VAISALA

CALIBRATION CERTIFICATE

Vaisala is ISO 9001, ISO 14001 and AQAP 2110 certified company.

Certificate Number: HEL220330621

Instrument: PTUMODULE
Serial Number: U0240141
Manufacturer: Vaisala Oyj
Issue Date: 2022-01-19

Approved by:

Digitally signed by VINIE
Date: 2022.01.19 17:09:08 +02:00
Reason: Calibration responsible
Location: Vaisala Oyj, Finland

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

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 and temperature calibration results, calibration date 2022-01-14

Reference Humidity [%rh]	Reference Temperature [°C]	Observed Humidity [%rh]	Observed Temperature [°C]	Humidity Error [%rh]	Acceptance Limit [%rh]
0.0	22.52	0.0	22.50	0.0	±3.0
15.0	22.52	14.6	22.51	-0.4	±3.0
33.0	22.53	32.8	22.51	-0.2	±3.0
54.0	22.53	53.9	22.52	-0.1	±3.0
75.1	22.53	75.1	22.53	0.0	±3.0
94.9	22.53	95.9	22.54	1.0	±5.0

Reference Temperature [°C]	Observed Temperature [°C]	Temperature Error [°C]	Acceptance Limit [°C]
22.53	22.53	0.00	±0.30

Ambient conditions in humidity and temperature calibration

Humidity [%rh]	Temperature [°C]	Pressure [hPa]
18 ±4	25 ±2	986 ±20

Reference equipment used in Humidity and temperature calibration

Type	Identity Number	Certificate Number	Calibration date	Calibration due date
PTU307	17050	K008-E00487	2021-02-09	2022-02-28
PXI Pt-100 sensor	19923	K008-E06355	2021-12-12	2022-12-31
DPS823B	19906	K008-E05706	2021-11-15	2022-11-30
PXI Pt-100 sensor	19921	K008-E06357	2021-12-12	2022-12-31
PXIe-4080	19920	E06358	2021-12-13	2022-12-31

Pressure calibration results, calibration date 2022-01-13

Reference Pressure [hPa]	Observed Pressure [hPa]	Pressure Error [hPa]	Acceptance limit [hPa]
601.2	601.2	0.0	±0.5
800.9	800.9	0.0	±0.5
901.0	901.0	0.0	±0.5
1081.2	1081.2	0.0	±0.5

Reference equipment used in pressure calibration

Type	Identity Number	Certificate Number	Calibration date	Calibration due date
Fluke RPM4	17966	E06297	2021-12-09	2022-06

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

Humidity	±0.6 %rh @ 0...40 %rh, ±1.0 %rh @ 40...95 %rh
Temperature	±0.10 °C
Pressure	±0.3 hPa

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