VAISALA

DMT143L Dew Point Transmitter

For OEM applications (DMT242 replacement)

Features

- Vaisala DRYCAP® technology with auto-calibration
- Calibration interval of two years
- Two sensor options cover a dew point measurement range of −60 … +60 °C (−76 … +140 °F)
- Accuracy ±2 °C (±3.6 °F)
- Compatible with Vaisala Indigo80 handheld indicator and Insight PC software
- Traceable calibration (certificate included)
- Analog current (mA) output and RS-485 digital output with Modbus® RTU support
- LED alarm for exceeded dew point level
- Fast response time

Due to its wide measurement range and excellent long-term stability, Vaisala DRYCAP® Dew Point Transmitter DMT143L is an ideal choice for low dew point industrial applications, such as compressed air dryers, plastic dryers, and other OEM applications.

Vaisala DRYCAP®

Vaisala DRYCAP® Dew Point Transmitter DMT143L is a miniature dew point measurement instrument.
The transmitter can be installed directly into pressurized systems at 20 bar (290 psia) maximum pressure. It is designed for extreme conditions.

DMT143L incorporates Vaisala DRYCAP® thin film polymer sensor and auto-calibration software. The standard sensor choice for dry gases and desiccant dryers is the DRYCAP® 180M, and for more humid applications such as refrigeration dryers, the DRYCAP® 180S is optimal.

The sensors fully withstand 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 sensors are also highly resistant to particulate contamination, oil vapor, and most chemicals, and insensitive to the flow rate.

Long calibration interval

The calibration interval of DMT143L is two years. For any adjustment needs, the transmitter can be sent to a Vaisala Service Center.

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

Easy installation

DMT143L has a variety of features to choose from, including different output and installation options, and alarm LED.

Due to its small size and light weight, DMT143L is quickly and easily installed in tight spaces or in small-size pipelines. The alarm LED indicates too high dew point in the process. The trigger point is preset at the factory. It can be later adjusted with the convenient Vaisala Insight PC software for Windows®.

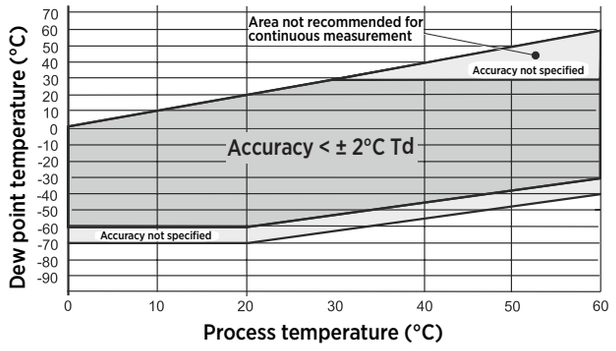
Insight PC software and the Indigo80 handheld indicator can also be used for other configuration options, as well as for viewing and logging measurement data (for more information, see www.vaisala.com/insight and www.vaisala.com/indigo).

Technical data

Measurement performance

Sensors	DRYCAP® 180M DRYCAP® 180S (optimal for refrigeration dryers)
Sensor protection	Stainless steel sintered filter Stainless steel filter for vacuum
Recommended calibration interval to confirm the specified accuracy	2 years
Measurement range (typical)	−60 ... +60 °C (−76 ... +140 °F)
Different analog output scalings available. [1]	
Accuracy with DRYCAP® 180M	±2 °C (±3.6 °F) [2] (see the graph below)

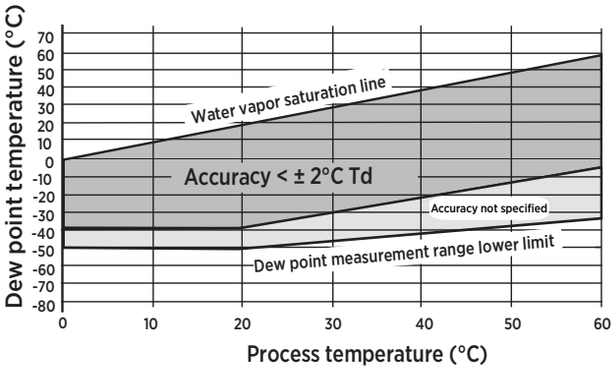
1) *For more information, see the DMT143L Order Form.*
2) *When the dew point is below 0 °C (32 °F), the transmitter outputs frost point.*



