VAISALA

DMT340 Series Dew Point and Temperature Transmitters

For Very Dry Conditions



Features

- Measures dew point from

 -70 ... +80 °C (-94 ... +176 °F) with an accuracy of ±2 °C (±3.6 °F)
- Condensation-resistant
- Unique auto-calibration feature maintains accuracy over long term
- Compatible with Vaisala DRYCAP® Handheld Dew Point Meter DM70
- Traceable calibration to measurements and analog outputs (certificates included)
- Graphical display and keypad for convenient operation
- Optional alarm relays and mains power supply module
- Up to three analog outputs, RS-232/485, LAN
- Modbus protocol support (RTU/ TCP)

Vaisala DRYCAP® Dew Point and Temperature Transmitter Series DMT340 is designed for industrial low-humidity applications such as industrial drying, compressed air systems, semiconductor industry, dry rooms, baking ovens, and metal heat treatment.

Vaisala DRYCAP® Sensor Benefits

- Accurate and reliable measurement
- Excellent long-term stability
- Fast response time
- Resistant to environmental factors and condensation

Stability at Low Dew Points

The Vaisala DRYCAP® sensor is immune to particulate contamination, water condensation, oil vapor, and most chemicals. The sensor is condensation resistant and recovers perfectly if exposed to liquid water. Fast reaction time and stability make its performance unmatched also in dynamic and low dew point applications.

Graphical Display of Measurement Data and Trends for Convenient Operation

The DMT340 features a large numerical and graphical display with a multilingual menu and keypad. It allows users to easily monitor operational data, measurement trends, and access measurement history for the past 12 months.



The display shows measurement trends, real-time data, and measurement history.

Versatile Outputs and Data Collection

The DMT340 can support up to three isolated analog outputs. Optional AC mains power and relay outputs are also available.

In addition to the analog outputs, the DMT340 supports Modbus RTU and TCP/IP communication protocol.

The data logger, with real-time clock and battery backup, guarantees reliable logging of measurement data for over 4 years. The display alarm allows tracking of any measured parameter, with freely configurable low and high limits. The recorded data can be viewed on the local display or transferred to a PC with Microsoft Windows® software. The transmitter can also be connected to a network with an optional LAN interface, which enables an Ethernet connection. A

USB service cable makes it easy to connect the DMT340 to a PC via the service port for modifying settings or reading logged data.

Easy Installation

With multiple options to choose from, the instrument can be tailored to meet the specific needs of each individual application and is delivered installation-ready and pre-configured for each delivery. Quick delivery time and global service network make DMT340 a perfect choice for any project.



The Vaisala DRYCAP® Handheld Dew Point Meter DM70 is ideal for field checking DMT340 transmitters.

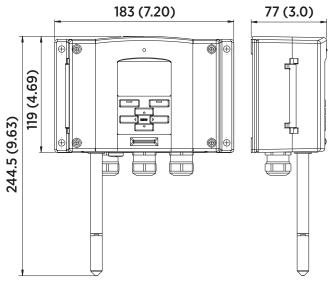
| | DMT342 | DMT344 | DMT347 | DMT348 |
|-----------------------|-----------------------------|---|---|---|
| Pressure range | 0 50 bar/0 725 psia | 0 50 bar/0 725 psia | 0 10 bar/0 145 psia | 0 40 bar/0 580 psia |
| Mechanical durability | Up to 250 bar/ 3625 psia | Up to 100 bar/1450 psia | Up to 10 bar/145 psia | Up to 70 bar/1015 psia |
| Probe diameter | 12 mm/0.5 in | 12 mm/0.5 in | 12 mm/0.5 in | 12 mm/0.5 in |
| Installation | Flange 36 mm/1.4 in | Fitting body M22 x 1.5 Fitting body NPT 1/2 in | Fitting body R 3/8 in ISO Fitting body G 1/2 in ISO Fitting body NPT 1/2 in | Fitting body R1/2 in ISO Fitting body NPT 1/2 in |
| Ball-valve set | | | | BALLVALVE-1 |
| Sampling cell | HMP302SC | | | DMT242SC or DMT242SC2 |

DMT340 Series Dew Point and Temperature Transmitters for Very Dry Conditions

DMT341 for Installations in Dry Spaces



DMT341 display shows measurement trends, real-time data, and measurement history. DMT341 is made for installations in dry rooms where the entire dew point transmitter needs to be inside the dry space. The concept is easy to clean and suitable also for cleanrooms.

