

DM70 Hand-Held Dewpoint Meter for Spot-Checking Applications



The Vaisala DRYCAP® Hand-Held 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® Hand-Held 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.

Three probe models, all with auto-calibration, 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.

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.

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.

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
- Easy-to-use user interface
- Data can be logged and transferred to a PC via MI70 Link software
- Compact, small and light
- NIST traceable calibration (certificate included)

An analog output is also available.

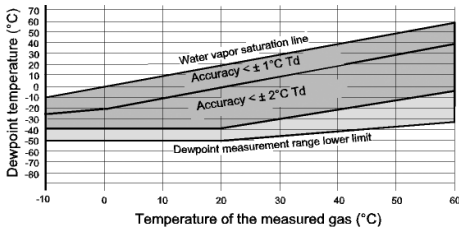
The DM70 meter is suitable for direct process dew point measurement in a wide temperature and pressure range. For more demanding applications, the DM70 can be used with the Vaisala sampling cell adapters, or with the Vaisala DRYCAP® Sampling System DSS70A.

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)
 (see graph)



Dew point accuracy vs. measurement conditions

Response time

flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]
 0 → -40 °C T_d (32 → -40 °F T_d) 20 s [120 s]
 -40 → 0 °C T_d (-40 → 32 °F T_d) 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) ±0.2 °C (±0.36 °F)
 Typical temperature dependence of electronics ±0.005 °C/°C (±0.005 °F/°F)

Temperature sensor Pt100 RTD Class F0.1 IEC 60751

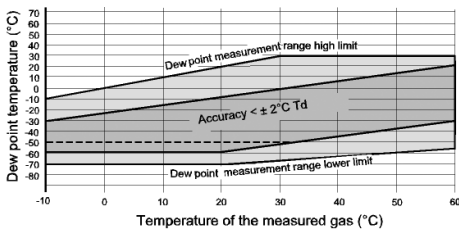
OTHER VARIABLES AVAILABLE

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

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)
 (see graph)



Dew point accuracy vs. measurement conditions

Dotted line:

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

Response time

flow rate 0.2 m/s, 1 bar pressure, +20 °C (+68 °F) 63% [90%]
 0 → -60 °C T_d (32 → -76 °F T_d) 50 s [340 s]
 -60 → 0 °C T_d (-76 → 32 °F T_d) 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) ±0.2 °C (±0.36 °F)
 Typical temperature dependence of electronics ±0.005 °C/°C (±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

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

MI70 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-adaptor
 or 4xAA size alkalines, 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

Connection cables for fixed Vaisala dew point transmitters	
for DMT242 transmitter	27160ZZ
for DMT340 series	211339
for DMT152, DMT143, and DMT132 transmitters	219980
for DMT142 transmitter	211917ZZ
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	DSS70A
(see separate data sheet)	

Dimensions

Dimensions in mm (inches)

