



HMP9 Compact Humidity and Temperature Probe



Features

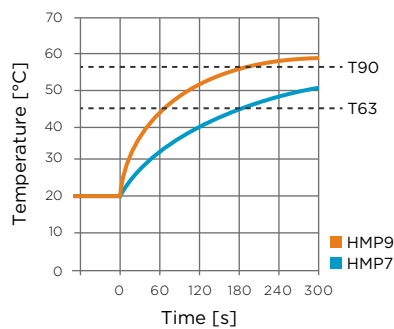
- Miniature probe head with low thermal mass for superior response time
- RH accuracy up to 0.8 %RH
- Temperature accuracy up to 0.1 °C (0.18 °F)
- Temperature measurement range -40 ... +120 °C (-40 ... +248 °F)
- Sensor purge provides superior chemical resistance
- Modbus RTU over RS-485
- Compatible with Indigo transmitters and Insight PC software
- Traceable calibration certificate: 6 points for humidity, 1 point for temperature
- M10×1.5 cable gland included for mounting the probe head

Vaisala HUMICAP® Humidity and Temperature Probe HMP9 is designed for easy installation into rapidly changing environments where fast response time, measurement performance, and chemical tolerance are essential.

Miniature probe head with HUMICAP® performance

The main feature of HMP9 is its 5 mm (0.2 in) diameter miniature probe head. Despite the small footprint, the probe head contains a HUMICAP® sensor that provides its industry standard humidity measurement performance.

HMP9 has great stability, fast response time, and low hysteresis in a wide range of applications. This makes it the superior choice in applications where the mechanical properties or replaceable filters of the heavier probes are not needed.



HMP9 T response time compared to HMP7

Chemical purge minimizes effects of contaminants

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

The chemical 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 is compatible with Vaisala Indigo series of transmitters, and it can be used as a standalone digital Modbus RTU transmitter over RS-485 serial bus. For easy-to-use access to field calibration, device analytics, and configuration functionality, the probe can be connected to Vaisala Insight software for Windows®: see www.vaisala.com/insight.

Technical data

Measurement performance

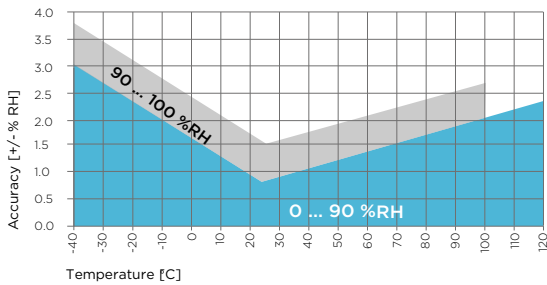
Relative humidity

Measurement range	0 ... 100 %RH
Accuracy at +23 °C (+73.4 °F) ¹⁾	±0.8 %RH (0 ... 90 %RH)
Factory calibration uncertainty ²⁾	±0.7 %RH (0 ... 40 %RH) ±1 %RH (40 ... 95 %RH)
T ₆₃ response time ³⁾	15 s

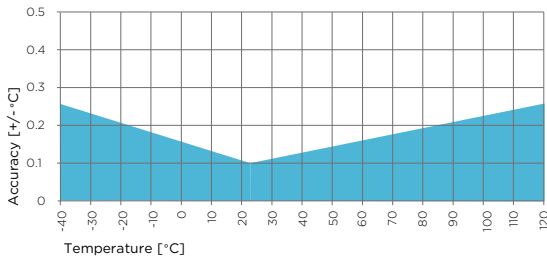
Sensor

Sensor	HUMICAP® I
Measurement range	-40 ... +120 °C (-40 ... +248 °F)
Accuracy at +23 °C (+73.4 °F) ¹⁾	±0.1 °C (±0.18 °F)
Factory calibration uncertainty ²⁾	±0.1 °C (±0.18 °F) at +23 °C (+73.4 °F)
T ₆₃ response time ³⁾	70 s

1) Defined against calibration reference. Including non-linearity, hysteresis, and repeatability.
2) Defined as ±2 standard deviation limits. Small variations possible; see calibration certificate.
3) In still air



HMP9 humidity measurement accuracy as a function of temperature



HMP9 temperature measurement accuracy over full range

Operating environment

Operating temperature of probe body	-40 ... +60 °C (-40 ... +140 °F)
Operating temperature of probe head	-40 ... +120 °C (-40 ... +248 °F)
Storage temperature	-40 ... +60 °C (-40 ... +140 °F)
Operating environment	Suitable for outdoor use when protected from rain
Measurement environment	For air, nitrogen, hydrogen, argon, helium, and oxygen ¹⁾
IP rating	IP65 for probe body
EMC compliance	EN 61326-1, industrial electromagnetic environment

1) Consult Vaisala if other chemicals are present. Consider safety regulations with flammable gases.

Inputs and outputs

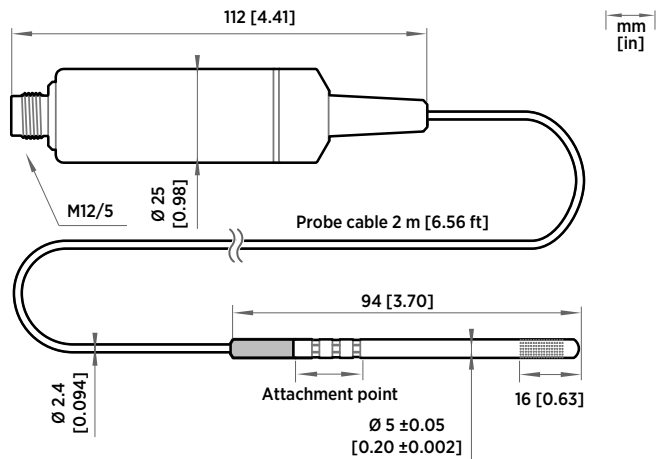
Operating voltage	15 ... 30 VDC
Current consumption	5 mA typical, 400 mA max.
Digital output	RS-485, non-isolated
Default serial settings	19200 bps N 8 2
Protocol	Modbus RTU

Output parameters

Relative humidity, temperature, dew point temperature, dew point temperature difference, wet-bulb temperature, absolute humidity, mixing ratio, water concentration, water vapor pressure, water vapor saturation pressure, enthalpy

Mechanical specifications

Connector	M12 5-pin A-coded male
Weight	68 g (2.40 oz)
Materials	
Probe	AlSi316
Probe body	PBT
Cable overmolds	FEP



HMP9 probe dimensions

Accessories

Solar radiation shield DTR502B with sensor head support 215130	DTR502B and 215130
USB PC connection cable ¹⁾	242659

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



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