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CALIBRATION CERTIFICATE

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Certificate Number:

HEL203430697



Instrument: Humidity and Temperature Probe HMP155
 Order Code: A2JB11A0A0A1A0A
 Serial Number: S3420870
 Manufacturer: Vaisala Oyj, Finland
 Calibration Date: 2020-08-18

Approved by:

Markus West

The humidity sensor of the instrument was calibrated by comparing the instrument's humidity reading to a generated reference humidity reading. The reference humidity reading was calculated based on two-pressure humidity generation principle, using the measurement results of saturator pressure and temperature and calibration chamber pressure and temperature. At 0 %RH point the humidity sensor of the instrument was calibrated by comparing the instrument's humidity readings to a reference humidity transmitter.

The temperature sensor(s) of the instrument was calibrated by comparing the instrument's temperature readings to a reference thermometer.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %. The measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST USA, MIKES Finland, or equivalent) or via ISO/IEC 17025 accredited calibration laboratories.

Humidity calibration results

Reference Humidity [%RH]	Reference Temperature [°C]	Observed Humidity [%RH]	Observed Temperature [°C]	Humidity Error [%RH]	Acceptance Limit [%RH]	Pass/Fail
0.0	23.20	0.0	23.21	0.0	±1.0	Pass
15.0	23.20	15.0	23.21	0.0	±1.0	Pass
33.0	23.20	32.9	23.21	-0.1	±1.0	Pass
54.0	23.21	53.9	23.21	-0.1	±1.0	Pass
75.2	23.21	75.2	23.21	0.0	±1.0	Pass
95.6	23.22	95.5	23.23	-0.1	±1.7	Pass

Temperature calibration results

Reference Temperature [°C]	Observed Temperature [°C]	Error [°C]	Acceptance Limit [°C]	Pass/Fail
23.21	23.21	0.00	±0.10	Pass

Additional temperature probe calibration results

Reference Temperature [°C]	Observed Temperature [°C]	Error [°C]	Acceptance Limit [°C]	Pass/Fail
-	-	-	-	-

Reference equipment used in calibration

Type	Identity Number	Certificate Number	Calibration Date	Calibration Due Date
PTU307	18469	K008-C03549	2019-10-18	2020-10-31
HMP307	17429	K008-D01945	2020-06-03	2021-06-30
GE Druck DPS 823B	16734	K008-D01942	2020-06-02	2021-06-30
AM1612	17116	K008-D01947	2020-06-03	2021-06-30
PXI-4070	17432	D01944	2020-06-03	2021-06-30

Calibration uncertainty (k=2, ~95% confidence level):

Humidity ± 0.6 %RH @ 0...40 %RH, ± 1.0 %RH @ 40...95 %RH
 Temperature ± 0.10 °C

Ambient conditions:

Humidity [%RH] 55 ± 4 Temperature [°C] 24 ± 2 Pressure [hPa] 1007 ± 20



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Approved by:

Matthias West

The analog outputs of the instrument were calibrated by using working standards of the manufacturer. The outputs were forced by digital input to three output values and measured with a calibrated voltmeter.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %. The measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST USA, MIKES Finland, or equivalent) or via ISO/IEC 17025 accredited calibration laboratories.

Analog output channel 1 calibration results

Channel 1 scaling: T -80...60 °C 0...1 V

Output forced to [V]	Observed output [V]	Difference [V]	Acceptance limit [V]	Pass/Fail
0.1000	0.0998	-0.0002	±0.0010	Pass
0.5000	0.4998	-0.0002	±0.0010	Pass
0.9000	0.9000	0.0000	±0.0010	Pass

Analog output channel 2 calibration results

Channel 2 scaling: RH 0...100 % 0...1 V

Output forced to [V]	Observed output [V]	Difference [V]	Acceptance limit [V]	Pass/Fail
0.1000	0.1000	0.0000	±0.0010	Pass
0.5000	0.5001	0.0001	±0.0010	Pass
0.9000	0.9000	0.0000	±0.0010	Pass

Reference equipment used in calibration

Type	Identity Number	Certificate Number	Calibration Date
PXI-4070	17432	D01944	2020-06-03

Calibration uncertainties (k=2, ~95% confidence level):

Voltage ± 0.0002 V

Ambient conditions:

Humidity [%RH]	Temperature [°C]	Pressure [hPa]
55 ± 4	24 ± 2	1007 ± 20