



DEW POINT

Calibration Service for Dew/Frost Point Temperature

The calibration laboratory of E+E Elektronik GmbH is accredited according to DIN EN ISO/IEC 17025, with identification number 0608, by Akkreditierung Austria / Federal Ministry of Science, Research and Economy. E+E Elektronik is a designated lab, responsible for the maintenance of the "National Standard for Air Humidity" in Austria.

The dew point calibration system impresses with a very low measurement uncertainty and a calibration range of -90 °C (-130 °F) frost point to +95 °C (203 °F) dew point. Standard calibrations are carried out in nitrogen. Different carrier gases such as methane for calibration of dew point hygrometers on request.

The E+E calibration service also offers calibrations of dew point meters and dew point mirrors in the designated lab. This is primarily of interest for accredited calibration facilities.



Calibration object

- Dew point transmitter / dew point sensor
- Dew point mirror



Calibration range

Calibration standard	Calibration object	Measurement method	Measurement range ¹⁾
NMI Lab	Special calibration of dew point meters in the designated BEV/E+E lab		
ÖKD Lab	Dew point mirror Dew point transmitter Dew point sensor	Comparison with national standard Max. gas flow 5 l/min	(-75 to 95) °C (1 to 10) bar to -55 °C (1000 ± 80) mbar to -75 °C
ÖKD Lab	Dew point transmitter Dew point sensor	Dual pressure dual temperature generator in combination with a temperature-stabilised measurement chamber and comparison with dew point mirror	(-55 to 90) °C (1000 ± 80) mbar
ÖKD Lab	Dew point mirror Dew point transmitter Dew point sensor	Single pressure generator at room temperature	(-90 to 20) °C at (23 ± 3) °C (1 to 100) bar in air oder nitrogen ²⁾
ISO E+E	Dew point transmitter Dew point sensor	Comparative measurement	(-5 to 20) °C at (25 ± 3) °C

Calibration range	Dew point temperature ³⁾	Pressure
A	(61 to 95) °C	(1 to 10) bar
B	(25 to 60) °C	(1 to 10) bar
C (ÖKD)	(20 to -5) °C	(1 to 100) bar
D	(-6 to -25) °C	(1 to 100) bar
E	(-26 to -45) °C	(1 to 100) bar
F	(-46 to -60) °C	(1 to 100) bar
G	(-61 to -80) °C	(1 to 100) bar
H	(-81 to -90) °C	(1 to 100) bar
C (ISO)	(20 to -5) °C at 25 °C	1 bar ± 100 mbar

1) According to the BIPM Service category 3.1, dew point is used as term for the measurand.
 For <0 °C the value refers to frost point.
 Calibration <0 °C can also be carried out for the calculated dew point temperature.

2) Other carrier gases, such as methane, on request.

OEKD Calibration Standard

ÖKD ACCREDITED CALIBRATION - Accreditation Austria

The essential characteristic of an accredited calibration certificate is the traceability of measurement results and thus their international comparability. The essential factor is mainly the indication of measurement uncertainties, which is determined from the measurement process.



According to international agreements (ILAC), only calibration labs accredited in accordance with EN ISO/IEC 17025 can perform traceable calibrations, thus ensuring full international comparability of the calibration results.

Calibration procedure

In a dual pressure humidity generator, air is generated with a defined mole fraction (water/gas) with a maximum gas flow of 5 l/min under normal conditions (displayed). This gas flow is conveyed to the test sample and at the sample location, generates a defined dew point temperature depending on the pressure. As an option, the test sample can be temperature-stabilised in a measurement chamber.

The calibration system is the Austrian national standard for air humidity.

ISO Calibration Standard

ISO calibrations are comparative measurements of external test samples with E+E internal reference units. The reference units used are traceable to national standards. The comparative measurement is performed according to internal procedures, which comply with the requirements of ISO 9001.

By using high quality measuring equipment, the comparative measurement provides information on the device's calibration situation.

Ordering Guide

Calibration standard		OEKD-C	ISO-C
Calibration object	Dew point transmitter	T	T
	Dew point mirror	S	
Dew point calibration ¹⁾	Number of calibration points per calibration range	1...9	1...9
	Calibration range	A...H	C
Temperature calibration	none	no code	no code
	Number of temperature calibration points	U1...U9	U
Pressure	ambient	x	
	> 1 bar	P	
Dew point Td / frost point Tf	Dew point Td [°C]	TD	TD
	Frost point Tf [°C] ²⁾	TF	TF
Text entry	Values for calibration points (e.g.: -5/8/18 °C at (20 ± 3) °C)		

1) For calibration points in multiple calibration ranges, give the number of points for each range
2) Dew point points <0 °C are given as frost point t_f

Order example:

OEKD-CT3CxTD

Text field: -5/8/18 °C at 20 °C

Description:

- [C] accredited dew point calibration of a
- [T] - dew point transmitter with
- [3C] - 3 points in the calibration range C at -5/8/18 °C
- [x] - at ambient pressure
- [TD] - dew point temperature t_d

Order example:

OEKD-CT1C1D1FPTD

Text field: -55/-25/0 °C at 20 °C and 6 bar

- [C] accredited dew point calibration of a
- [T] - dew point transmitter with
- [1C] - 1 point in the calibration range C at 0 °C
- [1D] - 1 point in the calibration range D at -20 °C
- [1F] - 1 point in the calibration range F at -55 °C
- [P] - at 6 bar
- [TD] - dew point temperature t_d

Order example:

OEKD-CS3B2C2D2E1FxTF

Text field: -55/-45/-30/-20/-10/0/15/30/45/55 °C at 20/60 °C

Description:

- [C] accredited dew point calibration of a
- [S] - dew point mirror with
- [3B] - 3 points in the calibration range B at 55/45/30 °C
- [2C] - 2 points in the calibration range C at 15/0 °C
- [2D] - 2 points in the calibration range D at -10/-20 °C
- [2E] - 2 points in the calibration range E at -30/-45 °C
- [1F] - 1 point in the calibration range F at -55 °C
- [x] - at ambient pressure
- [TD] - frost point temperature t_f