VAISALA

www.vaisala.com

DMT142 Miniature Dewpoint Transmitter for OEM Applications

The Vaisala DRYCAP® Dewpoint Transmitter DMT142 is an ideal choice for small compressed air dryers, plastic dryers and other OEM applications.

Features/Benefits

- Miniature size dew point transmitter for e.g. small industrial dryer applications
- Vaisala DRYCAP® technology with auto-calibration
- Calibration interval of two years
- Dew point measurement range -60 ... +60 °C (-76 ... +140 °F) with an accuracy ±3 °C (±5.4°F)
- Withstands condensation
- Fast response time
- Compatible with Vaisala DRYCAP® Hand-Held Dewpoint Meter DM70
- NIST traceable (certificate included)

Vaisala DRYCAP®

The Vaisala DRYCAP® Dewpoint Transmitter DMT142 is a miniature dew point measurement instrument. The transmitter can be installed directly into pressurized systems at 50 bar (725 psia) maximum pressure. The long-term high performance is achieved with Vaisala DRYCAP® technology.

The sensor fully withstands getting wet, and therefore, the transmitter performs exceptionally well in applications that occasionally experience process water spikes, such as pipeline condensation during a system failure or start-up. The sensor is also immune to particulate contamination, oil vapor and most chemicals, and is insensitive to the flow rate.

Long Calibration Interval

The calibration interval of the DMT142 is two years. Additionally, the Vaisala DRYCAP® Hand-Held Dewpoint Meter DM70 can be used to confirm the performance of the DMT142 without disconnecting the transmitter.
For any adjustment needs, the transmitter can be sent to Vaisala Service.

The auto-calibration software works on-line while the process is running. If the measurement accuracy is not confirmed, corrections are made automatically.

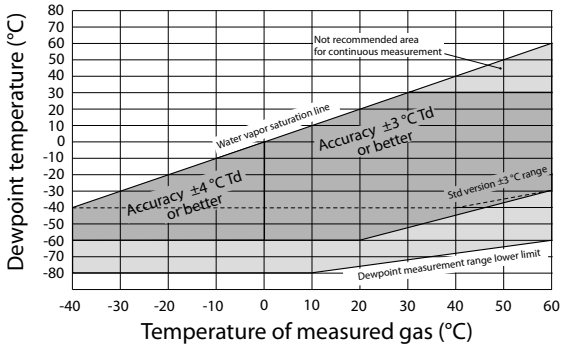
Easy Installation

The DMT142 has a variety of features to choose from, including different output and installation options. Due to its small size and light weight, the DMT142 is quickly and easily installed in tight spaces or in small-size pipelines.

Technical Data

Measured Variables

DEW POINT TEMPERATURE	
Measurement range(typical)	
Standard version	-40 ...+60 °C (-40 ...+140 °F) T_d
Extended version	-60 ...+60 °C (-76 ...+140 °F) T_d
SF_6 version	-50 ...+60 °C (-58 ...+140 °F) T_d
Analog output scalings	
option 1	-80 ...+20 °C (-112 ...+68 °F) T_d
option 2	-60 ...+40 °C (-76 ...+104 °F) T_d
option 3	free scaling
Accuracy	±3 °C (±5.4 F) T_d (see graph below)
(when the dew point is below 0 °C (32 °F), the transmitter outputs frostpoint)	



Dewpoint accuracy range for the extended version. Standard version with dotted line.

DEW POINT ACCURACY VS. MEASUREMENT CONDITIONS

Dew point accuracy range for the extended version. Standard version with dotted line.

Response time 63% [90%] at +20 °C gas temperature and 1 bar pressure

-60 -> -20 °C T_d (-76 -> -4 °F T_d)	5 s [10 s]
-20 -> -60 °C T_d (-4 -> -76 °F T_d)	45 s [10 min]

PPM VOLUME CONCENTRATION

Measurement range	70 ... 200 000 ppm
Accuracy at +20 °C (+68 °F), 1013 mbar	7.3 ppm + 9.2% of reading

Operating Environment

Temperature *)	-40 ... +60 °C (-40 ... +140 °F)
Relative humidity	0 ... 100 %RH
Pressure *)	0 ... 50 bar_a (725 psia)
Sample flow rate	no effect for measurement accuracy

*) For extended temperature down to -40 °C (-40 °F) or pressure up to 50 bar_a (725 psia) the supply voltage must be 24 ... 28 VDC.

Outputs

Analog output (scalable)	4 ... 20 mA (3-wire), 0 ... 1 V/5 V
Resolution for current output	0.002 mA
Resolution for voltage output	0.3 mV
Typical temperature dependence	0.005% of span / °C
Connector	4-pin M8 (IEC 60947-5-2)
connection cable with snap-on or thread locking available	
RS232 serial line for service use	with DMT142RS cable

General

Sensor	Vaisala DRYCAP® 180D
Measured gases	non-corrosive gases (SF_6 gas with special model)
Recommended calibration interval to confirm the specified accuracy	2 years
Operating voltage with voltage output	12 ... 28 VDC
Operating voltage with current output	18 ... 28 VDC
Supply current	
normal measurement	10 mA + load current
during self-diagnostics	max. 220 mA pulsed
Load for current output	max. 500 ohm
Load for voltage output	min. 10 kohm
Housing material	stainless steel body (AISI316L) plastic cap(ABS/PC)
Sensor protection	stainless steel sintered filter
Mechanical connection	G1/2" ISO 228-1 thread with bonded seal ring (U-seal)
Housing classification	IP64 (NEMA 3S)
Storage temperature range	-40 ... +80 °C (-40 ... +176 °F)
Weight	118 g (4.16 oz)

Complies with EMC standard EN61326-1, Electrical equipment for measurement, control and laboratory use - EMC requirements; Industrial environment.

Accessories

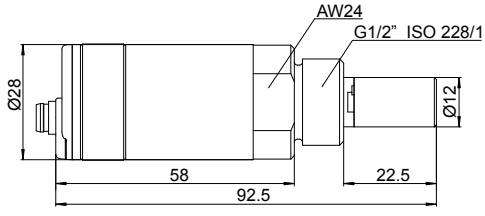
Connection cable for DM70	211917ZZ
Service cable for serial line	DMT142RS
Sampling cells	
basic sampling cell	DMT242SC
with Swagelok 1/4" male connectors	DMT242SC2
with quick connector and leak screw	DSC74
two-pressure sampling cell	DSC74B
cooling/venting coil	DMCOIL

See DM70 / Portable Sampling Systems and Sampling Cells for further information about sampling cells available

Loop powered external display	226476

Dimensions

in mm



VAISALA

For more information, visit www.vaisala.com or contact us at sales@vaisala.com

Ref. B210375EN-C ©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.

CE