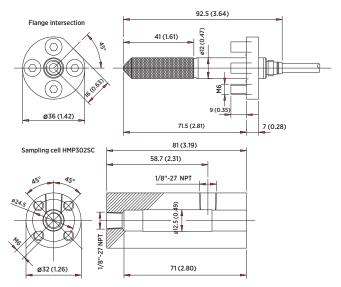


DMT341 dimensions in mm (inches)

DMT342 with Small Size Flanged Probe



The DMT342 probe is installed using a flange or sampling cell. The small probe is ideal for integration into larger equipment or applications with high pressures.



DMT342 dimensions in mm (inches)

DMT344 with Probe for High Pressures



The DMT344 features a threaded connection for extended pressures with different fitting-body options. It is ideal for permanent installation into pressurized or vacuum processes.

MPT 1/2 120 (4.72) 170 (6.69)

DMT344 dimensions in mm (inches)

DMT347 with Small-Sized Probe



The DMT347 probe is ideal for pressurized or vacuum applications in tight spaces. The small probe is installed using Swagelok® connectors.

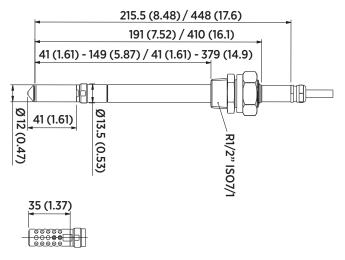
84 (3.31) 41 (1.61) OSI (1.60) Hex 22 mm (0.87) (0.87)

DMT347 dimensions in mm (inches)

DMT348 with Probe for Pipeline Installations



The DMT348 is ideal for installation into pressurized or vacuum processes where the probe needs to be able to be removed while the process is running. The probe depth is adjustable.



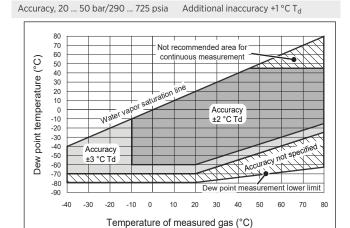
Optional filter for low pressures, suitable for all models, dimensions in mm (inches). Optional filter provides faster gas exchange to the sensor in applications where protection from particulates is not needed.

DMT340 Series Technical Data

Measurement Performance

Dew Point

| Sensor | Vaisala DRYCAP® 180M |
|--------------------------------------|--|
| Measurement range | -70 +80 °C (-94 +176 °F) T _d |
| Measurement range for continuous use | -70 +45 °C (-94 +113 °F) T _d |
| Accuracy up to 20 bar/290 psia | $\pm 2~^{\circ}\text{C}/\pm 3.6~^{\circ}\text{F}$ (see the accuracy graph below) |



Dew Point Accuracy vs. Measurement Conditions

| 63% [90%] at +20 °C gas temperature | | |
|---|--|--|
| T63 [T90] response times at 20 °C and 1 I/min flow: | | |
| 5 s [10 s] | | |
| 45 s [10 min] | | |
| | | |

| 20 00 0 1 (1 70 1 1 1) | 15 5 [10 111111] |
|-----------------------------------|--------------------------------|
| Temperature | |
| Measurement range | 0 +80 °C (+32 +176 °F) |
| Accuracy | ±0.2 °C at room temperature |
| Temperature sensor | Pt100 RTD Class F0.1 IEC 60751 |
| Relative Humidity | |
| Measurement range | 0 70 %RH |
| Accuracy (RH <10 %RH, at + 20 °C) | ±0.004 %RH + 20% of reading |
| Concentration by Volume (ppm) | |
| Measurement range (typical) | 10 2500 ppm |
| Accuracy (at + 20 °C, 1 bar) | 1 ppm + 20% of reading |

Other measurement parameters available (model-dependent): mixing ratio, absolute humidity, pressure dew point calculated to 1 bar, temperature difference (T-Td), water vapor pressure

