VAISALA Certificate of Calibration

Certificate #:	231206-PTB330-G1610001
Calibration Date:	December 6, 2023
Type:	Vaisala Pressure Transmitter
Model #:	PTB330
Serial #:	G1610001
Case #:	466496

ACCREDITED

Calibration - Certificate No: 2083.01

Customer: NOAA Ship Bell M Shimada
2002 Southeast Marine Science Drive
Newport, OR 97365

Condition: The instrument was operational upon receipt.

Action Taken: The instrument was adjusted and calibrated.

Due Date: * December 6, 2025

P Calibrated By:

Matthew Nocivelli
Calibration Technician

Approved By:

Daniel Soave
Quality Manager

The measurement results on the certificate are traceable to the SI via NIST or another National Metrology Institute. This certificate may only be reproduced in full, except with the prior approval of the laboratory. The certificate and all measurements (unless otherwise noted) comply with the requirements of ISO/IEC 17025:2017.

Special Limitations: None.

*Any due date given is based on a customer provided calibration interval. A number of factors may cause drift prior to the due date. Monitor all devices and calibrate when measurement error is suspected.

Certificate printed December 07, 2023.

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10-D Gill Street, Woburn, MA 01801, USA
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helpdesk@vaisala.com | www.vaisala.com

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Accredited Pressure Calibration

Procedure #: PI215589 Rev. B
Instrument Range: 500 to 1100 hPa
Lab Environment: Relative Humidity 40.0 %rh, Temperature 22.0 °C

As Found Data

Pressure					
Reference [hPa]	Reading [hPa]	Error [hPa]	Uncertainty [hPa]	Specification [hPa]	Note(s)
500.17	500.28	0.11	±0.07	±0.14	-
550.67	550.77	0.10	±0.07	±0.14	-
650.00	650.10	0.10	±0.07	±0.14	-
749.99	750.08	0.09	±0.07	±0.14	-
849.99	850.07	0.08	±0.07	±0.14	-
949.99	950.07	0.08	±0.07	±0.14	-
1000.00	1000.07	0.07	±0.07	±0.14	-
1050.00	1050.07	0.07	±0.07	±0.14	-
1099.99	1100.06	0.07	±0.07	±0.14	-

Any error greater than the specification is noted with *

As Left Data

Pressure					
Reference [hPa]	Reading [hPa]	Error [hPa]	Uncertainty [hPa]	Acceptance Limit [hPa]	Pass/Fail
500.35	500.36	0.01	±0.07	±0.05	PASS
550.63	550.62	-0.01	±0.07	±0.05	PASS
650.00	650.00	0.00	±0.07	±0.05	PASS
750.00	750.00	0.00	±0.07	±0.05	PASS
850.00	850.00	0.00	±0.07	±0.05	PASS
950.00	950.00	0.00	±0.07	±0.05	PASS
1000.01	1000.01	0.00	±0.07	±0.05	PASS
1050.00	1050.00	0.00	±0.07	±0.05	PASS
1100.00	1100.00	0.00	±0.07	±0.05	PASS

Pass: Error within or equal to Acceptance Limit, Fail: Error outside Acceptance Limit

