

## DMT340 Series Dewpoint and Temperature Transmitters for Very Dry Conditions



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

### Features/Benefits

- Measures dew points from -60 °C to +80 °C (-76 ... +176 °F) with the accuracy of  $\pm 2$  °C ( $\pm 3.6$  °F)
- Vaisala DRYCAP® Sensor provides accurate, reliable measurement with excellent long-term stability and fast response
- Withstands condensation
- Unique auto-calibration feature
- Optional alarm relays, local display and mains power supply module
- Compatible with Vaisala DRYCAP® Hand-Held Dewpoint Meter DM70
- NIST traceable (certificate included)
- 3 analog outputs and a serial interface, WLAN/LAN
- MODBUS protocol support (RTU/TCP)

The Vaisala DRYCAP® Dewpoint and Temperature Transmitter Series DMT340 is designed for industrial low humidity applications. Typical applications include compressed air drying and metal treatment. The device is very reliable, easy to use and economical to maintain.

### Stability in Low Dew Points

The Vaisala DRYCAP® Sensor is immune to particulate contamination, water condensation, oil vapor and most chemicals. Since the sensor withstands condensation, its performance is unmatched for low dew point applications that experience water spikes in the process. The sensor recovers rapidly from contact with free water.

### Patented Auto-Calibration

The stability of the DMT340 is due to the unique auto-calibration

function, patented by Vaisala. The auto-calibration makes the transmitter perform a calibration and adjustment by itself while the measured process is running. If the measurement accuracy is not confirmed, corrections are made automatically. The procedure is so quick and corrections are so minor that it will go unnoticed. This ensures low maintenance and high performance. To continue performance at the highest level, the transmitter can be sent to Vaisala for a NIST traceable calibration. Calibration intervals depend on the application; in normal conditions, a NIST traceable calibration in every two years is recommended.

### Graphical Measurement Trend and History Display

The DMT340 can be ordered with a large numerical and graphical display with a multilingual menu. It allows

the user to monitor measurement trends and one-year history. The optional data logger with real-time clock makes it possible to generate more than four years of measured history and zoom in on any desired time or time frame. The display alarm allows tracking of any measured parameter, with a freely configurable low and high limit.

### Versatile Outputs and (Wireless) Data Collection

The DMT340 can be connected to a network with an optional (W)LAN interface, which enables a (wireless) Ethernet connection.

For serial interface also the USB connection, RS232 and RS485 can be used. Additionally an alarm relay option is available.

The transmitter can have up to three analog outputs. Galvanic isolation of supply power and analog outputs are also offered.

The recorded measurement data can be viewed on the display or transferred to a PC with Microsoft Windows® software.

### Easy Installation

The DMT340 has a variety of features to choose from. Units are delivered installation-ready.



The Vaisala DRYCAP® HandHeld Dewpoint Meter DM70 is ideal for field checking DMT340 transmitters.



The DMT342 probe is installed using a flange or sampling cell. The small probe is ideal for integrating into larger equipment.

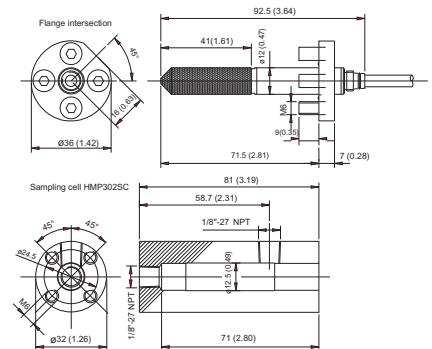
#### Probe Specifications

##### DMT342 with Small Size Flanged Probe

Pressure range	0 ... 50 bar/0 ... 725 psia
Mechanical durability	up to 250 bar/ 3625 psia
Probe diameter	12 mm/0.5 inch
Installation	
Flange	36 mm/1.4 inch
Sampling cell	HMP302SC

#### Dimensions

Dimensions in mm (inches)



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

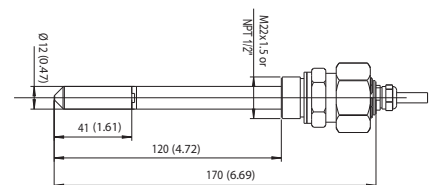
#### Probe Specifications

##### DMT344 with Probe for High Pressures

Pressure range	0 ... 50 bar/0 ... 725 psia
Mechanical durability	up to 100 bar/ 1450 psia
Probe diameter	12 mm/0.5 inch
Installation	
Fitting Body	M22 x 1.5
Fitting Body	NPT 1/2"

#### Dimensions

Dimensions in mm (inches)





The DMT347 probe is ideal for tight spaces with thread connection. The small probe is installed using the Swagelok® connectors.