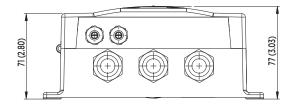
Operating Environment

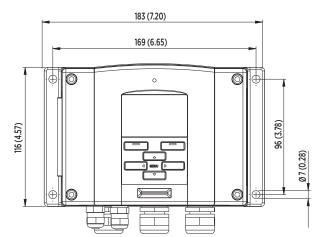
(Surge immunity)

| Operating temperature for probes | -40 +80 °C (-40 +176 °F) | |
|--|---|--|
| Mechanical durability | Up to +180 °C (+356 °F) | |
| Mechanical durability of transmitter body | 40 +60 °C (-40 +140 °F) | |
| Mechanical durability with display | 0 +60 °C (+32 +140 °F) | |
| Storage temperature range | -55 +80 °C (-67 +176 °F) | |
| Pressure range for probes | See probe specifications | |
| Sample flow rate | No effect | |
| Measured gases | Non-corrosive gases | |
| Electromagnetic compatibility | Complies with EMC standard EN61326-1, Industrial environment | |
| Note: Transmitter with display test impedance of 40 Ω is used in IEC61000-4-5 | | |

Inputs and Outputs

| Operating voltage | 10 35 VDC, 24 VAC ±20 % | | | |
|--|--|--|--|--|
| with optional power supply module | 100 240 VAC 50/60 Hz | | | |
| Power Consumption at 20 °C (U _{in} 24VDC) | | | | |
| RS-232 | Max. 25 mA | | | |
| U _{out} 2 x 0 1V / 0 5 V / 0 10 V | Max. 25 mA | | | |
| I _{out} 2 x 0 20 mA | Max. 60 mA | | | |
| Display and backlight | + 20 mA | | | |
| During sensor purge | Max. + 110 mA | | | |
| Analog Outputs (2 Standard, 3rd Optio | nal) | | | |
| Current output | 0 20 mA, 4 20 mA | | | |
| Voltage output | 0 1 V, 0 5 V, 0 10 V | | | |
| Accuracy of analog outputs at 20 °C | 0.05 % full scale | | | |
| Temperature dependence of the analog outputs | ± 0.005 %/°C full scale | | | |
| External Loads | | | | |
| Current outputs | RL < 500 Ω | | | |
| 0 1 V output | RL > 2 kΩ | | | |
| 0 5 V and 0 10V outputs | RL > 10 kΩ | | | |
| Wire size | 0.5 2.5 mm ² (AWG 20 14) stranded wires recommended | | | |
| Digital outputs | RS-232, RS-485 (optional) | | | |
| Protocols | ASCII commands, Modbus RTU | | | |
| Service connection | RS-232, USB | | | |
| Relay outputs | 0.5 A, 250 VAC, SPDT (optional) | | | |
| Ethernet Interface (Optional) | | | | |
| Supported standards | 10BASE-T, 100BASE-TX | | | |
| Connector | 8P8C (RJ45) | | | |
| IPv4 address assignment | DHCP (automatic), static | | | |
| Protocols | Telnet, Modbus TCP/IP | | | |
| Optional Data Logger with Real-time Clock | | | | |
| Logged parameters | Max. three with trend/min./max. values | | | |
| Logging interval | 10 sec (fixed) | | | |
| Max. logging period with max. temporal resolution | 4 years, 5 months | | | |
| Logged points | 13.7 million points per parameter | | | |
| Battery lifetime | Min. 5 years | | | |
| Display | LCD with backlight, graphical trend display of any parameter | | | |
| Menu languages | English, Chinese, Finnish, French, German, Japanese, Russian, Spanish, Swedish | | | |





Dimensions in mm (inches)

Mechanical Specifications

| Cable bushing | M20x1.5 for cable diameter 8 11 mm/ 0.31 0.43 in | |
|---|---|--|
| Conduit fitting | 1/2" NPT | |
| User cable connector (optional) | M12 series 8-pin (male) | |
| Option 1 | Female plug with 5 m (16.4 ft) black cable | |
| Option 2 | Female plug with screw terminals | |
| USB-RJ45 Serial Connection Cable | 219685 | |
| Probe cable diameter | 5.5 mm (0.22 in) | |
| Standard probe cable lengths | 2 m, 5 m, or 10 m (6.6 ft, 16 ft, or 33 ft) | |
| (Additional cable lengths available, see order forms for details) | | |
| Housing material | G-AISi 10 Mg (DIN 1725) | |
| Housing classification | IP66 IP65 (NEMA4X) with local display | |
| Weight (depending on selected probe, cable, and modules) | 1.0 3.0 kg (2.2 6.6 lb) | |





For more information, visit www.cik-solutions.com or contact us at info@cik-solutions.com

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