



# DM70 Handheld Dewpoint Meter

## for Spot-Checking Applications



### Features

- 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
- Sensor withstands condensation
- Data can be logged and transferred to a PC via MI70 Link software
- Traceable calibration (certificate included)
- Fast response, enhanced by Sensor Purge option

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.

### Benefits

- Compact, small and light
- Intuitive user interface
- Low maintenance need due to superior long-term stability
- Sensor withstands condensation and fully recovers from getting wet

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 DM70 meter is suitable for direct process dew point measurement in a wide temperature and pressure range. For more demanding applications, DM70 can be used with Vaisala sampling cell adapters or with Vaisala DRYCAP® Sampling System DSS70A.

### Vaisala DRYCAP® Technology

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

DM70 has a versatile and easy-to-use, menu-based user interface, a clear graphical LCD display, and datalogging capability. It can also be used as a tool for reading the output of fixed Vaisala dew point transmitters, such as DMT242, DMT132, DMT143, DMT152 and DMT340. DM70 displays one to three parameters at a time, either numerically or graphically. Several humidity units can be selected. In addition, 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.

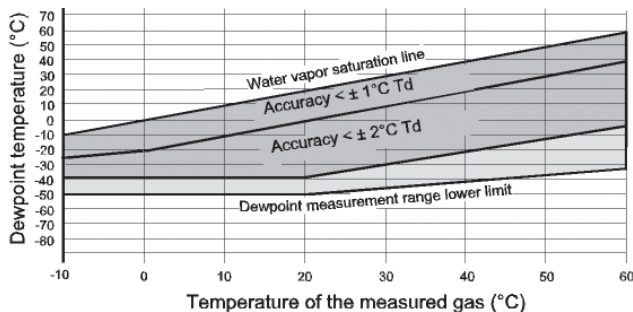
# DM70 Technical Data

## Measurement Performance, DMP74A Probe

### Dew Point

Measurement range (typical) -50 ... +60 °C (-58 ... +140 °F)

### Dew Point Accuracy vs. Measurement Conditions



Accuracy (A probe) -40 ... +60 °C  $\pm 2$  °C ( $\pm 3.6$  °F)  
(see graph)

### Response Time

Flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]

0  $\rightarrow$  -40 °C T<sub>d</sub> (32  $\rightarrow$  -40 °F T<sub>d</sub>) 20 s [120 s]

-40  $\rightarrow$  0 °C T<sub>d</sub> (-40  $\rightarrow$  32 °F T<sub>d</sub>) 10 s [20 s]

Dew point sensor Vaisala DRYCAP® 180S

### Temperature

Measurement range -10 ... +60 °C (+14 ... +140 °F)

Accuracy at +20 °C (+68 °F)  $\pm 0.2$  °C ( $\pm 0.36$  °F)

Typical temperature dependence of electronics  $\pm 0.005$  °C/°C ( $\pm 0.005$  °F/°F)

Temperature sensor Pt100 RTD Class F0.1 IEC 60751

### Other Variables Available

Dew point converted to atmospheric pressure, ppm volume and ppm weight concentration, absolute humidity, mixing ratio, relative humidity

## Operating Environment, All Probe Models

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

Operating pressure for DMP74A, DMP74B 0 ... 20 bara (0 ... 290 psia)

Operating pressure for DMP74C 0 ... 10 bara (0 ... 150 psia)

Sample flow rate No effect for measurement accuracy

Measured gases Non-corrosive gases

EMC compliance EN61326-1, Generic Environment

## Mechanical Specifications

Probe material (wetted parts) Stainless steel (AISI 316L)

Sensor protection Sintered filter (AISI 316L)

Mechanical connection G1/2" ISO228-1 thread with bonded seal ring (U-seal)

IP rating IP65 (NEMA 4)

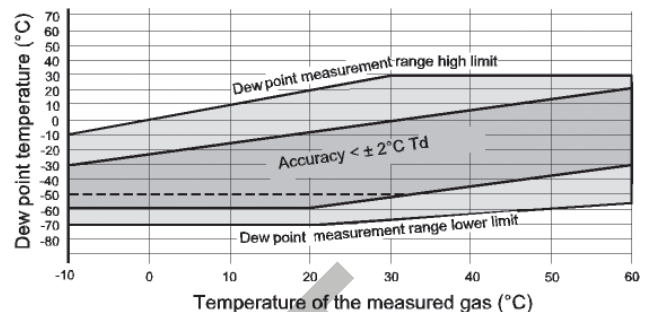
Weight 350 g

## Measurement Performance, DMP74B and DMP74C (for SF6 gas) Probes

### Dew Point

Measurement range (typical) -70 ... +30 °C (-94 ... +86 °F)

### Dew Point Accuracy vs. Measurement Conditions



Dotted line:

For DMP74C the  $\pm 2$  °C accuracy range is limited to -50 °C T<sub>d</sub> when used in SF6 gas.

