



Dewchecker 3.1

Features:

The automatic dew point measurement instrument **Dewchecker 3.1** is a portable device used for measuring the dew point temperature of gases.

Per definition, the dew point is the temperature of a body at which the water vapours start to condensate 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. Due to the direct measurement of the dew point temperature the measurement is accurate and long-term stable. With this device it is possible to measure dew point temperatures lower than the ambient temperature. Moreover, the device itself requires very low maintenance.

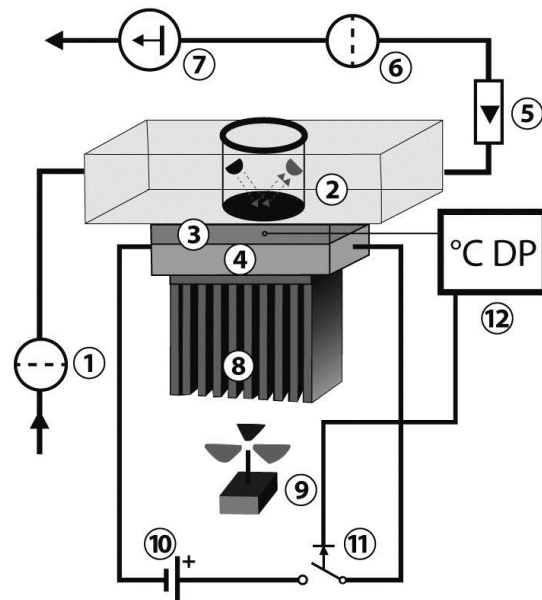
Dewchecker 3.1 measures the dew point value completely automatically. A beam of light, from the emitting diode, is aimed at the mirror's surface and a photodetector monitors the reflected light. The Mirror is constructed from a material with good thermal conductivity and it is cooled down by using a thermoelectric cooler until the condensation begins. As the amount of reflected light decreases, due to the absorption, the photodetector output decreases also. An internal control system monitors the mirror's temperature at the dew point level over reflected photodetector voltage.

The device is available for either 230 V or 115 V supply voltage.

Advantages:

- **Automatic dew point measurement instrument**
- **High measuring certainty and accuracy**
- **Internal sample pump**
- **Robust construction and easy handling**

Principle of Operation:



As described, the measuring gas is conducted through the sintered metal filter (1), which protects the device from contaminants of the measuring gas.

The waste heat of the Peltier element is transferred to the ambient air by use of the heat sink (8) and fan (9). The amount of gas flow is indicated via flow meter (5) and adjustable by it. The Peltier element is powered by the current source (10) if the electronic switch (11) is activated. The temperature of the mirror is readable at the indicator (12). Reduced pressure needed for the gas flow is generated by the pump (7), which is protected by an additional internal filter (6).

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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 $\pm 10\%$ 50...60 Hz (please specify)

Measuring Range:

-25...+25 °C

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:

-25...+25 °C , 0...20 mA or 4...20 mA or 0...10 V
 galvanic isolated, 4...20 mA is predefined setting

Digital Output:

Relay 1; 5A/250V Indication of good measurement result

Communication:

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:

$\pm 1^\circ\text{C}$

Measuring Gas Pressure:

± 50 mbar

Maintenance Interval:

Every year

Accessories

Power cord	product code	011-0520
Polishing cotton	product code	130-6050
Polishing paste		no product code available
Connection pipe yellow 8 mm with adapter approx. 3 m	product code	015-7103
Connection pipe yellow 6 mm approx. 3 m	product code	015-7102
In-line filter	product code	24382
Filter material	product code	24221
Wooden stick for cleaning		no product code available
Spare fuse (230V)	product code	027-0005
Spare fuse (115V)	product code	027-0011
Spare sinter filter insert	product code	24180