



DMP6 Dew Point Probe

For very high temperature applications



Features

- Measures humidity at high temperatures up to +350 °C (+662 °F)
- Dew point measurement range -25 ... +100 °C (-13 ... +212 °F) $T_{d/f}$
- Dew point measurement accuracy up to ± 2 °C (± 3.6 °F) $T_{d/f}$
- Sensor purge improves long-term stability and chemical resistance
- Condensation-tolerant
- Modbus RTU over RS-485
- Compatible with Vaisala Indigo products and Insight PC software
- Traceable calibration certificate

Vaisala DRYCAP® Dew Point Probe DMP6 is designed for humidity measurement in industrial applications with very high temperatures. High temperature tolerance is achieved using a passive cooling set that conducts heat away from the probe and reduces temperature to optimal range for the sensor.

Measure humidity directly in very hot processes

DMP6 is built for direct measurement in temperature range +100 ... +350 °C (+212 ... +662 °F). There is no need for a sampling system or trace heating. To tolerate these high temperatures, the probe head is inserted inside a cooling set that provides passive cooling. The cooling set has removable cooling fins that allow the operating temperature profile of the probe to be adjusted so that adequate cooling is provided for each application. The cooling system has no moving parts and requires no additional power or cooling utilities, so there is no risk of sensor damage due to mechanical cooling failure.

DMP6 incorporates the Vaisala DRYCAP® sensor, which is accurate, reliable, and stable. The sensor is condensation-tolerant and immune to particulate contamination, oil vapor, and most chemicals. Sensor warming minimizes

the risk of condensation accumulating on the sensor. If the DRYCAP® sensor does get wet, it will rapidly dry and recover its swift response time.

Sensor purge minimizes effects of contaminants

In environments with high concentrations of chemicals and cleaning agents, the sensor purge option helps to maintain measurement accuracy between calibration intervals.

Sensor purge involves heating the sensor to remove harmful chemicals. The function can be initiated manually or programmed to occur at set intervals.

Flexible connectivity

The probe can be used as a standalone digital Modbus RTU transmitter over an RS-485 serial bus, and it can also be connected to Indigo transmitters and the Indigo80 handheld indicator. For easy-

to-use access to field calibration, device analytics, and configuration functionality, the probe can be connected to Vaisala Insight software for Windows®. For more information, see www.vaisala.com/insight.

Vaisala Indigo product family

Indigo transmitters extend the capabilities of Indigo-compatible measurement probes. The transmitters can display measurements on the spot as well as transmit them to automation systems through analog signals, digital outputs, and relays. Cable length between probe and transmitter can be extended to up to 30 meters.

The Indigo80 handheld indicator is ideal for spot-checking and process monitoring, as well as for configuring and troubleshooting the probe. For more information, see www.vaisala.com/indigo.

Technical data

Measurement performance

Dew point

Sensor	DRYCAP® 180S
Measurement range	-25 ... +100 °C (-13 ... +212 °F) $T_{d/f}$
Accuracy	± 2 °C (± 3.6 °F) $T_{d/f}$
Response time 63 % [90 %]:	
From dry to wet	5 s [10 s]
From wet to dry	45 s [5 min]

Mixing ratio

Measurement range (typical)	0 ... 1000 g/kg (0 ... 7000 gr/lbs)
Accuracy (typical)	± 12 % of reading

Operating environment

Operating temperature range of probe head ¹⁾ +100 ... +350 °C (+212 ... +662 °F)

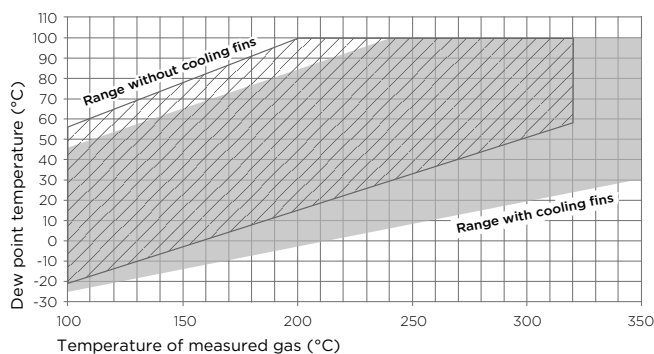
Operating temperature range of probe body -40 ... +80 °C (-40 ... +176 °F)

Storage temperature -40 ... +80 °C (-40 ... +176 °F)

Measurement environment For air, nitrogen, hydrogen, argon, helium, and oxygen ²⁾

IP rating IP66

- ¹⁾ Installation of cooling fins on the cooling set affects the operating temperature range. See the operating range graph.
²⁾ Consult Vaisala if other chemicals are present. Consider safety regulations with flammable gases.



Operating range of DMP6 probe head

Inputs and outputs

Operating voltage	15 ... 30 V DC
Current consumption	10 mA typical, 500 mA max.
Digital output	RS-485, non-isolated
Protocols	Modbus RTU

Compliance

EU directives and regulations	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863
EMC compatibility	EN 61326-1, industrial environment
Type approvals	DNV GL certificate no. TAA00002YT
Compliance marks	CE, China RoHS, RCM



Output parameters

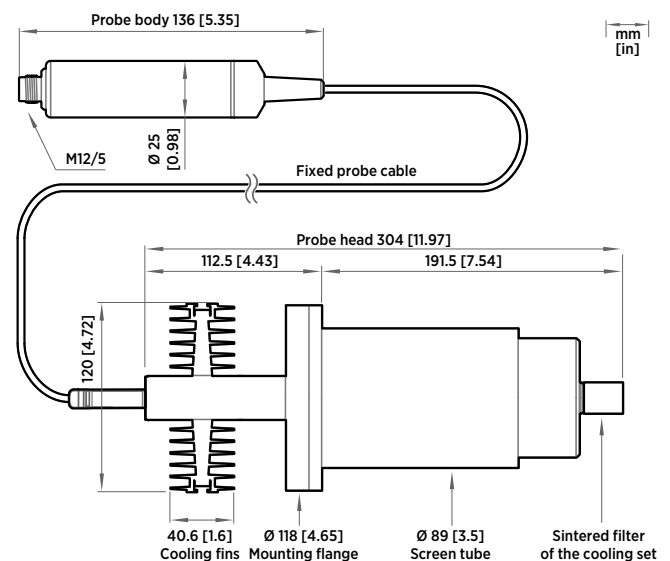
Dew point temperature (°C)	Water concentration (ppm _v)
Dew/frost point temperature (°C)	Water concentration (wet basis) (vol-%)
Dew/frost point temperature at 1 atm (°C)	Water mass fraction (ppm _w)
Dew point temperature at 1 atm (°C)	Water vapor pressure (hPa)
Mixing ratio (g/kg)	

Mechanical specifications

Connector	M12 5-pin A-coded male
Probe weight	500 g (1.10 lb)
Cooling set weight	3.50 kg (7.72 lb)
Probe cable length	2 m (6.56 ft)

Materials

Probe	AISI 316L
Probe body	AISI 316L
Cable jacket	FEP
Cooling set	Stainless steel and aluminum



DMP6 dimensions with Cooling Set DMP246CS

Accessories

Cooling set	DMP246CS
Indigo USB adapter ¹⁾	USB2

- ¹⁾ Vaisala Insight software for Windows available at www.vaisala.com/insight.