

## CALIBRATION CERTIFICATE

**Instrument** Humidity and Temperature Transmitter HMT335  
**Order code** HMT330-5N0A124CBAE100A0ACABAA1  
**Serial number** F3510102  
**Manufacturer** Vaisala Oyj, Finland  
**Calibration date** 30th August 2010

The analog outputs of the above instrument were measured by using working standards of the manufacturer. The outputs were forced by digital input signals to three output values. The observed values were determined by measuring the voltage over the output terminals. All results are traceable in terms of voltage to NIST.

### Analog output channel 1 calibration results

Output forced to V	Observed output V	Difference V	Permissible difference V
0.500	0.49965	- 0.00035	±0.0025
2.500	2.49982	- 0.00018	±0.0025
4.500	4.5004	+ 0.0004	±0.0025

### Analog output channel 2 calibration results

Output forced to V	Observed output V	Difference V	Permissible difference V
0.500	0.50025	+ 0.00025	±0.0025
2.500	2.50032	+ 0.00032	±0.0025
4.500	4.50083	+ 0.00083	±0.0025

### Analog output channel 3 calibration results

Output forced to V	Observed output V	Difference V	Permissible difference V
-	-	-	-
-	-	-	-
-	-	-	-

### Equipment used in calibration

Type	Serial number	Calibration date	Certificate number
HP34970A	EM 11571	2009-08-11	K004-09S547

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

Voltage ±0.00069V

**Ambient conditions** / Humidity 28.00 ± 5%RH, Temperature 22.60 ± 2 °C, Pressure 1010.80 ± 20 hPa!

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Technician





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**Order code** HMT330 5N0A124CBAE100A0ACABAA1  
**Serial number** F3510102  
**Manufacturer** Vaisala Oyj, Finland  
**Calibration date** 1st September 2010

The above instrument was calibrated by comparing the readings of the instrument to working standards of the manufacturer. The reference humidity was calculated from dewpoint temperature and temperature readings with the exception of the driest condition that was measured as relative humidity. Dewpoint temperature was measured with a 373 LHX dewpoint meter. Temperature and relative humidity were measured with two factory working standards. At the time of shipment, the instrument described above met its operating specifications.

The 373 LHX dewpoint meter has been calibrated at Centre for metrology and accreditation (MIKES) by using a MIKES working standard traceable to National Institute of Standards and Technology (NIST). The temperature readings of the factory working standards have been calibrated at Vaisala Measurement Standards Laboratory (MSL) by using MSL working standards traceable to NIST. The relative humidity readings of the factory working standards have been calibrated at the Vaisala factory by using a 373 LHX dewpoint meter. The temperature calibration at MSL has been accredited by the FINAS according to the ISO/IEC 17025.

### Humidity calibration results

Reference humidity %RH	Reference temperature °C	Observed humidity %RH	Observed probe temperature °C	Additional probe temperature °C	Humidity difference %RH	Permissible difference %RH
+ 94.4	+ 22.12	+ 94.8	+ 22.11	-	+ 0.4	± 1.7
+ 74.7	+ 22.12	+ 75.3	+ 22.13	-	+ 0.6	± 1.0
+ 53.9	+ 22.11	+ 54.9	+ 22.10	-	+ 1.0	± 1.0
+ 33.1	+ 22.08	+ 34.0	+ 22.09	-	+ 0.9	± 1.0
+ 12.7	+ 22.07	+ 13.3	+ 22.08	-	+ 0.6	± 1.0
+ 0.2	+ 22.07	+ 0.3	+ 22.07	-	+ 0.1	± 1.0

### Temperature calibration results

Reference temperature °C	Observed probe temperature °C	Temperature difference °C	Additional probe temperature °C	Temperature difference °C	Permissible difference °C
+ 22.12	+ 22.13	+ 0.01	-	-	± 0.10

### Equipment used in calibration


Type	Serial number	Calibration date	Certificate number
MBW 373 LHX	08-1204	2010-03-19	M-10H017
Vaisala HMT337	D2350020	2009-11-04	K008-S02705
Vaisala HMT337	D2350019	2009-11-04	K008-S02704
Vaisala HMT337	D2350020	2010-08-12	H45-10331001
Vaisala HMT337	D2350019	2010-08-12	H45-10331003

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

Humidity ± 0.6%RH @ 0...40%RH, ± 1.0%RH @ 40...97%RH

Temperature ± 0.10 °C.

Ambient conditions / Humidity 41 ± 5%RH, Temperature + 23 ± 1 °C, Pressure 1009 ± 1 hPa.

  
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 Technician

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