

# DM70

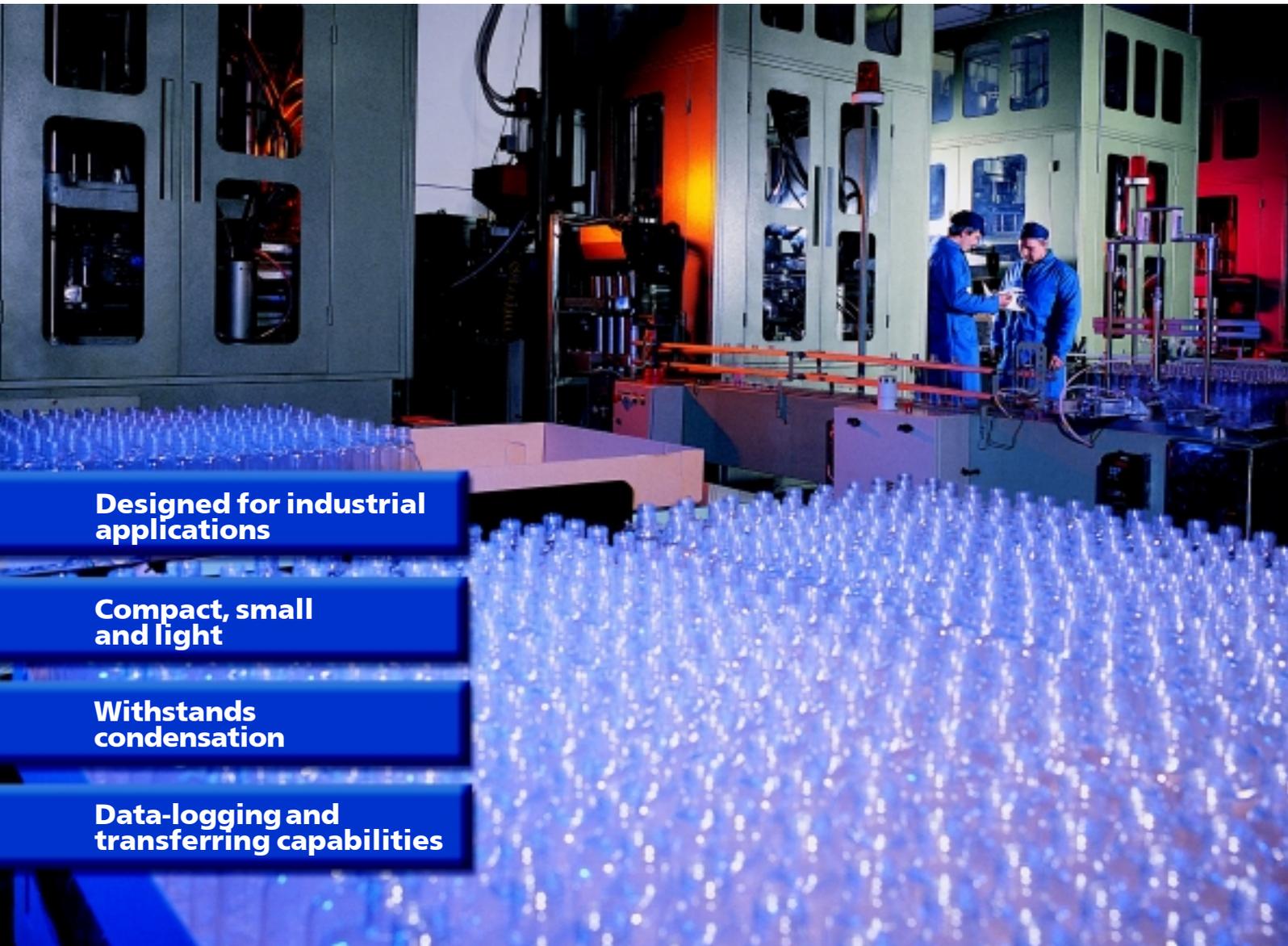
Hand-held Dewpoint Meter



Truly Fast Response - Superior Long-term Stability

# DM70 - When Dry Air Is Important

The **Vaisala DM70 Hand-held Dewpoint Meter** offers stable and fast measurement for industrial dewpoint applications.



