

VAISALA

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

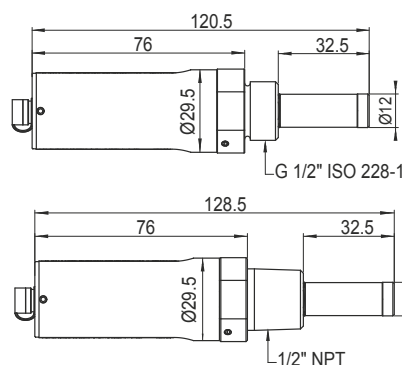
in the information. As an example, regulative requirements of medical gas can be fulfilled easily and quickly.

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)

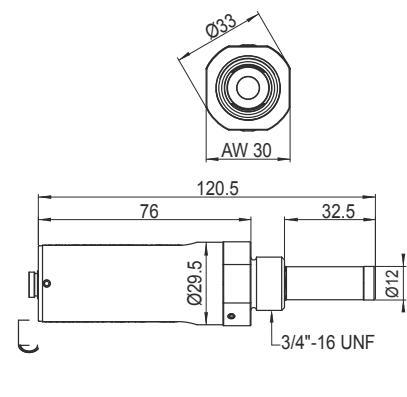


Features/Benefits

- 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: -70 ... +30 °C (-94 ... +86 °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

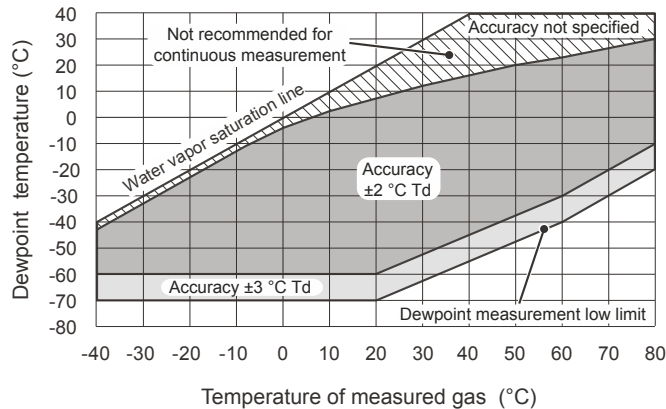
| | |
|---|----------------------------------|
| Dew point | -70 ... +30 °C (-94 ... +86 °F) |
| Pressure, absolute | 1 ... 12 bar (14.5 ... 174 psi) |
| Temperature (available if output RS485 only selected) | -40 ... +80 °C (-40 ... +176 °F) |

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 | IP66 |
| 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 |

VAISALA

上海博众测量技术有限公司

Bodhi (Shanghai) measurement technology Co.,Ltd.
NO.32,ShuPing Road, Jiading District, ZIP201808,
Shanghai R.P.China
TEL: 0086 21 6630 8161/62/63
FAX: 0086 21 6630 8167

Ref. B211159EN-G ©Vaisala 2016
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.

