



Pressure Sensor Technical Information

Sensor Fill Volumes

-Red Valve designed the Series 40 and 42 Pressure Sensors to have a minimum volume of sensing liquid in order to eliminate inaccuracy due to temperature fluctuation. This results in a higher degree of accuracy since the unit is not subject to false increased pressure readings due to thermal expansion of the sensing liquid.



Fill Liquid

50/50 mixture of Ethylene Glycol and Water
Other sensing liquids are available as follows:

- ▶ Vegetable Oil
For food applications. + 230°F
- ▶ Silicone Oil
DOW-200 Silicone Oil is offered for higher temperature applications. + 450°F
- ▶ Distilled Water
Is available when Ethylene Glycol/Water mixture is considered hazardous. + 200°F

Fluid Displacement

There are various styles of pressure switches and other types of instrumentation that are bellows actuated. These gauges require a larger volume of liquid to actuate the full range of the instrument. When specifying Bellows type instrumentation, or when mounting 2 instruments on a Series 40 Sensor, please review the below chart to insure that there is enough fluid displacement in the sensor to actuate the bellows instruments, or the dual instruments.

Important! No more than two instruments can be mounted to the Series 40. Only one instrument can be mounted to the Series 42.

Fill Volume

The following is a chart indicating the fill volume for various size Pressure Sensors.

SERIES 40

SIZE (in.)	FLUID VOL. (cu. in.)	FLUID VOL. (cu. cm.)
1"	0.777	12.74
1-1/2"	0.597	9.78
2"	0.754	12.36
2-1/2"	0.912	14.95
3"	1.732	28.39
4"	2.703	44.30
5"	3.276	53.69
6"	3.924	64.32
8"	3.556	58.29
10"	5.278	86.50
12"	10.29	168.7
14"	11.96	196.0
16"	14.26	233.7
18"	16.02	262.6
20"	18.00	295.1
24"	22.04	361.3

SERIES 42

SIZE (in.)	FLUID VOL. (cu. in.)	FLUID VOL. (cu. cm.)
3/8"	0.390	6.40
1/2"	0.443	7.26
1"	0.607	9.94
1-1/2"	0.835	13.70
2"	1.603	26.30

*Above volumes do not include volume required for gauge or adjoining piping.

*Add 1/4" cu. in. displacement for gauge fill.

*Add approximately 2 cu. in. for pipe fill if additional instrumentation is specified.