Dew point accuracy vs. measurement conditions

Response time 63 % [90 %] at +20 °C (+68 °F) gas temperature and 1 bar pressure and 1 liter/min flow rate:	
−60 → −20 °C T_d (−76 → −4 °F T_d)	5 s [10 s] (typical)
−20 → −60 °C T_d (−4 → −76 °F T_d)	45 s [10 min] (typical)
Accuracy with DRYCAP® 180S	±2 °C (±3.6 °F) [1] (see the graph below)

1) *When the dew point is below 0 °C (32 °F), the transmitter outputs frost point.*



Compliance

EU directives and regulations	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863
EMC compatibility	IEC/EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B
Compliance marks	CE, China RoHS, RCM, UKCA

Operating environment

Measurement environment	For air, nitrogen, hydrogen, argon, helium, and oxygen [1] [2]
Temperature	0 ... +60 °C (+32 ... +140 °F)
Higher temperature peaks	Short-term OK
Relative humidity	0 ... 100 %RH
Pressure	0 ... 20 bara (0 ... 290 psia)
Sample flow rate	No effect
Storage temperature	−40 ... +60 °C (−40 ... +140 °F)
IP rating	IP66

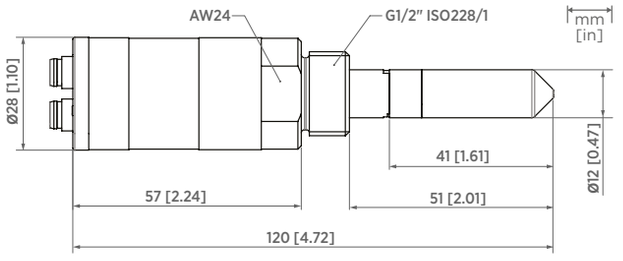
1) *Consult Vaisala if other chemicals are present. Consider safety regulations with flammable gases.*
2) *The transmitter not tested for leakages, which may occur esp. with small-molecule gases such as hydrogen and helium.*

Inputs and outputs

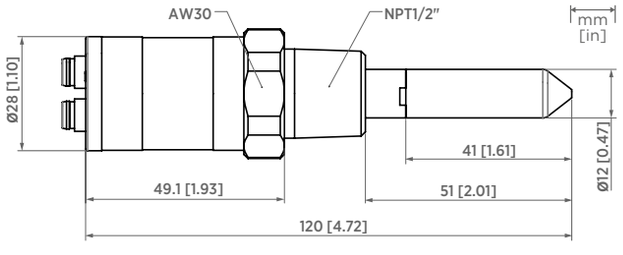
Analog current output	4 ... 20 mA (3-wire)
Digital output	RS-485, non-isolated
Supported protocols	Vaisala industrial protocol Modbus RTU
Resolution for current output	0.002 mA
Accuracy for current output at +20 °C	±0.05 mA
External load for current output	Max. 500 Ω
Operating voltage with current output	18 ... 28 VDC
Operating voltage with digital output	12 ... 28 VDC
Typical temperature dependence	0.0008 mA/°C
Power consumption at 24 VDC	Max. 220 mA

Mechanical specifications

Mechanical connection	G1/2" ISO228-1 with bonded seal ring (U-seal) or NPT1/2" thread
Housing material	Stainless steel (AISI 316L)
Weight	
G thread model	90 g (3.2 oz)
NPT thread model	100 g (3.5 oz)



DMT143L with G1/2" thread



DMT143L with NPT1/2" thread