

PTB210 Series Digital Barometers

APPLICATIONS

- Weather stations
- Data buoys and ships
- Airports
- Agrology
- Laser interferometers
- Engine test benches

SEVERAL PRESSURE RANGES

The PTB210 Series Digital Barometers are designed for various pressure ranges. The barometers are available with two basic configurations: serial output for 500...1100 hPa and 50...1300 hPa and analog output with different scalings between 500...1300 hPa for 0...5 V and 0...2.5 V.

FOR HARSH ENVIRONMENTS

The PTB210 Series Barometers offer an excellent solution for outdoor installations. They are designed to operate in a wide temperature range, and the electronics housing provides IP65 standardized protection against sprayed water. The rugged corrosion-resistant housing in combination with the PTB210's compact size facilitates easy installation and insures a long lifetime of service.

The PTB210 can be directly integrated with Vaisala's static pressure head. This combination offers accurate measurement in all wind conditions.

ACCURATE AND STABLE MEASUREMENT

All the PTB210 Barometers are digitally adjusted and calibrated by using electronic working standards. A higher



accuracy barometer, that is fine tuned and calibrated against a deadweight tester, is available for the 500...1100 hPa pressure range.

The PTB210 Barometers use the BAROCAP[®] Silicon Capacitive Absolute Pressure Sensor developed by Vaisala. The BAROCAP[®] Sensor provides excellent hysteresis and repeatability characteristics and has an outstanding temperature and long-term stability. All PTB210 Barometers are delivered with a factory calibration certificate.



TECHNICAL DATA PTB210

OPERATING RANGE

Pressure range (order specified)	
serial output	500...1100 hPa 50...1300 hPa
analog output	500...1300 hPa 800...1060 hPa 600...1060 hPa 900...1100 hPa
Operating temperature range	-40...+60°C
Humidity range	non condensing

ACCURACY

Serial output (units in hPa)

Pressure range	500...1100		50...1300
	Class A	Class B	
Non linearity*	± 0.10	± 0.15	± 0.20
Hysteresis*	± 0.05	± 0.05	± 0.10
Repeatability*	± 0.05	± 0.05	± 0.10
Calibration uncertainty**	± 0.07	± 0.15	± 0.20
Total accuracy (20°C)***	± 0.15	± 0.20	± 0.35
Temperature dependence (-40...+60°C)****	± 0.20	± 0.20	± 0.40
Total accuracy*** (-40...+60°C)	± 0.25	± 0.30	± 0.50
Long term stability (hPa/year)	± 0.10	± 0.10	± 0.20

Analog output

Non linearity*	± 0.20 hPa
Hysteresis*	± 0.05 hPa
Repeatability*	± 0.05 hPa
Calibration uncertainty**	± 0.15 hPa
Total accuracy (20°C)***	± 0.30 hPa
Temperature dependence (-40...+60°C)****	± 0.50 hPa
Total accuracy*** (-40...+60°C)	± 0.60 hPa
Long term stability	± 0.10 hPa/year

* Defined as the ±2 standard deviation limits of end-point non-linearity, hysteresis error or repeatability error.

** Defined as ±2 standard deviation limits of inaccuracy of the working standard including traceability to NIST.

*** Defined as the root sum of the squares (RSS) of end-point non-linearity, hysteresis error, repeatability error and calibration uncertainty at room temperature.

**** Defined as ±2 standard deviation limits of temperature dependence over the operating temperature range.

GENERAL

(* Factory setting)

Serial output

Current consumption	
normal mode	< 15 mA*
power down mode	< 0.8 mA
shutdown mode	0.2 mA
Shutdown	ON/OFF
Settling time at power up	2 s

Serial I/O (factory setting *)	RS232C
	RS232C /TTL (optional)
	RS485, non isolated (optional)
parity	none, even*, odd
data bits	7*, 8
stop bits	1*, 2
Baud rate	1200, 2400, 4800, 9600*, 19200
Response time	1 s*
Resolution	0.01 hPa (1 measurement/s) 0.05 hPa (20 measurements/s)

Analog output

Outputs	0...5 VDC, 0...2.5 VDC (order specified)
Current consumption	
normal mode	< 8 mA
shutdown mode	0.2 mA
Shutdown	ON/OFF
Response time	500 ms
Resolution	300 µV
Measurement rate	3 measurement/s

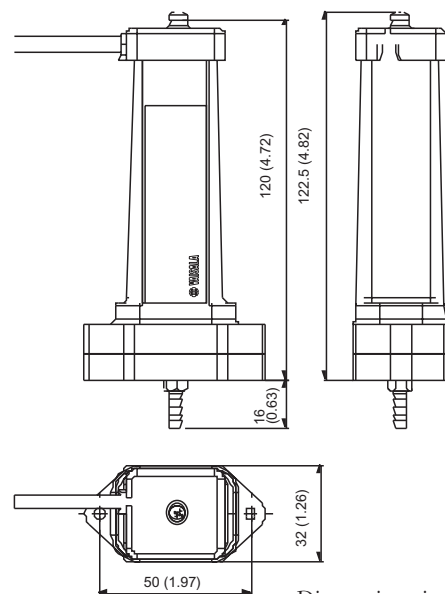
All models

Supply voltage (reverse polarity protected)	8...18 VDC
Max. pressure	5 000 hPa abs.
Pressure connector	M5 (10-32) internal thread
Pressure fitting	barbed fitting for 1/8" I.D. tubing
Housing	
electronics	IP65
sensor	IP53
Housing material	PC plastic
Supply/output cable length	1, 2, 3, 5 or 10 m
Weight	
Instrument	110 g
Cable	28 g/m

Complies with EMC standard EN61326-1:1997 + Am1:1998; Generic Environment.

BAROCAP® is a registered trademark of Vaisala.
Specifications subject to change without prior notice.

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Dimensions in mm (inch)



Vaisala Oyj
P.O. Box 26
FIN-00421 Helsinki
FINLAND

Tel: (+358-9) 89 491
Fax: (+358-9) 8949 2485

E-mail: industrialsales@vaisala.com
Homepage: www.vaisala.com