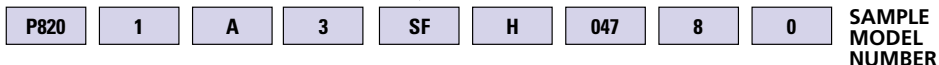
PRESSURE CONNECTION

MAT'L & DAILS

- 4 : 316LSS & 2 Colors
- 8 : 316LSS & 3 Colors

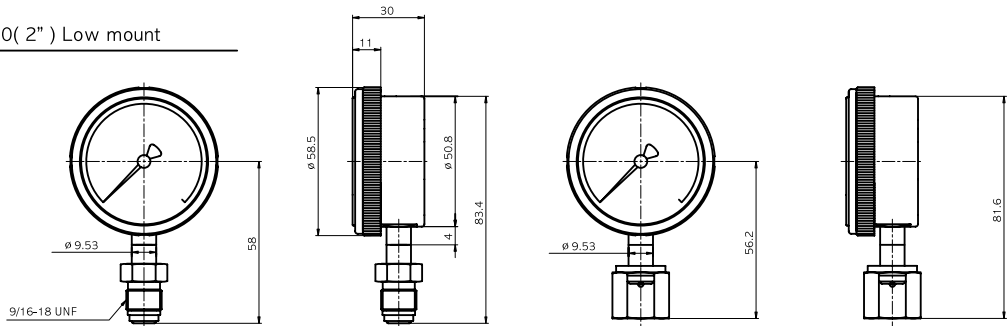
OPTIONS

- 0 : None
- 1 : Accessories



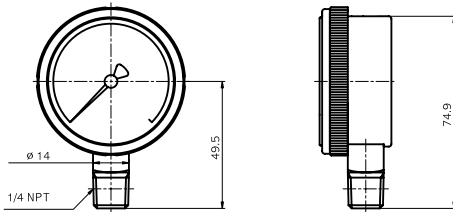
P820 (1/2) : TYPE OF MOUNTING

ø 50(2") Low mount



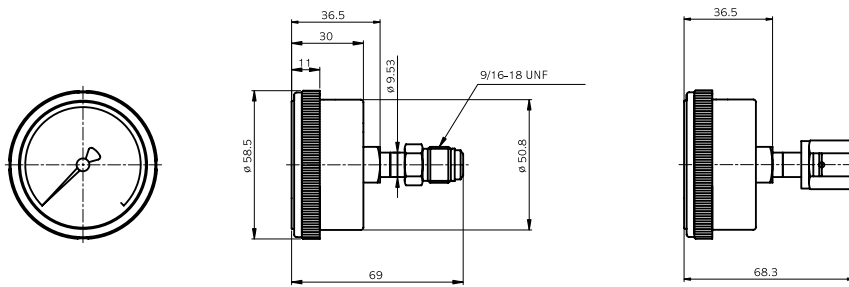
SWIVEL MALE

SWIVEL FEMALE



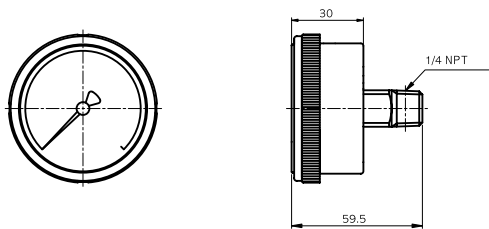
NPT MALE

ø 50(2") Center back mount



SWIVEL MALE

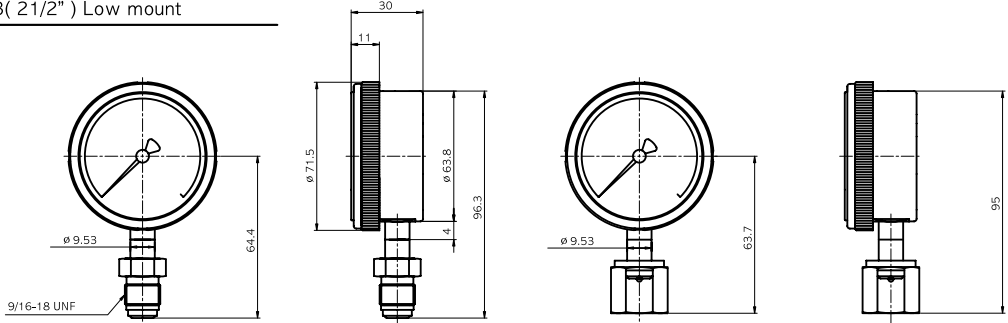
SWIVEL FEMALE



NPT MALE

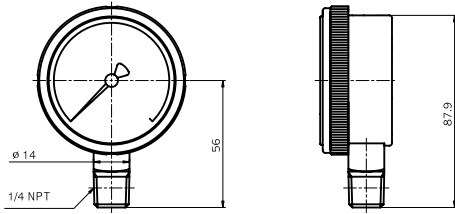
P820 (2/2) : TYPE OF MOUNTING

Ø 63(2 1/2") Low mount



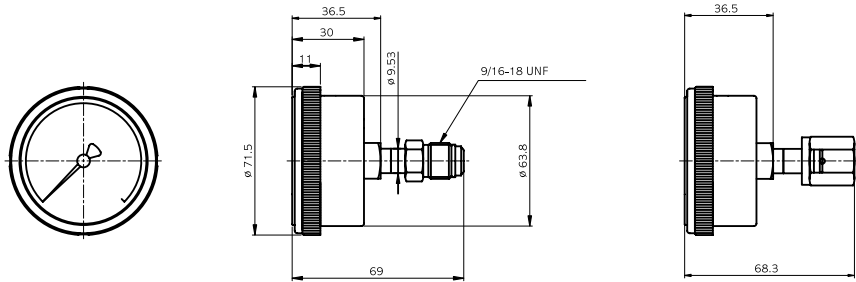
SWIVEL MALE

SWIVEL FEMALE



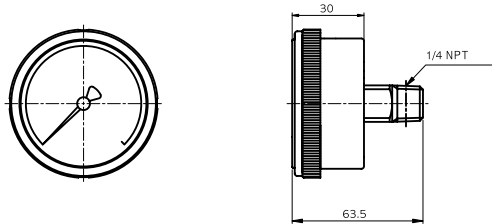
NPT MALE

Ø 63(2 1/2") Center back mount



SWIVEL MALE

SWIVEL FEMALE



NPT MALE

RANGE TABLE

RANGE & CODE	UNIT & CODE		NOMINAL DIAMETER	
	H : bar	I : MPa	50mm	63mm
026	-1	-0,1	○	○
040	0,5	0,05	×	×
041	1	0,1	○	×
133	1,6	0,16	○	○
042	2	0,2	○	×
134	2,5	0,25	○	○
043	3	0,3	○	×
044	4	0,4	○	○
045	6	0,6	○	○
047	10	1	○	○
050	15	1,5	○	×
143	16	1,6	○	○
051	20	2	○	×
052	25	2,5	○	○
054	35	3,5	○	×
151	40	4	○	○
055	50	5	○	×
056	60	6	○	○
057	70	7	○	×
058	100	10	○	○
059	150	15	○	×
060	160	16	○	○
062	250	25	○	○
027	+1	+0,1	○	×
127	-1~1,6	-0,1~0,16	○	○
028	-1~2	-0,1~0,2	○	×
129	-1~2,5	-0,1~0,25	○	○
029	-1~3	-0,1~0,3	○	○
030	-1~4	-0,1~0,4	○	×
010	-1~5	-0,1~0,5	○	○
031	-1~6	-0,1~0,6	○	×
014	-1~9	-0,1~0,9	○	○
032	-1~10	-0,1~1	○	×
033	-1~15	-0,1~1,5	○	○
034	-1~20	-0,1~2	○	×
