

Certificate report nr. H37-08050004

CALIBRATION CERTIFICATE

Instrument

Humidity and Temperature Transmitter HMT333

Order code

HMT330-3F0A002BCAC100A04AABAA1

Serial number

A4650017

Manufacturer Calibration date Vaisala Oyj, Finland 29th January 2008

Test procedure

Doc210426-A

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 a calibrated precision resistor. All results are traceable in terms of voltage and resistance to NIST.

Analog output channel 1 calibration results

Output forced to mA	Observed output mA	Difference mA	Permissible difference mA	
2.000	2	0	±0.010	
10.000	10.002	+ 0.002	±0.010	
18.000	18.005	+ 0.005	±0.010	

Analog output channel 2 calibration results

Output forced to mA	Observed output mA	Difference mA	Permissible difference mA ±0.010	
2.000	2.001	+ 0.001		
10.000	10.000 10.004		±0.010	
18.000	18.009	+ 0.009	±0.010	

Analog output channel 3 calibration results

Output forced to mA	Observed output mA	Difference mA	Permissible difference mA
-	-	- V	
-	-A	/ -	-
-		/4	-

Equipment used in calibration

Type	Serial number	Calibration date	Certificate number
HP34970A	EM 12794	2007-09-22	34970AMY44030938
Shunt Cable	JI 11929	2007-02-14	O00492

Uncertainty (95 % confidence level, k=2)

Current ±0.00175mA

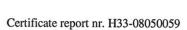
Ambient conditions / Humidity $24 \pm 5\%$ RH, Temperature 24 ± 2 °C, Pressure 1008 ± 20 hPa.

For Vaisala Oyj

Niklas Piiroinen

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Doc211861-B





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Instrument

Humidity and Temperature Transmitter HMT333

Order code

HMT330 3F0A002BCAC100A04AABAA1

Serial number

A4650017

Manufacturer

Vaisala Oyj, Finland

29th January 2008

Calibration date **Test procedure** doc210426-a

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 Vaisala Measurement Standards Laboratory (MSL) by using a MSL working standard traceable to National Institute of Standards and Technology (NIST). The temperature readings of the factory working standards have been calibrated at 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	Reference temperature	Observed humidity	Observed probe temperature	Additional probe temperature	Humidity difference	Permissible difference
%RH	°C	%RH	°C	°C	%RH	%RH
+ 93.5	+ 22.19	+ 93.5	+ 22.19	- //	0.0	± 1.7
+ 73.9	+ 22.18	+ 74.0	+ 22.17	- A	+ 0.1	± 1.0
+ 53.4	+ 22.16	+ 53.5	+ 22.16	- 100000	+ 0.1	± 1.0
+ 32.7	+ 22.17	+ 33.0	+ 22.16	-	+ 0.3	± 1.0
+ 12.4	+ 22.18	+ 12.2	+ 22.18	-	- 0.2	± 1.0
+ 0.1	+ 22.19	- 0.2	+ 22.18	-	- 0.3	±1.0

Temperature calibration results

Reference temperature	Observed probe temperature	Temperature difference	Additional probe temperature	Temperature difference	Permissible difference
°C	·°C	°C	°C	°C	$^{\circ}\mathbf{C}$
+ 22.18	+ 22.17	- 0.01	-	-	± 0.10

Equipment used in calibration

- To-based and the control	T COUNTY		
Type	Serial number	Calibration date	Certificate number
373 LHX	06-0122	2007-08-03	M-07H053
Vaisala HMP233 / T	623073	2008-01-25	K008-R00190
Vaisala HMP233 / T	P1740020	2008-01-25	K008-R00191
HMP233 / RH	623073	2008-01-28	
HMP233 / RH	P1740020	2008-01-28	
			H33-08051001 H33-08051002

Uncertainties (95 % confidence level, k=2)

Humidity $\pm 0.6\%$ RH @ 0...40%RH, $\pm 1.0\%$ RH @ 40...97%RH

Temperature ± 0.10 °C.

Ambient conditions / Humidity 33 \pm 5%RH, Temperature 23 \pm 1 °C, Pressure 1007 \pm 1 hPa.

For Vaisala Oyj

Sari Kaitanen

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