DM70 Handheld Dewpoint Meter for Spot-Checking Applications

The Vaisala DRYCAP® Handheld Dewpoint Meter DM70 offers accurate and fast measurement for industrial dew point applications, such as compressed air, metal treatment and plastics drying.

The Vaisala DRYCAP® Handheld Dewpoint Meter DM70 measures dew point temperature accurately over a wide measurement range. The probe may be inserted directly into pressurized processes, and it responds rapidly from ambient to process conditions. The sensor withstands condensation and fully recovers from getting wet. The DM70 meter is suitable for direct process dew point measurement in a wide temperature and pressure range. For more demanding applications, the DM70 can be used with the Vaisala sampling cell adapters, or with the Vaisala DRYCAP® Sampling System DSS70A.

Vaisala DRYCAP® Technology
The DM70 is fitted with the Vaisala DRYCAP® Sensor. The sensor provides reliable, stable and high-performance dew point measurement. Autocalibration detects on-line possible measurement inaccuracies and automatically corrects dry-end drift in the calibration curve.

Three Probes to Choose From
Three probe models, all with autocalibration, are available. The A and B models are both general purpose probes. The C model is specifically developed for SF₆ gas. The B and C probe models have an additional Sensor Purge feature that heats and dries the sensor, making the response from ambient to dry conditions exceptionally fast.

Intuitive User Interface
The DM70 has a versatile and easy-to-use, menu-based user interface, a clear graphical LCD display, and data-logging capability. It can also be used as a tool for reading the output of fixed Vaisala dew point transmitters, like the DMT242, DMT132, DMT143, DMT152 and DMT340.

The DM70 displays one to three parameters at a time, either numerically or graphically. Several humidity units can be selected. In addition, the DM70 includes conversion from gas pressure dew point to ambient pressure dew point. An analog output is also available.

MI70 Link
The optional MI70 Link Windows® software and the USB connection cable form a practical tool for transferring logged data and real time measurement data from the DM70 to a PC.

Features/Benefits
- Designed for industrial spot-checking and field calibration
- Three models: accurate measurement ranges from -60 to +60 °C (-76 ... +140 °F)
- Vaisala DRYCAP® Sensor with unique autocalibration function
- Low maintenance need due to superior long-term stability
- Sensor withstands condensation
- Fast response, enhanced by Sensor Purge option
- Intuitive user interface
- Data can be logged and transferred to a PC via MI70 Link software
- Compact, small and light
- NIST traceable calibration (certificate included)
### Technical Data

#### Measured Variables, DMP74A Probe

**DEW POINT**

- **Measurement range (typical)**: -50 ... +60 °C (58 ... +140 °F)
- **Accuracy (A probe)**: -40...+60 °C ±2 °C (±3.6 °F)

![Dew point accuracy vs. measurement conditions graph](image)

- **Response time**
  - Flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]
  - 0 -> -40 °C Td (32 -> -40 °F Td) 20 s [120 s]
  - -40 -> 0 °C Td (32 -> 32 °F Td) 10 s [20 s]

Dew point sensor: Vaisala DRYCAP® 180M

#### Measured Variables, DMP74B and DMP74C (for SF6 gas) Probes

**DEW POINT**

- **Measurement range (typical)**: -70 ... +30 °C (-94 ... +86 °F)
- **Accuracy (B and C probe)**: -60...+20 °C ±2 °C (±3.6 °F)

![Dew point accuracy vs. measurement conditions graph](image)

- **Response time**
  - Flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]
  - 0 -> -60 °C Td (32 -> -76 °F Td) 50 s [340 s]
  - -60 -> 0 °C Td (-76 -> 32 °F Td) 10 s [20 s]

Dotted line:

For DMP74C the ±2 °C accuracy range is limited to -50 °C Td when used in SF6 gas.

