

Dewchecker 2.1



Features:

The dew point measurement instrument Dewchecker 2.1 is a portable device used for measuring the dew point of gases. Per definition, the dew point is the temperature of a body marking the start of condensation of water vapour on its surface respectively the balance adjusted between condensing and evaporating water.

The level of the dew point depends on the moistness of the measuring gas. Measurement inside the device is based on a cooled mirror the formation of condensate becomes visible on. Due to the direct measurement of the dew point temperature the measurement is accurate and long-term stable. The device itself requires very low maintenance. The main range of application of the device is the dew point measurement of gas atmospheres of heat treatment facilities and gas generators.

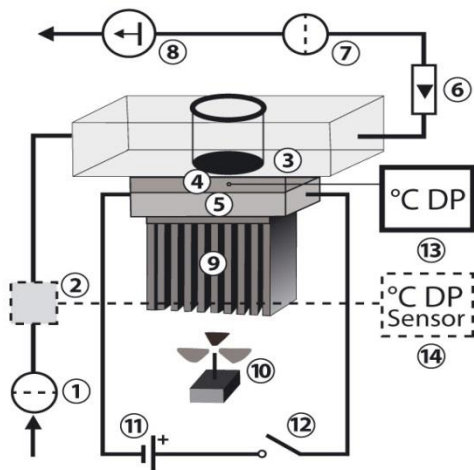
The Dewchecker 2.1 is equipped with an additional capacitive on-line sensor used accordingly for continuous measurements. The measurement result can be forwarded by a universal analog output or a digital RS-485 / RS-422 interface.

The mirror temperature can be adjusted precisely by manually using +/- keys on the front panel. The device is available as 230 V or 115 V supply voltage version.

Principle of Operation:

As depicted the measuring gas is conducted through the sintered metal filter (1), which protects the device from contaminants of the measuring gas. The dew point sensor (2) with its indicator (14) is only part of the Dewchecker 2.1. The mirror inside the measuring chamber (3) is mounted on the mirror plate (4) which is cooled by the Peltier element (5).

The waste heat of the Peltier element is transferred to the ambient air by use of the heat sink (9) and fan (10). The amount of gas flow is indicated via flow meter (6) and adjustable by it. The Peltier element is powered by the current source (11) if the switch (12) is activated. The temperature of the mirror is readable at the indicator (13). Reduced pressure needed for the gas flow is generated by the pump (8), which is protected by an additional internal filter (7).



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Advantages:

- Easy handling
- High measuring certainty and accuracy
- Insensitivity to gases containing dust and corrosive gases
- Robust construction
- Safe designation of dew point by detaining the temperature and fine adjustments in steps of +/-0,2°C

Technical Data

Design:

Portable steel housing

Weight:

Approx. 17 kg

Degree of Protection:

Housing IP 20 according to IEC 60529

Front panel IP 40 according to IEC 60529

Power Supply:

230 or 115 VAC ±10% 50...60 Hz (please specify)

Measuring Range:

-25...+30°C (direct measurement with mirror)

-80...+20°C (indirect measurement with capacitive sensor)

Resolution in steps of:

0,1°C

Measuring Gas Connectors (hose connectors):

Input: Tube outer diameter 5...6 mm

Output: Tube outer diameter 5...6 mm

Built-in measuring pump

Analog Output:

-80...+20°C, 0...20 mA or 4...20 mA or 0...10 V galvanic isolated, 4...20 mA is the predefined setting

Digital Output:

Either RS-485 / RS-422 four-wire or

RS-485 two-wire (please specify)

Isolated interface with Modbus-protocol

Dimensions:

330x310x320 mm (WxHxD)

Humidity:

Up to 70 %, non condensing

Ambient Temperature:

10...40 °C during operation

0...50 °C during storage

Gas Flow:

Approx. 1l/min.

Measuring Accuracy:

±0,5°C (direct measurement with mirror)

±2°C (indirect measurement with capacitive sensor)

Measuring Gas Pressure:

±50 mbar

Maintenance Interval:

Every year

Order number

531-3019

Device name

Dewchecker 2.1

Optional accessories

24799

531-8001

24659

130-6050

24181

Mirror plate for Dewchecker complete

Pump for Dewchecker

A005 for Dew Checker v.3.6

Polishing cotton wool

Sinter filter inlet 7 µm