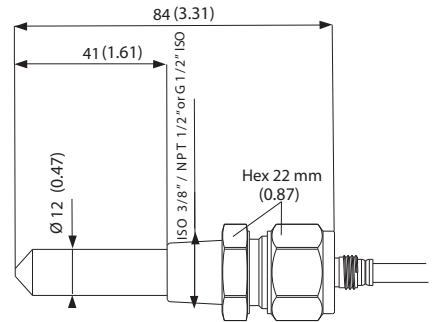
### Probe Specifications

#### DMT347 with Small Sized Probe

Pressure range	0 ... 10 bar/0 ... 145 psia
Mechanical durability	up to 10 bar/ 145 psia
Probe diameter	12 mm/0.5 inch
Installation	
Fitting Body	R 3/8" ISO
Fitting Body	G 1/2" ISO
Fitting Body	NPT 1/2"

### Dimensions

Dimensions in mm (inches)



The DMT348 is ideal for installations in pressurized processes where the probe needs to be removed while the process is running. The probe depth is adjustable.

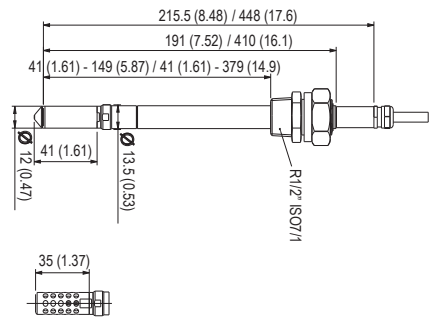
### Probe Specifications

#### DMT348 with Probe for Pipeline Installations

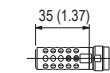
Pressure range	0 ... 40 bar/0 ... 580 psia
Adjustable length	41 ... 149/371 mm/ 1.61 ... 5.87/14.6 inch
Installation	
Fitting Body	R1/2" ISO
Fitting Body	NPT 1/2"
Ball Valve Set	BALLVALVE-1
Sampling Cell	DMT242SC or DMT242SC2

### Dimensions

Dimensions in mm (inches)



Optional filter for low pressures  
(for all models)

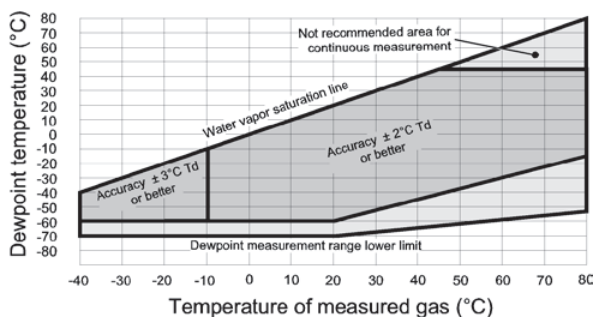


# Technical Data

## Measured Parameters

### DEW POINT

Sensor	Vaisala DRYCAP®180M	
Measurement range	-60 ...+80 °C (-76 ...+176 °F) Td	
For continuous use	-60 ...+45 °C (-76 ...+113 °F) Td	
Accuracy	±2 °C/±3.6 °F see the accuracy graph below	
up to 20 bar/290 psia	±2 °C/±3.6 °F see the accuracy graph below	
20 ...50 bar/290 ...725 psia	additional inaccuracy +1 °C Td	



### Dew point accuracy vs. measurement conditions

Response time	63% [90%] at +20°C gas temperature	
Flow rate	1 l/min and 1 bar pressure	
-60 ...-20 °C Td (-76 ...-4 °F Td)	5s [10s]	
-20 ...-60 °C Td (-4 ...-76 °F Td)	45s [10min]	

### TEMPERATURE

Measurement range	0 ...+80 °C (+32 ...+176 °F)	
Accuracy	±0.2 °C at room temperature	
Temperature sensor	Pt 100 IEC 751 1/3 class B	

### RELATIVE HUMIDITY

Measurement range	0 ... 70 %RH	
Accuracy (RH <10 %RH, at +20 °C)	±0.004 %RH + 20 % of reading	

PPM		
Measurement range (typical)	10 ...2500 ppm	
Accuracy (at +20 °C, 1 bar)	1 ppm + 20 % of reading	
Other measurement parameters available (depends on model) mixing ratio, absolute humidity, pressure dew point calculated to 1 bar, temperature difference (T <sub>Td</sub> ), water vapor pressure		

## Operating Environment

Operating temperature		
for probes	-40 ...+80 °C (-40 ...+176 °F)	
Mechanical durability	Up to +180 °C (+356 °F)	
for transmitter body	-40 ...+60 °C (-40 ...+140 °F)	
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	
Complies with EMC standard EN61326-1, Electrical equipment for measurement, control and laboratory use - EMC requirements; Industrial environment.		