#### Dew point sensor

- **Vaisala DRYCAP® 180M**

#### All Probe Models

**Operating temperature** -10 ... +60 °C (+14 ... +140 °F)

**Operating pressure**

- DMP74A, DMP74B: 0 ... 20 bara (0 ... 290 psia)
- DMP74C: 0 ... 10 bara (0 ... 150 psia)

**Sample flow rate**

- No effect for measurement accuracy

**Measured gases**

- Non-corrosive gases

**Probe material (wetted parts)**

- Stainless steel (AISI 316L)

**Sensor protection**

- Sintered filter (AISI 316L)

**Partno:** HM47280

**Mechanical connection**

- G1/2” ISO228-1 thread with bonded seal ring (U-seal)

**Housing classification**

- IP65 (NEMA 4)

**Weight**

- 350 g

#### M170 Measurement Indicator General

**Menu languages**

- English, Chinese, Spanish, Russian, French, Japanese, German, Swedish, Finnish

**Display**

- LCD with backlight

**Graphic trend display of any parameter**

- Character height up to 16 mm

**Max. no of probes**

- 2

**Power supply**

- Rechargeable NiMH battery pack with AC-adapter or 4xAA size alkalinies, type IEC LR6

**Analog output**

- 0...1 VDC

**Output resolution**

- 0.6 mV

**PC interface**

- MI70 Link software with USB or serial port cable

**Data logging capacity**

- 2700 points

**Alarm**

- Audible alarm function

**Operating temperature range**

- -10...+40 °C (+14...+104 °F)

**Storage temperature range**

- -40 ... -70 °C (-40 ... -158 °F)

**Operating humidity range**

- 0 ... 100 % RH, non-condensing

**Housing classification**

- IP54

**Housing materials**

- ABS/PC blend

**Weight**

- 400 g

**Battery operation time with DMP74 probe**

- Continuous use: 48 h typical at +20 °C (+68 °F)

**Data logging use**

- Up to a month, depending on logging interval

**Electromagnetic compatibility**

- EN 61326-1, Generic Environment
Technical Data

**Accessories**

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection cables for fixed Vaisala dew point transmitters</td>
<td></td>
</tr>
<tr>
<td>for DMT242 transmitter</td>
<td>27160ZZ</td>
</tr>
<tr>
<td>for DMT340 series</td>
<td>211339</td>
</tr>
<tr>
<td>for DMT152, DMT143, and DMT132 transmitters</td>
<td>219980</td>
</tr>
<tr>
<td>for DMT142 transmitter</td>
<td>211917ZZ</td>
</tr>
<tr>
<td>Weatherproof Carrying Case</td>
<td>MI70CASE3</td>
</tr>
<tr>
<td>Soft Carrying Case</td>
<td>MI70SOFTCASE</td>
</tr>
<tr>
<td>MI70 Link software with USB cable</td>
<td>219687</td>
</tr>
<tr>
<td>MI70 Link software with serial port cable</td>
<td>MI70LINK</td>
</tr>
<tr>
<td>Analog output cable</td>
<td>27168ZZ</td>
</tr>
<tr>
<td>10 m (32.81 ft) extension cable for probe</td>
<td>213107SP</td>
</tr>
<tr>
<td>Portable Sampling System</td>
<td>DSS70A</td>
</tr>
</tbody>
</table>

(see separate data sheet)

**Dimensions**

Dimensions in mm (inches)

![Dimensions Diagram](image)

**Dimensions**

- Ø 12 (0.47)
- G 1/2
- 52 (2.04)
- AW24
- 32 (1.26)
- 38 (1.50)
- 300 (11.81)
- 96 (3.78)
- 10.5 (0.41)
- 140 (5.51)
- 32 (1.26)
- 52 (2.04)
- 6 (0.2362)
- 6.1 (0.2394)
- 150 (5.9055)
- 1850 (72.83)
- 200 (7.874)
- 260 (10.2362)
- Cable length 1850 (72.83)