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Units of Measurement for Pressure Devices

The SI unit for pressure is the Pascal (Pa). This name for the unit of pressure was added in 1971, before that the pressure was expressed as a value in newtons per square metre.

In the UK and Europe pressure is more commonly measured based on the metric system, using a unit of bar. 1 Bar is 100000 Pa or 100 kPa. In the USA and other parts of the world a common pressure measurement is by using a scale that reads pounds per square inch (psi).

Many of the pressure gauges that Instruments to Industry manufacture have dual scale for both psi and bar so they can be used globally. In electronic instruments such as digital pressure gauges the different pressure scales are usually selectable on the front panel, in this case the electronics will take care of the conversion between units.

Many other process industries also use inches of water (inH₂O). Low pressures are often measured in inches of water, which is the pressure produced by a column of water, one inch square, with a specified height. One inch of water column is equal to a pressure of approximately 1/28 pound per square inch (psi). As one psi is equal to 27.71 inches of water column; this scale is most often used to measure low pressures under one psi.

Below is a handy pressure conversion chart that can be used to convert between units of pressure measurement.

psi	atms.	Ft.Hd.H ₂ O	in H ₂ O	Kg/cm ²	Meters H ₂ O	in Hg.	mm.Hg.	Cm.Hg.	bar	mbar	kPa
1	0.068	2.31	27.72	0.0703	0.704	2.043	51.884	5.188	0.069	68.947	6.895
14.696	1	33.659	407.513	1.033	10.351	30.019	762.284	76.284	1.0113	1013	101.325
0.433	0.029	1	12	0.03	0.305	0.884	22.452	2.245	0.03	29.837	2.984
0.036	0.0025	0.833	1	0.0025	0.025	0.074	1.871	0.187	0.0025	2.486	0.249
14.223	0.968	32.867	394.408	1	10.018	29.054	737.959	73.796	0.981	980.662	98.066
1.422	0.097	3.287	39.37	0.099	1	2.905	73.796	7.379	0.098	98.066	9.807
0.489	0.033	1.131	13.575	0.034	0.345	1	25.4	2.54	0.034	33.753	3.375
0.019	0.0013	0.045	0.534	0.0014	0.0136	0.039	1	0.1	0.001	1.329	0.133
0.193	0.0131	0.445	5.34	0.014	0.136	0.393	10	1	0.0133	13.29	1.328
14.503	0.0131	33.514	402.164	1.02	10.211	29.625	752.47	75.247	1	1000	100
0.014	0.987	0.033	0.402	0.001	0.0102	0.029	0.752	0.075	0.001	1	0.1
0.145	0.0009	0.335	4.021	0.01	0.102	0.296	7.525	0.0752	0.01	10	1