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Atlas Copco Airpower n.v.
Oil-free Air Division
Boomssteenweg 957
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Belgium

Order-No.: GMH/ 21266715 / 01

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September 16, 2024

Test certificate
Validation according to ISO 8573-1: 2010 Part 1:
Contaminants and purity classes

Dear Sirs,

We have witnessed the measurement of the humidity in the outlet air stream of an Atlas Copco BD+ dryer. The measurements were done by Atlas Copco Airpower n.v. in accordance with the following guidelines and standards:

ISO 8573-1: 2010 Part 1: Contaminants and purity classes

ISO 8573-3: 2018 Part 2: Test methods for measurement of humidity

This being a type test, covering the entire BD360-3500+ dryer range a model was selected for the tests. For the test a BD480+ dryer was selected.

The measurements were done in the outlet air stream of an Atlas Copco Oilfree rotary tooth compressor followed by a desiccant dryer (BD480+) after filter and MFs final filter.

Samples were taken continuously over a time span of 12 h during the days 2024-06-19 to 2024-06-20. All data was provided by Atlas Copco Airpower n.V.

The pressure at the sampling point was 6.8 bar(e).

The temperature at the sampling point was 32.7°C.

The measurements were made using a dewpoint transmitter Type Vaisalla DMT152 with an uncertainty of $\pm 0.9^{\circ}\text{C}$.

The measuring equipment was calibrated on 2024-03-08 as per record (enclosed)

The declared pressure dew point in accordance with ISO 8573-3 is:

Pressure dew point $-92.9 \pm 0.9^{\circ}\text{C}$ at actual conditions.

6.8 bar(e), 32.7°C

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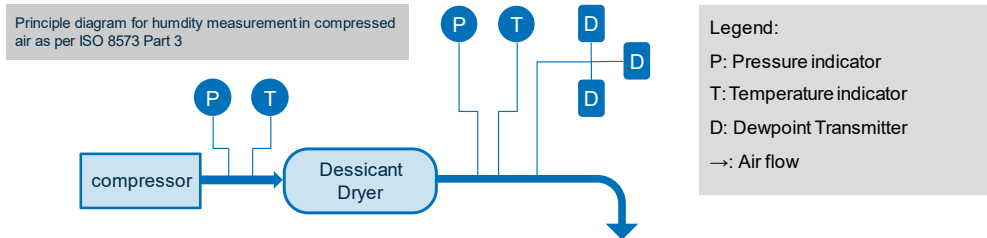


Figure 1: Schematic test setup

It is to certify that, at the test conditions, the measured pressure dewpoint was below the criteria of

-90°C/-130°F

in the compressed air streamer. Based on this test, we can certify the results to be valid for the aforementioned BD+ dryer range.

It is to certify that the quality of air from the dryer mentioned above qualifies to be in category "Class 0" in terms of humidity, as defined in standard ISO 8573-1: 2010 Part 1.

A detailed report with all test conditions and results is available.

Kind regards

Hazardous Materials, Microbiology and Hygienics

i. V.



Dr. Andrea Hoyer

i. A.



Alexander Most

210893



Vaisala is ISO 9001 and ISO 14001 certified company

CALIBRATION CERTIFICATE

This certificate may only be reproduced in full, except with the prior written permission by the issuing laboratory.

Certificate number: HEL241110139



Case number: 601554

Manufacturer: Vaisala Oyj
Instrument: Dewpoint transmitter DMT152
Serial number: V0430211
Asset number: 210893
Issue date: 2024-03-11
Calibration date: 2024-03-08
Recalibration date: 2025-03-08

Approved by:

Viljami Kantele
Technician

Note(s):
Service report as an attachment.

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.

Procedure instructions: PI218167

Certificate number: HEL241110139



As Found Results

Dewpoint calibration results

Reference [°C]	Reading [°C]	Error [°C]	Uncertainty [°C]	Specification [°C]	Notes
-79.9	-82.8	-2.9	±0.9	±2.0	*
-57.0	-59.9	-2.9	±0.9	±2.0	*
-39.7	-43.8	-4.1	±0.9	±3.0	*
-19.7	-23.4	-3.7	±1.6	±3.0	*

References used in the calibration

Model	Instrument number	Certificate number	Calibration date	Recalibration date
373 LX	UD 12692	M-23H046	2023-11-01	2024-11-30
PXI-4070	17584	1250-307135803	2023-05-30	2024-05-31

Ambient conditions:

Humidity

15.1 %rh ±2.2 %rh

Temperature

23.0 °C ±1.3 °C

Pressure

1021.7 hPa ±1.4 hPa

Any error greater than the specification is noted with *
Readings below 0 °C are frostpoint values

Certificate number: HEL241110139



As Left Results

Dewpoint calibration results

Reference [°C]	Reading [°C]	Error [°C]	Uncertainty [°C]	Acceptance Limit [°C]	Pass/Fail
-79.9	-79.9	0.0	±0.9	±2.0	Pass
-57.0	-57.0	0.0	±0.9	±2.0	Pass
-39.7	-39.7	0.0	±0.9	±3.0	Pass
-19.7	-19.7	0.0	±1.6	±3.0	Pass

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Certificate number: HEL241110139



Calibration note(s):

The instrument was calibrated by comparing the instrument's dewpoint temperature readings to a reference dew point meter in the Vaisala laboratory's permanent facility. The analog output values of the transmitter were measured using a calibrated digital multimeter. The chemical purge function was run before As Found data was collected.

The calibration uncertainty represents the situation at the time and conditions of calibration. When using the instrument at different conditions and at different time the effect of the conditions and stability of the instrument shall be evaluated separately. The calibration results and the statement of conformity with specification/acceptance limit relate only to the calibrated instrument and the calibration points.

The statement of conformity is based on simple acceptance, whether the calibration result is within or outside the manufacturer's specification/acceptance limits. The calibration uncertainty is not taken into account in the statement of conformity. The probability of accepting a non-conforming result or rejecting a conforming result can be as large as 50 % with this acceptance rule when the calibration result is close to the acceptance limit.

Pass or - = The calibration result is equal or within the manufacturer's acceptance limit.

Fail or * = The calibration result is outside the manufacturer's acceptance limit.

N/A = The calibration result acceptance limit is not specified.