

SPECIFICATIONS

BP20 Barometric Pressure Sensor

FEATURES

- High level linear voltage output
- 0 to 5 V span output



The NRG #BP20 barometric pressure sensor is a micro-machined absolute pressure sensor which provides a high level voltage output signal that is proportional to absolute pressure. It includes built-in temperature compensation, linearization, and an output amplifier.

Its low cost and rugged PVC enclosure make the BP-20 ideal for collecting absolute pressure data at remote sites.

SPECIFICATIONS

Description	Sensor type	Micro-machined integrated circuit absolute pressure sensor
	Applications	<ul style="list-style-type: none"> • wind resource assessment • meteorological studies • environmental monitoring
	Sensor range	15 kPa to 115 kPa (4.43 inches to 34.0 inches Hg)
	Instrument compatibility	• NRG Symphonie equipped with a BP SCM + any iPack
Output signal	Signal type	linear analog voltage
	Transfer function	Absolute Pressure in kPa = (Voltage x 21.79) + 10.55 typical
	Accuracy	+/- 1.5 kPa max. uncorrected offset (+/- 0.443 inches Hg)
	Calibration	calibration sheet included with each sensor specifies offset correction
	Turn on time	15 ms
Power requirements	Supply voltage	7 V to 35 V DC
	Supply current	15 mA max. (8 mA typical)
Installation	Mounting	mounts directly to tower or inside steel shelter box with hose clamps (included)
	Tools required	8mm (5/16 inch) nut driver or flat blade screwdriver
Physical	Connections	wire leads, 3 conductor shielded cable: <ul style="list-style-type: none"> • Red: sensor power • White: output signal • Black: sensor ground • Shield wire: to earth ground



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	Cable length	<ul style="list-style-type: none"> • 1.5 m (5 feet) • cable diameter 4.8 mm (3/16 inches)
	Weight	0.1 kg (0.2 pounds)
	Dimensions	<ul style="list-style-type: none"> • 57 mm (2.25 inches) diameter • 112 mm (4.4 inches) length (including cable bushing)
Materials	Cable	3 conductor 22 AWG, with overall foil shield and drain wire, chrome PVC jacket
	Enclosure	weatherproof PVC

ALTITUDE CORRECTION TABLE

Use the table below to determine the additional offset to be used in barometric pressure calculations. For example, if your barometric pressure sensor is installed at a site 152 meters above sea level, you will need to add 19.2 mb to the standard offset of 650 mb, for a total offset of 669.2 mb.

ALTITUDE (FEET)	ALTITUDE (METERS)	DELTA P (mb)	DELTA P (inHg)
0	0	0.00	0.000
100	30	3.9	0.115
200	61	7.7	0.229
300	91	11.6	0.343
400	122	15.4	0.456
500	152	19.2	0.569
600	183	23	0.681
700	213	26.8	0.793
800	244	30.6	0.905
900	274	34.3	1.016
1000	305	38	1.127
1100	335	41.8	1.237
1200	366	45.5	1.347
1300	396	49.2	1.456
1400	427	52.9	1.565
1500	457	56.5	1.674
1600	488	60.2	1.782
1700	518	63.8	1.890
1800	549	67.4	1.997
1900	579	71.1	2.104
2000	610	74.7	2.211
2100	640	78.2	2.317
2200	671	81.8	2.423
2300	701	85.4	2.528
2400	732	88.9	2.633
2500	762	92.4	2.738
2600	792	96	2.842



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2700	823	99.5	2.946
2800	853	103	3.049
2900	884	106.4	3.152
3000	914	109.9	3.254
3100	945	113.3	3.357
3200	975	116.8	3.458
3300	1006	120.2	3.560
3400	1036	123.6	3.661
3500	1067	127	3.761
3600	1097	130.4	3.861
3700	1128	133.8	3.961
3800	1158	137.1	4.061
3900	1189	140.5	4.160
4000	1219	143.8	4.258
4100	1250	147.1	4.357
4200	1280	150.4	4.455
4300	1311	153.7	4.552
4400	1341	157.0	4.649
4500	1372	160.3	4.746
4600	1402	163.5	4.843
4700	1433	166.8	4.939
4800	1463	170	5.034
4900	1494	173.2	5.130
5000	1524	176.4	5.225
5100	1554	179.6	5.319
5200	1585	182.8	5.414
5300	1615	186.0	5.507
5400	1646	189.1	5.601
5500	1676	192.3	5.694
5600	1707	195.4	5.787
5700	1737	198.5	5.879
5800	1768	201.6	5.971
5900	1798	204.7	6.063
6000	1829	207.8	6.155

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