

**Certificate #:** 2022065-150902-PTU307-J1620009  
**Calibration Date:** September 2, 2015  
**Type:** Vaisala Pressure, RH & Temp. Transmitter  
**Model #:** PTU307  
**Serial #:** J1620009  
**SR #:** 318824

**Customer:** University of Alaska  
Seward Marine Center/SFOS  
201 Railway Ave  
Attn: R/V SIKULIAQ  
Seward, AK 99664

**Condition:** The instrument was operational upon receipt. The 'As Found' RH readings were out of tolerance. The RH sensor was contaminated.

**Action Taken:** The RH and temperature sensors and the filter were replaced. The instrument was adjusted and calibrated.

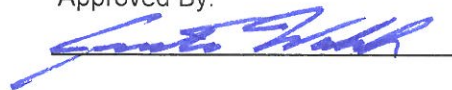
**Due Date: \*** September 2, 2016

RH Calibrated By:



Matthew Nocivelli  
Calibration Technician

Approved By:



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The measurement results on the certificate are traceable to national or international standards. The results of this calibration relate only to the items being calibrated. This certificate may not be reproduced, except in full, without the prior written approval of the issuing laboratory. Vaisala is ISO 9001:2008 certified. Vaisala's calibration system complies with the requirements of ANSI/NCSL Z540-1-1994.

The calibration laboratory is controlled at 22 °C ± 3 °C and 40 %RH ± 20 %RH.

**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.

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## Relative Humidity Calibration

**Procedure #:** PI213878 Rev. I  
**Instrument Range:** 0 to 100 %RH  
**Lab Environment:** Relative Humidity 49.0 %RH, Temperature 22.7 °C

### As Found Data

Out Of Tolerance As Received: YES

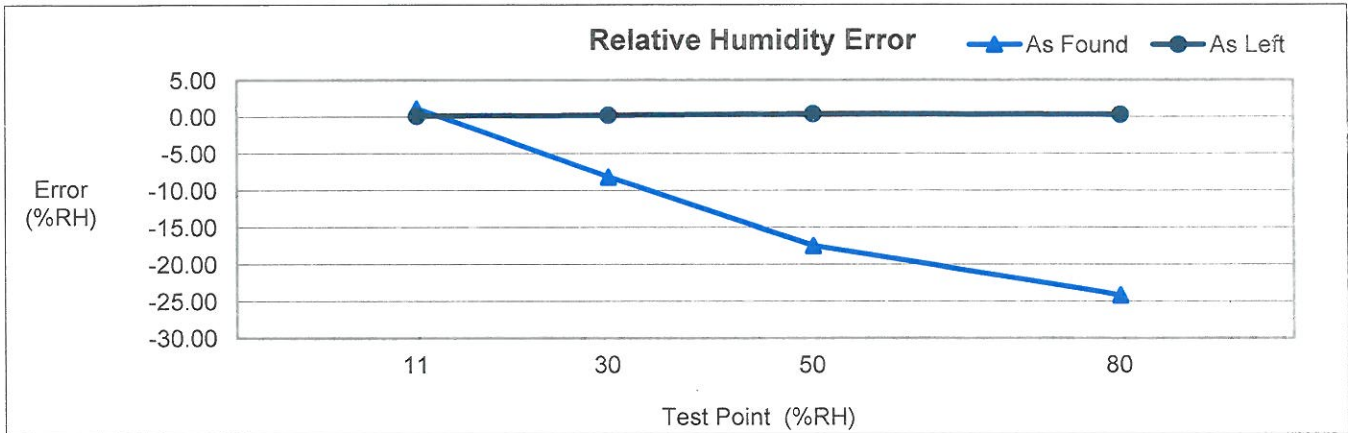
Relative Humidity, %RH				
Reference	Unit Under Test	Error	± Tolerance	± Uncertainty
11.49	12.60	1.11	1.00	0.42
30.09	21.90	-8.19	1.00	0.60
50.10	32.60	-17.50	1.00	0.77
80.08	55.90	-24.18	1.00	0.79
Temperature, °C				
Reference	Unit Under Test	Error	± Tolerance	± Uncertainty
21.83	21.80	-0.03	0.20	0.13

### As Left Data

Relative Humidity, %RH				
Reference	Unit Under Test	Error	± Tolerance	± Uncertainty
11.50	11.60	0.10	1.00	0.42
30.09	30.30	0.21	1.00	0.60
50.10	50.50	0.40	1.00	0.77
80.09	80.40	0.31	1.00	0.79
Temperature, °C				
Reference	Unit Under Test	Error	± Tolerance	± Uncertainty
22.41	22.40	-0.01	0.21	0.13

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## Relative Humidity Calibration



Reference Standards Calibration Information				
Model	Serial Number	Asset Number	Calibration Date	Due Date
Thunder Scientific 2500	1311987	5011-0079	Jun. 02, 2015	Dec. 02, 2015



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**Description**

The calibration was performed in the Standard Laboratory of Vaisala, Inc. The instrument was first allowed to equilibrate to the laboratory environmental conditions for a period of at least 8 hours.

