

Calibration Report: Pressure Transmitter S/N: P2110015

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Summary

Calibration date: 11 Aug 2010

Next Calibration date: 11 Aug 2011

A collection, analysis and calibration of data from a Pressure Transmitter, S/N: P2110015, has been completed. The calibration was performed by Vaisala, Inc., the manufacturer of the instrument. These data were collected by Vaisala on 11 August 2010.

Model: PTB101B (Vaisala)
Serial Number: P2110015

The test data presented in data table format display the pressure transmitter, before adjustment, to be well off by over 7mb to the reference pressure results. After adjustment, the pressure sensor became more inline with the reference. The pressure readings at COVE historically range between 950-1060mb. Three reference pressure points in this range are listed on the following calibration documents and will therefore be used to determine the offset. The offset for the three pressure points, after adjustment, concludes to be -0.13mb. The accuracy for the Model PTB101B pressure transmitters is +/- 0.5mb.

The following pages provide more detail into the calibration process and results.

Application: Standard Campbell data logger program for Vaisala pressure transmitter.

CALIBRATION CERTIFICATE

before adjustment

Customer NASA
Instrument PTB101B Analog barometer
Serial number P2110015
Manufacturer Vaisala Oyj, Finland
Calibration date 11th August 2010
Test procedure doc210609a

This instrument has been calibrated against a Vaisala PTB220 factory working standard which has been calibrated against a Ruska 2465 pressure balance traceable to the National Institute of Standards and Technology (NIST, USA) at Vaisala Measurement Standards Laboratory (MSL). Vaisala MSL has been accredited by the Finnish Accreditation System (FINAS) according to ISO/IEC 17025 standard.

Calibration results

Reference pressure hPa	Observed pressure hPa	Correction* hPa	Uncertainty** hPa
619.8	627.4	-7.6	± 0.15
699.7	707.5	-7.8	± 0.15
799.6	807.3	-7.7	± 0.15
849.7	857.3	-7.6	± 0.15
899.7	907.2	-7.5	± 0.15
949.7	957.1	-7.4	± 0.15
999.7	1007.0	-7.3	± 0.15
1059.6	1066.9	-7.3	± 0.15

*To obtain the true pressure, add the correction to the barometer reading. Interpolated corrections may be used at intermediate readings of the scale of the barometer.

**The calibration uncertainty given at 95 % confidence level, $k=2$

Equipment used in calibration

Type	Serial number	Calibration date	Certificate number
Vaisala PTB220	X2550004	2009-11-23	K008-S02859
Vaisala PTB220	X2550002	2009-11-21	K008-S02860
HP 34970A	MY44019078	2009-08-21	220493

Ambient conditions / Humidity $57 \pm 5\%$ RH, Temperature $22 \pm 1\text{ }^\circ\text{C}$, Pressure $1009 \pm 1\text{ hPa}$

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CALIBRATION CERTIFICATE

after adjustment

Customer NASA
Instrument PTB101B Analog barometer
Serial number P2110015
Manufacturer Vaisala Oyj, Finland
Calibration date 11th August 2010
Test procedure doc210609a

This instrument has been calibrated against a Vaisala PTB220 factory working standard which has been calibrated against a Ruska 2465 pressure balance traceable to the National Institute of Standards and Technology (NIST, USA) at Vaisala Measurement Standards Laboratory (MSL). Vaisala MSL has been accredited by the Finnish Accreditation System (FINAS) according to ISO/IEC 17025 standard.

At the time of shipment, the instrument described above met its operating specifications.

Calibration results

Reference pressure hPa	Observed pressure hPa	Correction* hPa	Uncertainty** hPa
619.8	619.9	-0.1	± 0.15
699.8	700.2	-0.4	± 0.15
799.8	800.2	-0.4	± 0.15
849.9	850.2	-0.3	± 0.15
899.9	900.1	-0.2	± 0.15
950.0	950.1	-0.1	± 0.15
999.8	999.9	-0.1	± 0.15
1059.9	1060.1	-0.2	± 0.15

*To obtain the true pressure, add the correction to the barometer reading. Interpolated corrections may be used at intermediate readings of the scale of the barometer.

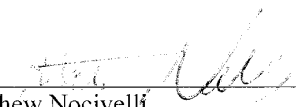
**The calibration uncertainty given at 95 % confidence level, $k = 2$

** - 0.15 offset*

Equipment used in calibration

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Vaisala PTB220	X2550002	2009-11-21	K008-S02860
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Ambient conditions / Humidity 55 ± 5 %RH, Temperature 22 ± 1 °C, Pressure 1009 ± 1 hPa


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