

CERTIFICATE OF CALIBRATION no K008-SAMPLE

Customer VAISALA OYJ
Vanha Nurmijärventie 21
01670 Vantaa
FINLAND

Item Barometer

Manufacturer Vaisala Oyj

Model PTB110

Serial number PXXXXXXX

Instrument number

Calibration performed On July 02, 2018

Date July 03, 2018

Signature



Ilkka Kotamäki
Technical Manager

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Documents attached -

NOTES Barometer was adjusted.

Conditions when received Reported in Service Report.

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PRESSURE CALIBRATION

The analog output of above described Barometer was calibrated from 810 to 1098 hPa absolute pressure in the Measurement Standards Laboratory (MSL) of Vaisala Oyj on July 02, 2018.

The measurement results were obtained from the measured values or the results were calculated from the measured values by using adjustment coefficients.

From the measured voltage values were calculated pressure values using equatuion 1:

$$p \text{ [hPa]} = 800 \text{ hPa} + U_{\text{output}} \cdot (300 \text{ hPa} / 5 \text{ V}), \text{ where } U_{\text{output}} \text{ is measured voltage [V].} \quad (1)$$

Before measurements the barometer was allowed to stabilize to the conditions of the laboratory for at least 1 hour with power supply on.

The used pressure transmitting medium was air and/or nitrogen.

REFERENCES USED DURING PRESSURE CALIBRATION

DHI PPC3 Transfer Standard, sno 723, due date 2018-09.

Agilent Agilent 34970A DMM, sno MY44016640, due date 2018-12.

TRACEABILITY

The measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST in USA or equivalent) or accredited calibration laboratories.

CALIBRATION PROCEDURE

DOC236240

UNCERTAINTY

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-4/02.

The measurement uncertainty represents the situation at the time and conditions of calibration. When using the UUC at different conditions and at different time the effect of the conditions and stability of the UUC shall be evaluated separately.

The measurement results and uncertainty are representing the measurement points only.

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RESULTS

The reference and the reading values presented in table are averages of ten independent observations.
The results are averages of two pressure cycles.

Table 1. Final results

Reference [hPa]	Reading U_{Output} [V]	As found Calculated reading p [hPa]	Correction [hPa]	Reading U_{Output} [V]	As left Calculated reading p [hPa]	Correction [hPa]	Uncertainty [hPa]
1097,99	4,9678	1098,1	-0,1	4,9665	1098,0	0,0	0,2
1050,03	4,1683	1050,1	-0,1	4,1671	1050,0	0,0	0,2
1000,00	3,3344	1000,1	-0,1	3,3333	1000,0	0,0	0,2
950,03	2,5013	950,1	-0,1	2,5004	950,0	0,0	0,2
900,01	1,6677	900,0	0,0	1,6669	900,0	0,0	0,2
850,04	0,8346	850,0	0,0	0,8339	850,0	0,0	0,2
810,04	0,1678	810,0	0,0	0,1672	810,0	0,0	0,2

The correction shall be added algebraically to the reading.

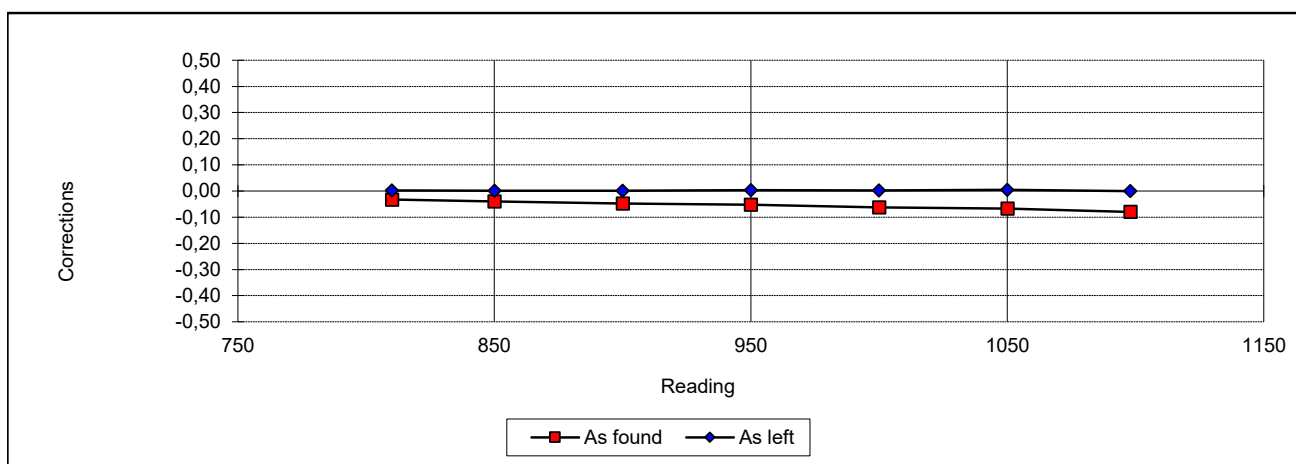


Figure 1. Final results [hPa]

CONDITIONS

Temperature 23 °C ± 3 °C
Humidity 35 %rh ± 30 %rh