Accuracy (B and C probe) -60 ... +20 °C  $\pm 2$  °C ( $\pm 3.6$  °F)  
(see graph)

### Response Time

Flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]

0  $\rightarrow$  -60 °C T<sub>d</sub> (32  $\rightarrow$  -76 °F T<sub>d</sub>) 50 s [340 s]

-60  $\rightarrow$  0 °C T<sub>d</sub> (-76  $\rightarrow$  32 °F T<sub>d</sub>) 10 s [20 s]

Dew point sensor Vaisala DRYCAP® 180M

### Temperature

Measurement range -10 ... +60 °C (+14 ... +140 °F)

Accuracy at +20 °C (+68 °F)  $\pm 0.2$  °C ( $\pm 0.36$  °F)

Typical temperature dependence of electronics  $\pm 0.005$  °C/°C ( $\pm 0.005$  °F/°F)

Temperature sensor Pt100 RTD Class F0.1 IEC 60751

### Other Variables Available

Dew point converted to atmospheric pressure, ppm volume and ppm weight concentration

## MI70 Measurement Indicator

### Operating Environment

Operating temperature	-10 ... +40 °C (+14 ... +104 °F)
Operating humidity	0 ... 100 % RH, non-condensing
Storage temperature	-40 ... +70 °C (-40 ... +158 °F)

### Inputs and Outputs

Max. no of probes	2
Power supply	Rechargeable NiMH battery pack with AC adapter or 4xAA size alkalines, type IEC LR6
PC interface	MI70 Link software with USB or serial port cable

### Analog Output

Scale	0...1 VDC
Output resolution	0.6 mV
Accuracy	0.2 % full scale
Temperature dependence	0.002 %/°C full scale
Minimum load resistor	10 kΩ to ground

### Mechanical Specifications

Housing classification	IP54
Housing materials	ABS/PC blend
Weight	400 g

### Compatibility

EMC compliance	EN61326-1, Portable Equipment
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### Other

Menu languages	English, Chinese, Spanish, Russian, French, Japanese, German, Swedish, Finnish
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Display	<ul style="list-style-type: none"> <li>LCD with backlight</li> <li>Graphic trend display of any parameter</li> <li>Character height up to 16 mm</li> </ul>
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Alarm	Audible alarm function
Data logging capacity	2700 real time data points
Logging interval	1 s to 12 h
Logging duration	1 min ... memory full
Resolution	0.01 %RH, 0.01 °C/°F, 0.01 hPa, 0.01 a <sub>w</sub> , 10 ppm / 0.01 %CO <sub>2</sub>

## Spare Parts and Accessories

Weatherproof Carrying Case	MI70CASE3
Soft Carrying Case	MI70SOFTCASE
MI70 Link software with USB cable	219687
MI70 Link software with serial port cable	MI70LINK
Analog output cable	27168ZZ
10 m (32.81 ft) extension cable for probe	213107SP
Portable Sampling System (see separate data sheet)	DSS70A

### Connection Cables for Fixed Vaisala Dew Point Transmitters

For DMT242 transmitter	27160ZZ
For DMT340 series	211339
For DMT152, DMT143, and DMT132 transmitters	219980SP

## Battery Operation Time

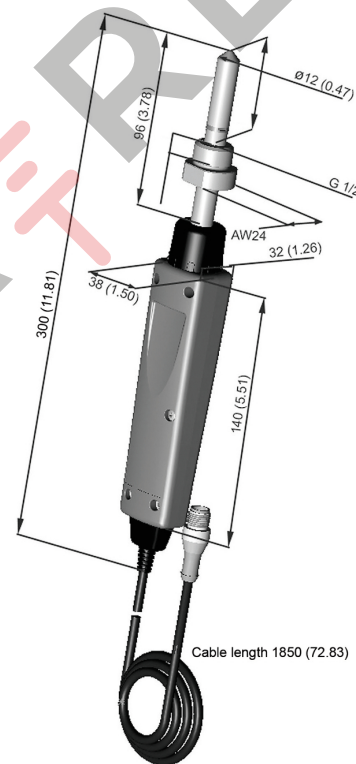
Typical charging time	4 hours
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### Operation Times

Continuous use	48 h typical at +20 °C (68 °F)
Data logging use	up to a month



MI70 dimensions in millimeters (inches)



Probe dimensions in millimeters (inches)



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