

## DM70 Hand-held Dewpoint Meter for Spot Checking and Field Verification

### FEATURES/BENEFITS

- New DRYCAP® polymer-based sensor provides accuracy, reliability, long-term stability and fast response
- Unique automatic self-calibration
- $\pm 2^\circ \text{C}$  accuracy down to  $-58^\circ \text{F}$  ( $-50^\circ \text{C}$ )
- Data logging and transferring capabilities
- Multilingual, menu-based interface
- Numeric and graphical display
- Sample cell adapter for pressurized air lines

The DM70 provides a new level of functionality in hand-held dewpoint meters. It serves as an independent data logger, and an integrated calibration reference for the DMT242 and DMP246 transmitters.

The DM70 measures dewpoint temperature accurately in a wide measurement range: from  $-58^\circ \text{F}$  to  $+140^\circ \text{F}$  ( $-50^\circ \text{C}$  to  $+60^\circ \text{C}$ ). It features a fast response time between start-up and low or high process dewpoints. The DM70 incorporates Vaisala's advanced DRYCAP® polymer-based technology, which enables reliable and high performance dewpoint measurement. The probe withstands condensation and may be placed directly in pressurized spaces.

### Numerical and graphical measurement data

Measurement data can be displayed numerically or graphically in the LCD display. One key press changes the readout to a real time graphics display, so the user will know when the dewpoint plateau is reached. The graphic history shows the data curve from the time the device was turned on. It is easily scalable in the display.

### Data-logging & data-transferring capability

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

### New Dewpoint Technology

The DRYCAP® measurement technology, with the patented auto-calibration feature, provides revolutionary long-term stability that results in a long calibration interval. Another advantage is the sensor's durability against condensation.

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



*DM70 Hand-held Dewpoint Meter with optional Sample Cell Adapter*

### Various Applications

#### Spot-checking instrument

The DM70 has a fast response time for temporary dewpoint measurements. It can be used in industrial dewpoint spot-checking applications, such as compressed air lines and plastic molding processes.

#### Field-calibration instrument

The 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 with optional connection cables.

#### DSC74 Sample Cell Adapter

The DM70 can easily be connected to pressurized processes by using the optional Sample Cell Adapter/Quick Connector DSC74.

#### DM70KIT

The DM70 Kit includes:

- DM70 indicator + probe with rechargeable battery and 115 VAC adapter
- MIK70 Link and analog output signal cable
- DMP74 Probe
- DSC74 Sample cell and quick connector
- Carrying case
- Certificate of calibration, traceable to NIST

## TECHNICAL DATA - DM70

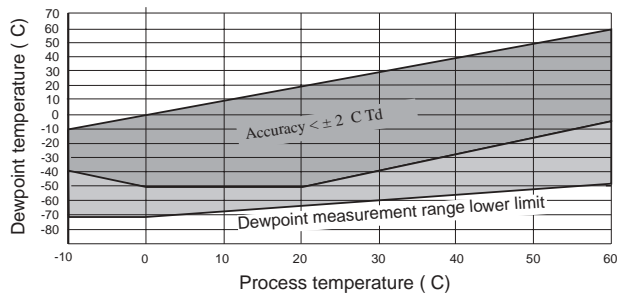
### DMP74 Dewpoint Measurement Probe

#### Measured variables

#### Dewpoint

Measurement range (typical)	-76...+140 °F (-60...+60 °C)
Accuracy -50...+60 °C	±3.6 °F (±2 °C)

see the graph below



#### Response time

63% (90%) at flow rate 0.2 m/s, 1 bar pressure, +68 °F (+20 °C)	
-58 to 32 °F $T_d$ (-50 to 0 °C $T_d$ )	10 s [35 s]
32 to -4 °F $T_d$ (0 to -20 °C $T_d$ )	10 s [35 s]
32 to -40 °F $T_d$ (0 to -40 °C $T_d$ )	15 s [120 s]
32 to -58 °F $T_d$ (0 to -50 °C $T_d$ )	35 s [300 s]

#### Temperature

Measurement range	14 °F ...140 °F (-10...+60 °C)
Accuracy at +68 °F (+20°C)	±0.36 °F (±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 +68 °F (+20°C)	7.3 ppm + 8.3% of reading

#### Relative humidity

Measurement range	0...100 %RH
Accuracy at +68 °F (+20°C)	
RH < 10%	±0.025 %RH + 8.75% of reading
RH > 10%	±0.7 %RH + 2% of reading

#### Measurement environment

Temperature	14 °F ...140 °F (-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)
part no: 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	14 °F ...104 °F (-10...+40 °C)
Operating humidity range	non-condensing
Housing classification	IP54
Weight	400 g

#### Battery operation time

Continuous use	48 h typical at +68 °F (+20°C)
Data logging use	up to 30 days

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

#### Dewpoint Meter

#### General

Housing materials	ABS/PC blend
Storage temperature	-40 ...158 °F (-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 and DM70KIT

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
Carrying Case	MI70Case

#### DM70 Calibration Kit

order no: DM70KIT  
includes DM70 indicator with rechargeable battery and 115 VAC adapter; MIK70 link & analog output signal cable; DMP74 probe; DSC74 Sample cell and quick adapter; carrying case; certificate of calibration, traceable to NIST.

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