

DPT146 Dewpoint and Pressure Transmitter for Compressed Air



The DPT146 measures both dew point and process pressure. Monitoring compressed air is simpler and quicker, helping you to make more informed decisions.

The Vaisala Dewpoint and Pressure Transmitter DPT146 for Compressed Air makes monitoring compressed air simple and convenient. The DPT146 measures both dew point and process pressure simultaneously, and is the ideal choice for anyone using or monitoring compressed air.

Simple and Efficient Installation

One transmitter providing two of the most important compressed air measurements means reduced installation costs and a much easier setup – with only one instrument needing connection and wiring.

Make More Informed Decisions

Dew point measurement combined with process pressure measurement offers further unique advantages. When dew point data is coupled with live pressure input, conversions to atmospheric pressure or ppm are available online, leaving no ambiguity

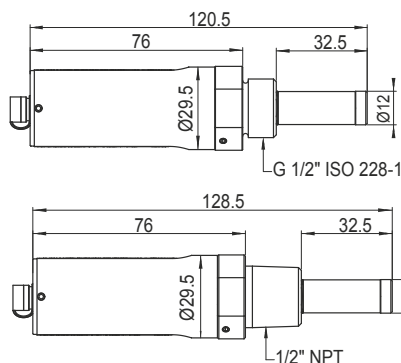
in the information. As an example, regulative requirements of medical gas can be fulfilled easily and quickly.

A Unique Combination of Two World-Class Sensors

The DPT146 combines the knowledge of more than 20 years of sensor-technology development. Proven measurements from the DRYCAP® sensor for dew point and the BAROCAP® sensor for pressure are now combined into one easy-to-use transmitter.

Dimensions

Dimensions in mm (inches)

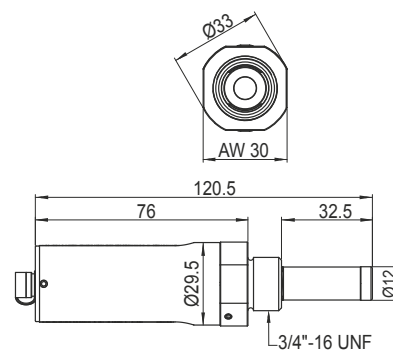


Features/Benefits

- The first transmitter that monitors both dew point and process pressure
- A simple and convenient transmitter for monitoring of compressed air
- Highly accurate humidity information thanks to dew point data coupled with live pressure input
- Proven sensor technology
- Compatible with the Vaisala Hand-Held DM70 for easy spot checking, local display and data logging
- Pressure: 1 ... 12 bar
- Dew point: -60 ... +30 °C (-76 ... +86 °F) Tdf with accuracy of ±2°C (±3.6 °F)
- Digital output RS-485 with MODBUS

Convenience with Proven Performance

Well-developed technology brings both proven results and convenience. Spot-checking and verification of dew point is easy thanks to fully compatible Vaisala DRYCAP® Hand-Held Dewpoint Meter DM70. The DM70 can also be used as a local display and data logger. Temperature measurement is available when the RS485 is in use.



Technical Data

Measured Parameters

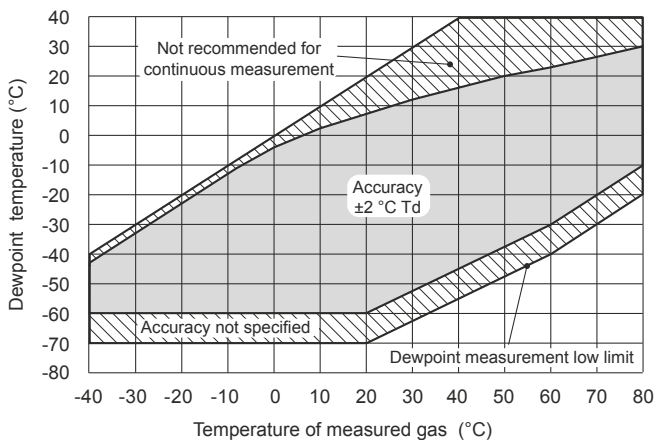
Dew point	-60 ... +30 °C (-76 ... +86 °F)
Pressure, absolute	1 ... 12 bar (14.5 ... 174 psi)
Temperature (available if output RS-485 only selected)	-40 ... +80 °C (-40 ... +176 °F)

Calculated Parameters

ppm moisture, by volume	1 ... 40 000 ppm
Dew point, converted to atmospheric pressure	-75 ... +30 °C (-103 ... +86 °F)

Performance

Dew point accuracy	±2 °C (±3.6 °F)
Pressure accuracy at 23 °C (73.4 °F)	±0.4 %FS
Pressure temperature dependence	±0.01 bar / 10 °C (18 °F)
Temperature accuracy	
0 ... 40 °C (+32 ... +104 °F)	±0.5 °C (± 0.9 °F)
-40 ... 80 °C (-40 ... +176 °F)	±1 °C (± 1.8 °F)
PPM accuracy (7 bar)	±(14 ppm + 12% of reading)
Sensor response time:	
Pressure response time	< 1 s
Dew point response time 63% [90%] at 20°C and 1 bar	
-50 → -10 °C Tdf	5 s [10 s]
-10 → -50 °C Tdf	10 s [2.5 min]



DPT146 Dewpoint Measurement Accuracy

Operating Environment

Operating temperature of electronics	-40 ... +60 °C (-40 ... +140 °F)
Operating Pressure	0 ... 50 bar (0...725 psi)

Relative humidity	0...100 %
Measured gases	Air/ non-corrosive gases
Sample flow rate	no effect on measurement accuracy

Outputs

Analog Outputs (2 channels)	
current output	0 ... 20 mA, 4 ... 20 mA
voltage output	0 ... 5V, 0 ... 10V
Accuracy of analog outputs	± 0.01 V / ± 0.01 mA
Digital output	RS-485, non-isolated, Vaisala protocol, MODBUS RTU protocol
Connector	4-pin M8

General

Sensor	Vaisala MPS1 multiparameter sensor
Operating voltage	21 ... 28 VDC, current output 20 ... 28 VDC, voltage output and/or use in cold temperatures (-40 ... -20 °C (-40 ... -4 °F)) 15 ... 28 VDC, RS485 only
Supply current	
during normal measurement	20 mA + load current
during self-diagnostics	300 mA + load current
External load for	
current output	max. 500 Ohm
voltage output	min. 10 kOhm
Housing material	AISI316L
Housing classification	IP65 (NEMA4)
Sensor protection	Mesh filter AISI303, grade 18 µm
Storage temperature range	
transmitter only	-40 ... +80 °C (-40 ... +176 °F)
shipment package	-20 ... +80 °C (-4 ... +176 °F)
Mechanical connection	ISO G1/2", NPT 1/2", UNF 3/4"-16
Recommended calibration interval	2 years
Weight (ISO1/2")	190 g (6.70 oz)
Complies with EMC standard EN61326-1, Electrical equipment for measurement, control and laboratory use - EMC requirements;	
Industrial environment	

Accessories

Connection cable for MI70 indicator /DM70 meter	219980
USB connection cable	219690
Sampling cells	DMT242SC, DMT242SC2, DSC74, DSC74B, DSC74C
Flange	DM240FA
Loop-powered external display	226476
ISO 1/2" plug	218773
NPT 1/2" plug	222507

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