035	-1~25	-0,1~2,5	×	×

○ : AVAILABLE × : NOT AVAILABLE

CONVERSION TABLE

PRESSURE CONVERSION CHART								
PSI	ATM	kg/cm ²	in.H ₂ O	mmHg	in.Hg	kPa	Bar	mmH ₂ O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.895	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	10000
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

VOLUME CONVERSION CHART							
GALLON (U.S)	CUBIC FEET	CUBIC INCHES	BARRELS (OIL)	CUBIC CM	CUBIC METER	LITER	IMP. GALLON
1	0.1337	231	0.02381	3785	0.003785	3.785	0.8327
7.481	1	1728	0.1781	28320	0.02832	28.32	6.229
0.004329	0.000578	1	0.000103	16.39	0.000016	0.01639	0.003605
42	5.615	9702	1	159000	0.159	158.94	34.97
0.000264	0.000035	0.06102	0.000006	1	0.000001	0.001	0.00022
264.17	35.3144	61023	6.2906	1000000	1	1000	220.1
0.264	0.0353	61.03	0.0629	1000	0.001	1	0.22
1.201	0.1606	277.4	0.0286	4546	0.004546	4.546	1

MASS CONVERSION CHART							
lb.	oz.	kg	gm	gal H ₂ O (32F)	long ton	metric tonne	ton
1	16	0.4536	453.6	0.1198	0.000446	0.000453	0.0005
0.0625	1	0.02835	28.35	0.00749	0.000027	0.000028	0.000031
2.205	35.27	1	1000	0.2642	0.009839	0.001	0.001102
0.002205	0.03527	0.001	1	0.000264	0.000000	0.000001	0.000001
8.345	133.5	3.785	3785	1	0.003726	0.003786	0.004171
2240	35840	1016.4	1016363	268.352	1	1.016	1.12
2204.6	35273	1000	1000000	264.11	0.9842	1	1.1023
2000	32000	907.03	909090.9	239.7	0.892857	0.907194	1

DENSITY CONVERSION CHART			
lb/ft ³	gm/cm ³	kg/m ³	lb/in ³
1	0.016018	16.0184	0.000578
62.43	1	1000	0.03613
0.06243	0.001	1	0.000036
1728	27.68	27679.8	1