

DMP246 Dewpoint Transmitter for High Temperature Applications



Features/Benefits

- Measures moisture content at process temperatures up to +350 °C (+662 °F)
- Vaisala DRYCAP® Sensor for accurate, reliable, long-term stability and fast response
- Excellent long-term stability
- User-programmable, versatile and easy to use
- Easy to install, calibrate, maintain
- Two analog outputs, serial interface
- Optional alarm relays and local display
- NIST traceable (certificate included)

The Vaisala DRYCAP® Dewpoint Transmitter DMP246 with the cooling set is an ideal solution for high temperature dewpoint measurements.

The Vaisala DRYCAP® Dewpoint Transmitter DMP246 is designed for moisture control in industrial applications with extremely high temperatures.

Vaisala DRYCAP® performance

The DMP246 incorporates the Vaisala DRYCAP® Sensor that is optimized to high temperature applications. The sensor is accurate, reliable and stable for long periods. In addition, the sensor is immune to particulate contamination, condensation and most chemicals. The DRYCAP® sensor is also fully recoverable from a saturated state.

Direct mounting to high temperatures

Even though the polymer element has an upper operating limit of +200 °C (+392 °F), the probe design allows the sensor to be placed directly in temperatures up to +350 °C (+662 °F) without sacrificing accuracy or stability. The probe utilizes a passive

cooling system, which eliminates the need for complicated sampling systems. The cooling system is accomplished without moving parts, additional power, or cooling utilities, therefore eliminating the risk of damaging the transmitter due to a cooling failure.

Cooling set

The DMP246 comes with a cooling set as a standard feature. The cooling effect may be regulated by adding the cooling profiles, or removing them from the set, to eliminate too effective cooling that could increase the possibility of condensing water vapor.

Easy settings and adjustments

The DMP246 transmitter's output variables, like the other settings, are easy to change. Selecting, scaling and calibrating the two analog output signals and parameters can be done in

a few minutes using simple software commands.

The microprocessor-based transmitter measures water vapor pressure, enabling it to output dewpoint and mixing ratio. Relative humidity and temperature measurements are used only during calibration and when checking for the proper cooling effect.

The measurement ranges and the output signals may be selected and scaled according to the desired range within the full measurement range.

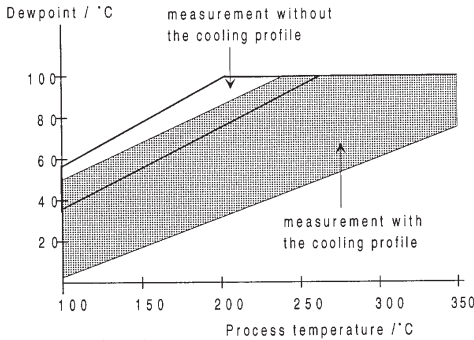
Calibration made easy

The transmitter software allows the user to perform either one or two-point calibration. Calibrations are made against relative humidity references (e.g. salt baths). The transmitter can also be sent to Vaisala for a NIST traceable calibration. In typical conditions, calibration once a year is recommended.

Technical Data

Measured variables

Dewpoint temperature	
Measurement range	+10...+100 °C (+50...+212 °F)
Accuracy	±2 °C (±3.6 °F)
(in the full measurement range displayed in the graph below)	



Response time (90%)	
at +135 °C (+275 °F), from dry to wet	10 s
at +135 °C (+275 °F), from wet to dry	50 s
Mixing ratio	0...500g/kg dry air

Outputs

Two analog outputs selectable	0...20 mA, 4...20 mA 0...1V, 0...5 V, 0...10 V
Typical accuracy of analog output at +20 °C (+68 °F)	±0.05% FS
Typical temperature dependence of analog output	0.005 %FS/°C

General

Sensor	DRYCAP® S
Measured gases	non-corrosive gases
Connections	screw terminals for 0.5 mm ² wires (AWG 20), stranded wires recommended
Operating voltage	isolated 24 VDC/VAC (20...28 V) option* 115 VAC, 230 VAC
Power consumption	100 mA max. (24 VDC)
Recommended external load for current outputs	< 500 ohm
0...1 V output	> 2 kohm (to ground)
0...5 & 0...10 V outputs	> 10 kohm (to ground)
Operating temperature range for sensor head electronics	0...+350 °C (+32...+662 °F)
with display cover	-40...+60 °C (-40...+140 °F)
with power supply unit	0...+50 °C (+32...+122 °F)
with alarm outputs up to 8A	-40...+45 °C (-40...+113 °F)
with alarm outputs up to 6 A	-40...+40 °C (-40...+104 °F)
Storage temperature range	-40...+60 °C (-40...+140 °F)
	-40...+70 °C (-40...+158 °F)
Housing material	G-Alsi12 (DIN 1725)
Housing classification	IP65 (NEMA 4)
Housing dimensions	145 x 120 x 65 mm
Bushing	for 7...10 mm diameter cables (8 x 0.5 mm ² shielded cable)
Sensor protection	Stainless steel sintered filter (HM46780)

Serial interface modules

Module types	RS485/422 digital current loop
Connections	screw terminals for 0.5 mm ² wires (AWG 20), stranded wires recommended

Assembly	plug-in module
Number of devices on line	32
RS485/422	6 (single loop) 9 (dual loop)
digital current loop	twisted pair 1000 m max.
Network cable type	
Network cable length	
Network data speed	9600 baud max. 4800 baud max.
RS485/422	
digital current loop	

Complies with EMC standard EN61326-1:1997 + Am1:1998 + Am2:2001; Industrial Environment.

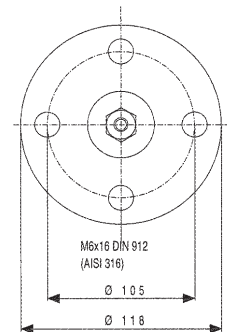
Options

Display cover	with or without local display & keypad
Probe cable lengths	2 m, 5 m or 10 m
Alarm outputs	2 pcs 8 A/230 VAC SPCO (single pole change over)
Power supply module*	115/230 VAC

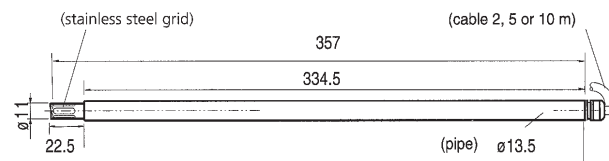
Dimensions

Dimensions in mm.

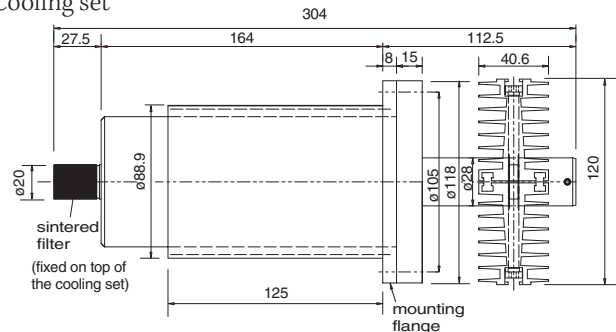
Mounting flange



DMP246 Probe



Cooling set



* Simultaneous installation with alarm outputs and internal power supply is not possible.

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