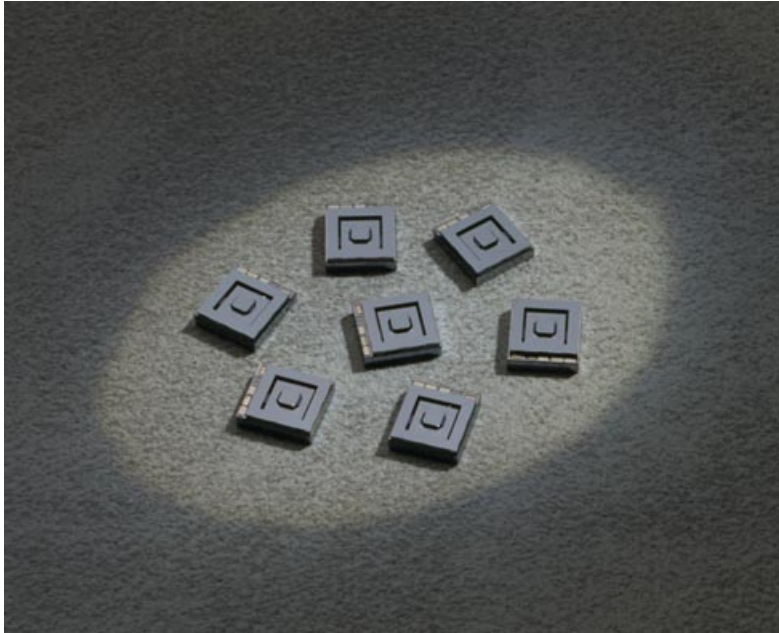


Vaisala BAROCAP® for barometric pressure measurement



The Vaisala BAROCAP® Sensor is a capacitive, absolute pressure sensor manufactured by silicon micromachining. The sensor has excellent hysteresis and repeatability characteristics, as well as outstanding temperature and long-term stability.

Operating principle

When the pressure changes, the silicon diaphragm bends and changes the height of the vacuum gap in the sensor. This changes the capacitance of the sensor, which is measured and converted into a pressure reading.

The Vaisala BAROCAP® Sensor combines two powerful techniques: the use of single crystal silicon as sensor material, and the capacitive measurement principle. Silicon offers good elasticity, low hysteresis, excellent repeatability, small temperature dependence and superior long-term stability. Thanks to the capacitive pressure sensor structure, the sensor has a wide dynamic range and a built-in overpressure blocking mechanism.

Features/Benefits

- Silicon-based BAROCAP® Sensor, a capacitive absolute pressure sensor
- High accuracy
- Excellent hysteresis and repeatability characteristics
- Outstanding temperature and long-term stability

Applications

Vaisala's barometers offer excellent performance in a variety of applications. In meteorology, barometric pressure is measured in weather stations, data buoys, GPS meteorology and other environmental data logging. In industry barometric pressure data is needed for pressure sensitive industrial equipment, such as laser interferometers and lithography systems, aircraft applications and engine test benches. In actual metrology typical applications include laboratory pressure standard measurements and calibration laboratory monitoring.

Pressure Conversion Chart

Multiplication factors

Note: conversions from mmHg and inHg are defined at 0 °C (32 °F) temperature and for mmH₂O and inH₂O at +4 °C (39.2 °F) temperature.

		FROM									
		hPa mbar	Pa N/m ²	mmHg Torr	inHg	mmH ₂ O	inH ₂ O	atm	at	bar	psi
TO	hPa mbar	1	0.01	1.333224	33.86388	0.09806650	2.490889	1013.25	980.665	1000	68.94757
	Pa N/m ²	100	1	133.3224	3386.388	9.806650	249.0889	101325	98066.5	100000	6894.757
	mmHg Torr	0.7500617	0.0075006	1	24.40000	0.07355592	1.8683	760	735.559	750.0617	51.71493
	inHg	0.02952999	0.00029530	0.03937008	1	0.002895903	0.073556	29.921	28.959	29.52999	2.036021
	mmH ₂ O	10.19716	0.1019716	13.59510	345.3155	1	25.40000	10332.3	10000	10197.16	703.0696
	inH ₂ O	0.40147	0.0040147	0.53525	13.596	0.039372	1	406.79	393.71	401.463	27.6799
	atm	0.00098692	0.000009869	0.00131579	0.033422	0.000096788	0.0024583	1	0.967841	0.98692	0.068046
	at	0.0010197	0.00001020	0.0013595	0.034532	0.0001	0.0025399	1.03323	1	1.01972	0.070307
	bar	0.001	0.00001	0.001333224	0.03386388	0.00009807	0.0024909	1.01325	0.980665	1	0.06894757
	psi	0.01450377	0.00014504	0.01933678	0.4911541	0.001422334	0.036127	14.6962	14.2233	14.50377	1

Example: 1013.25 hPa/mbar = 1013.25 x 0.02952999 inHg = 29.9213 inHg

VAISALA

For more information, visit
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