**Designed for industrial applications**

**Compact, small and light**

**Withstands condensation**

**Data-logging and transferring capabilities**

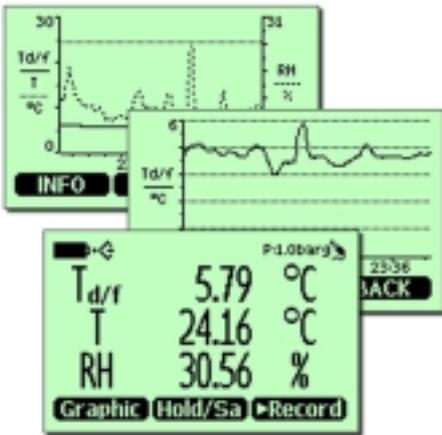
*Plastic drying before molding is one of many applications for DM70 Hand-held Dewpoint Meter. Excess moisture in the molding process causes imperfections on the end products.*

The DM70 Hand-held Dewpoint Meter measures dewpoint temperature accurately in a wide measurement range – from -60 °C to +60 °C. It has a truly fast response time between start-up from ambient conditions to low and high process dewpoints.

DM70 incorporates Vaisala's advanced DRYCAP® technology, which enables reliable and high performance dewpoint measurement. The probe withstands condensation and also measures directly in pressurized spaces.

DM70 has a versatile and easy-to-use menu based user interface and a clear graphical LCD display with data-logger function. It can also be used as a tool for reading the output of fixed Vaisala dewpoint transmitters like DMT242 and DMP248.

The optional ready-to-use Windows® software provides an easy way to handle measurement data in PC environment. An analog output option is also available. Low power consumption provides a long operation in the field. This makes DM70 even more user friendly.



*DM70 displays one to three parameters at a time either numerically or graphically.*

### **Convenient measurement in dry conditions**

#### **Various output variables**

DM70 displays user selectable hygrometric units, such as dewpoint/frostpoint temperature, relative humidity, ppm<sub>v</sub> (humid air volume/dry air volume) and also the process temperature. The meter displays one to three parameters at a time in metric or non-metric units.

#### **Both numerical and graphical measurement data**

The measurement data can be displayed either numerically or graphically in the LCD display. One key press will change the

readout to a real time graphics display, so the user will know when the dewpoint plateau is reached.

The HOLD/SAVE function enables the user to freeze a certain display function and save it into the meter's memory. Graphic history shows the data curve from the time turning on the device. The graph is easily scalable in the display.

#### **Easy-to-use user interface**

The DM70 Hand-held Dewpoint Meter has an easy-to-use user interface. The default shortcut keys refer to the functions GRAPHIC, HOLD/SAVE and RECORD. If needed, the functions behind the shortcut keys can be easily changed corresponding to the user's needs.

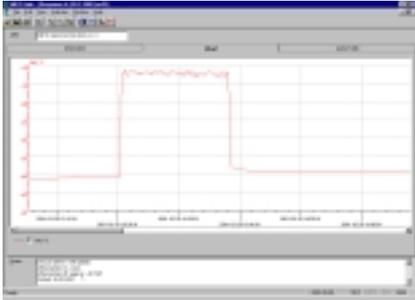
#### **Data-logging and data transferring capability**

The DM70 Dewpoint Meter can be used as an on-site data-logger. To simplify operation, DM70 has a sophisticated MI70 Link Windows® software program. It is a practical tool for transferring logged data and real time measurement data from DM70 to a PC.

*The DM70 Dewpoint Meter has rugged structure. The housing is protected against dust and splashed water, which ensures reliable operation even in most demanding conditions.*



# Free and Easy Measurement in the Field



*The MI70 Link program enables the easy handling of the measurement data of DM70 by a computer both in graphical and numerical formats.*

## **Lightweight construction**

The DM70 Dewpoint Meter is small and rugged and therefore an ideal choice for even the most demanding applications. The long battery life enables free and easy use of the DM70 Meter in the field.

## **Long-term stability**

The DRYCAP® measurement technology in DM70 provides revolutionary long-term stability. This leads to a long calibration interval. An additional advantage is the sensor's durability against condense.