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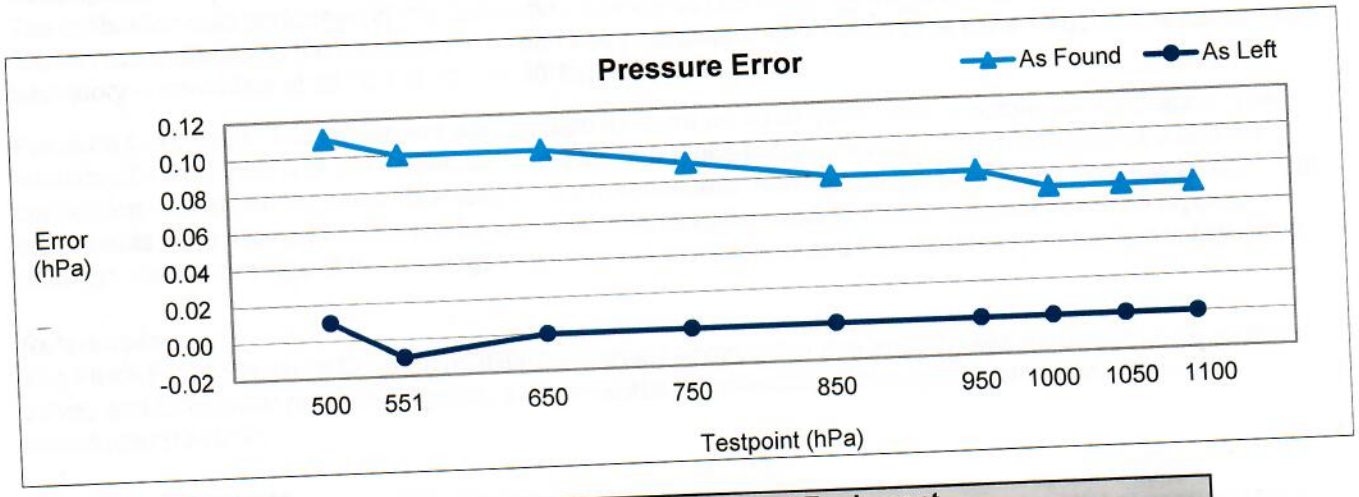
Accredited Pressure Calibration



Reference Standards and Measurement Equipment				
Model	**Serial Number**	**Asset Number**	**Calibration**	**Due Date**
Fluke PPC4 A100Kp	439	PA-13451	Aug. 18, 2023	May. 31, 2024
Vaisala Shunt Resistor	N/A	ES-13737	Mar. 28, 2023	Mar. 31, 2024
Agilent 34970A	MY44010659	EM-12330	Feb. 09, 2023	Feb. 29, 2024

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Description

The calibration was performed in the Calibration Standards Laboratory of Vaisala, Inc. The instrument was first allowed to equilibrate to the laboratory environmental conditions for a period of at least 8 hours. The calibration laboratory is controlled at 22 °C ± 3 °C and 40 %rh ± 20 %rh.

Pressure Calibration: The instrument was allowed to warm up for at least 2 hours before the calibration. The instrument's input port was connected to the output of a Fluke PPC4 Pressure Controller/Calibrator and the connection was tested for leaks. The testpoints are measured from high to low then again from low to high. The instruments were allowed to stabilize for at least 2 minutes after each testpoint was reached. The reported readings are the average of the readings from the high to low cycle and the readings from the low to high cycle.

References

The Fluke PPC4 Pressure Controller/Calibrator digitally controls the pneumatic pressure output using solenoid valves and differential pressure regulators. It measures the pressure with a quartz reference pressure transducter (Q-RPT).

Measurement results

At least ten consecutive pairs of reference and unit under test measurements were recorded at each testpoint. Each measurement result on the certificate is the average of this set of readings.

Statement of Conformity Decision Rule

The statement of conformity is based on simple acceptance, whether the calibration result is within or outside the manufacturer's specification/acceptance limits. The calibration uncertainty is not taken into account in the statement of conformity. The probability of accepting a non-conforming result or rejecting a conforming result can be as large as 50% with this acceptance rule when the calibration result is close to the acceptance limit.

Uncertainty

The reported expanded uncertainty of the measurement is stated as the standard uncertainty of the measurement multiplied by the coverage factor of k=2, which corresponds to a coverage probability of approximately 95%. The standard uncertainty of the measurement has been determined in accordance with the ISO Guide to the Expression of Uncertainty in Measurement.

The calibration uncertainty represents the situation at the time and conditions of calibration. When using the instrument at different conditions and at a different time the conditions and stability of the instrument shall be evaluated separately. The calibration results and the statement of conformity of specification/acceptance limit relate only to the calibrated instrument and the calibration points.

DOC228428 Rev. K

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