Relative Humidity Calibration: The sensor of the instrument was placed in the chamber of a Thunder Scientific 2500. The instrument was allowed to stabilize for at least 30 minutes at each testpoint.

**References**

The Thunder Scientific 1200/2500 Two-Pressure Humidity Generator saturates a continuous stream of air with water vapor at a controlled pressure and temperature. The saturated high-pressure air then passes through an expansion valve to generate a specific humidity at the chamber pressure and temperature. The generator is traceable to NIST via Thunder Scientific or an MBW 373LHX chilled mirror hygrometer.

**In or Out of Tolerance Decision Rule**

Out of tolerance conditions are determined by the product specification only. The calibration uncertainty is not tied in with the instrument's accuracy.

**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.

DOC228428 Rev. B

## CALIBRATION CERTIFICATE

### Before adjustment

**Customer** University of Alaska Seward Marine Center/SFOS  
**Instrument** PTU300(500-1100) Digital Barometer  
**Serial number** J1620009  
**Manufacturer** Vaisala Oyj, Finland  
**Calibration date** 2nd September 2015  
**Due date** 2nd September 2016

The above instrument was calibrated by comparing the readings of the instrument to the factory working standard of Vaisala.

The pressure readings of the factory working standard have been calibrated at an ISO/IEC 17025 accredited calibration laboratory using working standards traceable to the SI through a recognized national measurement institute.

#### Calibration results

Reference hPa	Observed hPa	Correction* hPa
500.08	500.11	-0.03
550.07	550.11	-0.04
650.05	650.08	-0.03
750.04	750.06	-0.02
850.05	850.08	-0.03
950.03	950.06	-0.03
1000.02	1000.05	-0.03
1050.02	1050.05	-0.03
1100.03	1100.07	-0.04

\*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.

#### Equipment used in calibration

Type	Serial number	Calibration date	Certificate number
PPC4	439	2015-06-03	1500169247/1500169249

#### Uncertainty ( 95 % confidence level, k=2)

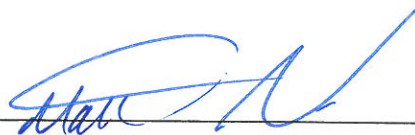
Pressure ± 0.07 hPa

#### Ambient Conditions

Humidity 45 %RH ± 5 %RH  
 Temperature 23 °C ± 1 °C  
 Pressure 1012 hPa ± 1 hPa



Approved By



Technical Operator



**CALIBRATION CERTIFICATE****After adjustment**

**Customer** University of Alaska Seward Marine Center/SFOS  
**Instrument** PTU300(500-1100) Digital Barometer  
**Serial number** J1620009  
**Manufacturer** Vaisala Oyj, Finland  
**Calibration date** 2nd September 2015  
**Due date** 2nd September 2016

The above instrument was calibrated by comparing the readings of the instrument to the factory working standard of Vaisala.

The pressure readings of the factory working standard have been calibrated at an ISO/IEC 17025 accredited calibration laboratory using working standards traceable to the SI through a recognized national measurement institute.

**Calibration results**

Reference hPa	Observed hPa	Correction* hPa	Acceptance limit hPa
500.10	500.10	0.00	± 0.05
550.08	550.09	-0.01	± 0.05
650.08	650.08	0.00	± 0.05
750.06	750.05	0.01	± 0.05
850.04	850.04	0.00	± 0.05
950.02	950.02	0.00	± 0.05
1000.01	1000.01	0.00	± 0.05
1050.00	1050.00	0.00	± 0.05
1100.01	1100.01	0.00	± 0.05

\*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.

**Equipment used in calibration**

Type	Serial number	Calibration date	Certificate number
PPC4	439	2015-06-03	1500169247/1500169249

**Uncertainty ( 95 % confidence level, k=2)**

Pressure ± 0.07 hPa

**Ambient Conditions**

Humidity 40 %RH ± 5 %RH  
 Temperature 23 °C ± 1 °C  
 Pressure 1012 hPa ± 1 hPa



Approved By



Technical Operator