DM70 Hand-held Dewpoint Meter is calibrated at the factory against internationally traceable standards and delivered with a calibration certificate. DM70 can also be sent to Vaisala Service Center for a traceable re-calibration.

## **Various applications Spot-checking instrument**

Vaisala's DM70 Hand-held Dewpoint Meter has a truly fast response time for temporary dewpoint measurements. DM70 meter can be used in many industrial dewpoint spot-checking applications, such as compressed air lines and plastic molding processes.

## **Field-checking instrument**

DM70 can perform the one-point calibration check in the process for Vaisala's DMT242 and DMP248 fixed dewpoint transmitters. Transmitters can be connected to DM70 by using optional connection cables.

## **DSC74 Sample Cell Adapter**

DM70 can be connected to the pressurized processes easily by using Vaisala's Sample Cell Adapter DSC74. It is delivered with several installation options.



*The DM70 Hand-held Dewpoint Meter equipped with DSC74 Sample Cell Adapter.*

## **DRYCAP® and Auto-calibration**



The microprocessor based DM70 Dewpoint Meter incorporates the DRYCAP® Thin Film Polymer

Sensor and auto-calibration procedure, a combination that makes it ideal for use in dry ambient applications.

## **Auto-calibration corrects dry-end drifts**

The auto-calibration procedure works on-line while the process is running. The software makes a correction for any dry end drift to the calibration curve. This intelligent auto-calibration procedure gives the DM70 Hand-held Dewpoint Meter a superior

performance with minimum maintenance.

## **Withstands condensation**

DRYCAP® Sensor is immune to water condensation, particulate contamination, oil mist and most chemicals. Since the sensor can withstand condensation, its performance is unmatched for low dewpoint applications that could experience process water spikes, such as condensation in the pipeline during system failure or startup.

# Technical Information

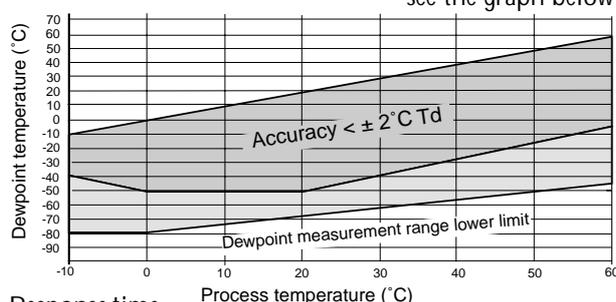
## DMP74 Dewpoint Measurement Probe

### Measured variables

#### Dewpoint

Measurement range (typical) -60...+60 °C  
Accuracy -50...+60 °C ±2 °C

see the graph below



#### Response time

63% (90%) at flow rate 0.2 m/s, 1 bar pressure, +20 °C

-50 → 0 °C T <sub>d</sub>	10 s [35 s]
0 → -20 °C T <sub>d</sub>	10 s [35 s]
0 → -40 °C T <sub>d</sub>	15 s [120 s]
0 → -50 °C T <sub>d</sub>	35 s [300 s]

#### Temperature

Measurement range -10...+60 °C  
Accuracy at +20 °C ±0.2 °C  
Typical temperature dependence of electronics ±0.005 °C/°C  
Temperature sensor Pt100 IEC751 1/3 class B

#### ppm volume concentration

Measurement range (typical) 40...200 000 ppm  
Accuracy at +20 °C 7.3 ppm + 8.3% of reading

#### Relative humidity

Measurement range 0...100 %RH  
Accuracy at +20 °C  
RH < 10% ±0.025 %RH + 8.75% of reading  
RH > 10% ±0.7 %RH + 2% of reading

#### Measurement environment

Temperature -10...+60 °C  
Pressure 0...20 bar  
Sample flow rate no effect

#### Probe general

Sensor DRYCAP® 180S  
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 (NEMA4)  
Weight 350 g

## MI70 Measurement Indicator

### Indicator general

Menu languages English, German, French, Finnish and Spanish  
Display LCD with backlight  
Graphic trend display of any parameter  
Character height up to 16 mm  
Probe inputs 1 or 2  
Power Supply Rechargeable NIMH battery pack  
with AC-POWER or 4xAA size alkalines, type IEC LR6  
Analog output 0...1 VDC  
Output resolution 0.6 mV  
Data interface RS232C  
Data-logging capacity 900...2700 points with real time  
Alarm Audible alarm function  
Operating temperature range -10 ...+40 °C  
Operating humidity range non-condensing  
Housing classification IP54  
Weight 400 g