## Inputs and Outputs

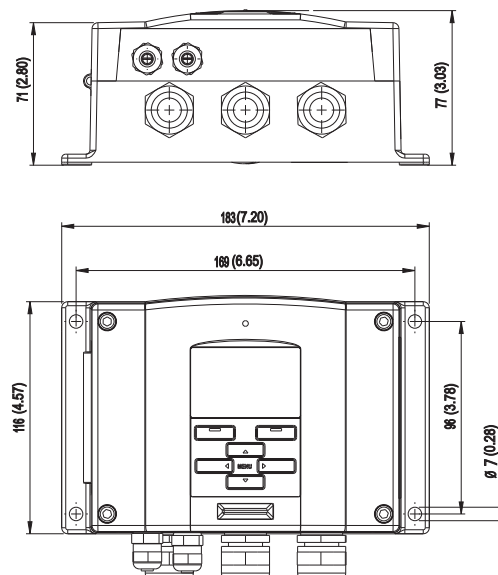
Operating voltage	10 ...35 VDC, 24 VAC	
with optional power supply module	100 ...240 VAC 50/60 Hz	
Power consumption @ 20 °C (U <sub>in</sub> 24VDC)		
RS-232	max 25 mA	
U <sub>out</sub> 2 x 0...1V / 0...5V / 0...10V	max 25 mA	
I <sub>out</sub> 2 x 0...20 mA	max 60 mA	
display and backlight	+ 20 mA	
during sensor purge	+ 110 mA max	
Analogue outputs (2 standard, 3rd optional)		
current output	0 ...20 mA, 4 ...20 mA	
voltage output	0 ... 1 V, 0 ... 5 V, 0 ... 10 V	
Accuracy of analogue outputs at 20 °C	0.05 % full scale	
Temperature dependence of the analogue outputs	± 0.005 %/°C full scale	
External loads		
current outputs	R <sub>L</sub> < 500 ohm	
0 ... 1V output	R <sub>L</sub> > 2 kohm	
0 ... 5V and 0 ... 10V outputs	R <sub>L</sub> > 10 kohm	
Max wire size	0.5 mm <sup>2</sup> (AWG 20) stranded wires recommended	
Digital outputs	RS-232, RS-485 (optional)	
Service connection	RS-232, USB	
Relay outputs	0.5 A, 250 VAC, SPDT (optional)	
Ethernet interface (optional)		
Supported standards	10/100Base-T	
Connector	RJ45	
Protocols	Telnet	
WLAN interface (optional)		
Supported standards	802.11b	
Antenna connector type	RP-SMA	
Protocols	Telnet	
Security	WEP 64/128, WPA	
Authentication / Encryption		
Open / no encryption		
Open / WEP		
WPA Pre shared key / TKIP		
WPA Pre shared key / CCMP (a.k.a. WPA2)		
Optional data logger with real-time clock		
Logged parameters	max. three with trend/min/max values	
Logging interval	10 sec (fixed)	
Max. logging period	4 years 5 months	
Logged points	13,7 million points per parameter	
Battery lifetime	min. 5 years	
Display	LCD with backlight, graphic trend display of any parameter	
Display menu languages	English, Chinese, Spanish, German, French, Japanese, Russian, Swedish, Finnish	

## Mechanics

Cable bushing	M20x1.5 for cable diameter 8 ... 11mm/0.31 ... 0.43"
Conduit fitting	1/2" NPT
User cable connector (optional)	M12 series 8 pin (male)
option 1	with plug (female) with 5 m / 16.4 ft black cable
option 2	with plug (female) with screw terminals
USB-RJ45 Serial Connection Cable	order no. 219685
Probe cable diameter	5.5 mm
Probe cable lengths	2 m, 5 m or 10 m
Housing material	G-AISI 10 Mg (DIN 1725)
Housing classification	IP 65 (NEMA 4X)

## Dimensions

Dimensions in mm (inches)



DRYCAP® is a registered trademark of Vaisala.



TYPE APPROVED PRODUCT  
CERTIFICATE NO.: A-11440

# VAISALA

For more information, visit  
[www.vaisala.com](http://www.vaisala.com) or contact  
us at [sales@vaisala.com](mailto:sales@vaisala.com)

Ref. B210952EN-B ©Vaisala 2011  
This material is subject to copyright protection, with all  
copyrights retained by Vaisala and its individual partners. All  
rights reserved. Any logos and/or product names are trademarks  
of Vaisala or its individual partners. The reproduction, transfer,  
distribution or storage of information contained in this brochure  
in any form without the prior written consent of Vaisala is strictly  
prohibited. All specifications — technical included — are subject  
to change without notice.

