

Report #: 112509-C4650041-RH RMA #: 95-76477

Model #: HMP45A

Instrument Type: Humidity Transmitter

Instrument Range: 0.8 to 100%, RH

Instrument Range: -39.2 to +60 °C, T

Calibration Date: Nov-25-2009

Serial #: C4650041

Calibration Procedure: 11603100

Recommended Calibration Due Date: Nov-25-2010

Customer: NOAA PORT OFFICE

City, State: HONOLULU, HI

This unit was calibrated by adjusting its reading at 0% against a dry-air line and at 75% against reference humidity and temperature instrument, Vaisala model HMP233. Additional instrument verification checkpoints were made against HMP233 reference at 11%RH and 33%RH. Calibration and instrument verification sequences utilize a dry-air line and a set of controlled aqueous salt solutions Vaisala model HMK13B. Laboratory ambient conditions are humidity and temperature controlled. The calibration uncertainty is presented at 95% confidence level, k=2. The standard uncertainty of the measurement has been determined in accordance with U.S. Guide to the Expression of Uncertainty in Measurement.

Calibration Data (As Found)				
Out of Tolerance: YES				
Temperature Calibration, °C				
Reference	Unit Under Test	Error	± Tolerance, °C	± Uncertainty, °C
21.96	21.80	-0.16	0.20	0.07
Humidity Calibration, %RH				
Reference	Unit Under Test	Error	± Tolerance, %	± Uncertainty %
0.03	0.20	0.17	1.00	0.50
11.11	11.20	0.09	1.00	0.92
32.47	32.20	-0.27	1.00	1.01
74.76	73.10	-1.66	1.00	1.02
Calibration Data (As Left)				
Temperature Calibration, °C				
Reference	Unit Under Test	Error	± Tolerance, °C	± Uncertainty, °C
21.85	21.80	-0.05	0.20	0.07
Humidity Calibration, %RH				
Reference	Unit Under Test	Error	± Tolerance, %	± Uncertainty %
0.03	0.10	0.07	1.00	0.50
11.26	11.20	-0.06	1.00	0.92
32.57	32.40	-0.17	1.00	1.01
75.05	75.20	0.15	1.00	1.02

**Problem Noted:** The Unit Was Out Of Tolerance "As Found"; The RH Sensor Was Contaminated

**Action Taken:** The Rh Sensor Was Replaced And The Unit Was Calibrated

The results of this calibration are related only to the items being calibrated at the time of calibration, and are traceable to the National Institute of Standards and Technology. Vaisala's calibration system has been established to meet the requirements of ANSI/NCSL Z540-1-1994. This certificate can not be reproduced, except in full, without the expressed written consent of Vaisala. The certificate was established to comply with the requirements of ISO/IEC17025. Vaisala is ISO 9001:2000 certified.

Calibration Equipment Used: Workstation 1A			
Model Number	Serial Number	Calibration Date	Due Date
DMP248	Z3230004	Oct. 5, 2009	Sep. 5, 2010
Fluke 45	6666019	Jun. 17, 2009	Dec. 17, 2010
HMK13B	500005	Oct. 28, 2009	Apr. 28, 2010
HMT333	E0230025	Nov. 11, 2009	Feb. 11, 2010
HMT333	E0230026	Nov. 11, 2009	Feb. 11, 2010
HMI41/HMP45	S0720005	Sep. 22, 2009	Mar. 22, 2010

Ambient Conditions	
Temperature:	22.00 °C
Humidity:	50.30 %RH

Approved By

Technical Operator  
Nicholas Paoletta