### Battery operation time

Continuous use 48 h typical at +20 °C  
Datalogging use up to 30 days

## DMP74 Probe + MI70 Indicator = DM70 Hand-held Dewpoint Meter

### General

Housing materials ABS/PC blend  
Storage temperature -40...+70 °C  
Storage humidity 0..100 %RH non condensing  
Total weight 750 g

### Electromagnetic compatibility

Complies with the following standard:  
EN 61326-1:1997 + Am1:1998, Electrical equipment for measurement, control and laboratory use - EMC requirements - Generic Environment.

### Accessories

DSC74 sample cell adapter  
sampling system for pressurized processes  
Pressure range 0...10 bar<sub>g</sub>  
Weight 300 g  
Connection cables  
for DMT242 Transmitter order no: 27160ZZ  
for DMP248 Transmitter order no: 27159ZZ  
Analog output cable order no: 27168ZZ  
Windows® software including PC connection cable  
order no: MI70LINK

Specifications subject to change without prior notice.  
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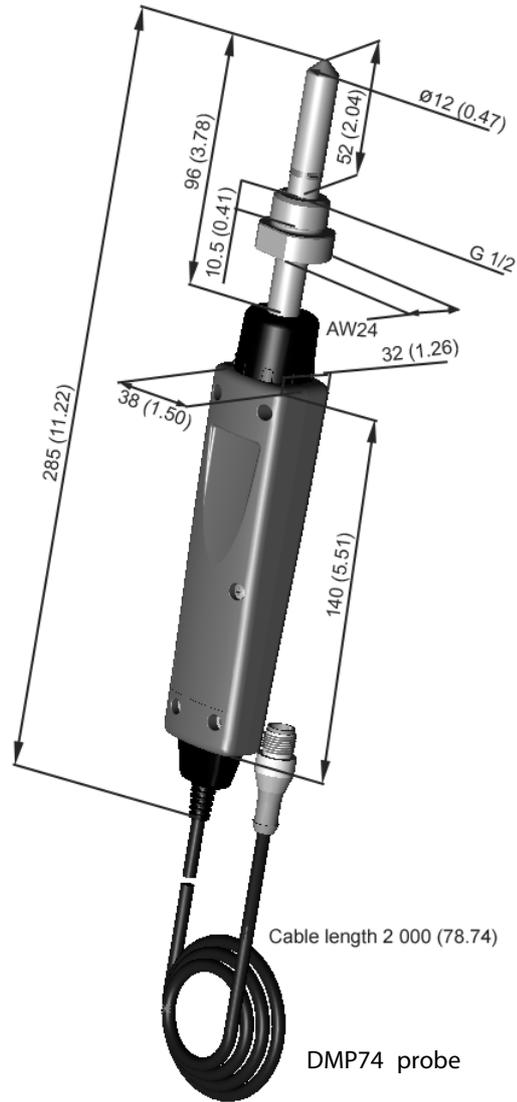
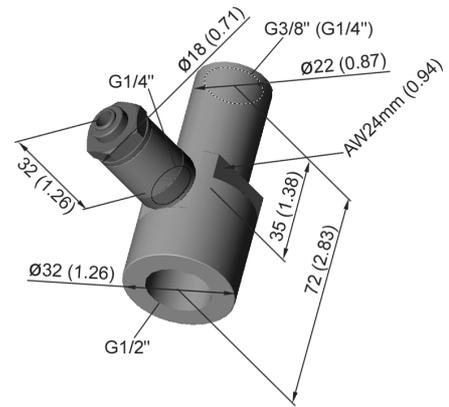


# Dimensions

MI70 indicator



DSC74 sample cell adapter



## MI70 Indicator - multiple probe options

MI70 Indicator is a general indicator with multiple probe options. It enables the measurement of several different parameters simply by changing the probe.

Please ask further information about other probe options for MI70 Indicator from Your local Vaisala dealer.