VAISALA

HMP1 Wall-Mounted Humidity and Temperature Probe

Vaisala HUMICAP® Humidity and Temperature Probe HMP1 is designed for ambient measurement in indoor spaces. Its probe head and body are integrated into a single unit with no cable between them. HMP1 can be directly connected to Indigo300 and Indigo200 series transmitters to form a single wall-mounted unit.

Features

- Compact size
- RH accuracy up to ±1.0 %RH
- Temperature accuracy up to ±0.2 °C (0.36 °F)
- Temperature measurement range −40 ... +60 °C (−40 ... +140 °F)
- Sensor purge improves long-term stability and chemical resistance
- Modbus® RTU over RS-485
- Compatible with Vaisala Indigo products and Insight PC software
- Traceable calibration certificate: 6 points for humidity, 1 point for temperature

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.

For more information on the Indigo product family, see www.vaisala.com/indigo.

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.

Mounting with probe holder

HMP1 probe is delivered with a probe holder for wall mounting. The probe holder provides a secure attachment that allows the probe to be removed without removing the base of the holder.

Probe holder

Use with Indigo transmitters

With an Indigo300 or Indigo200 series transmitter, HMP1 forms a single wall-mounted unit with no probe cable or probe holder needed. Just push the probe directly into the connector on the transmitter and turn the locking wheel to hold the probe in place. Probe settings can be configured through the transmitter.

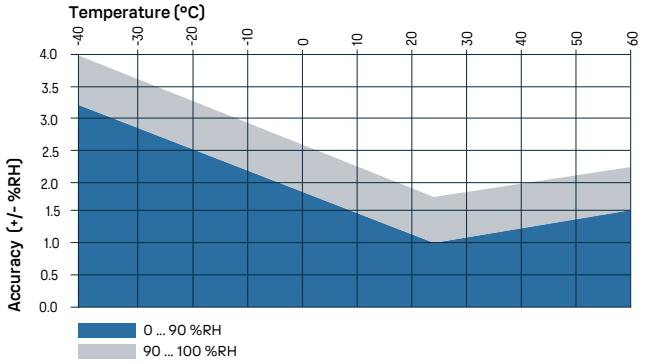
HMP1 with Indigo200 series

Technical data

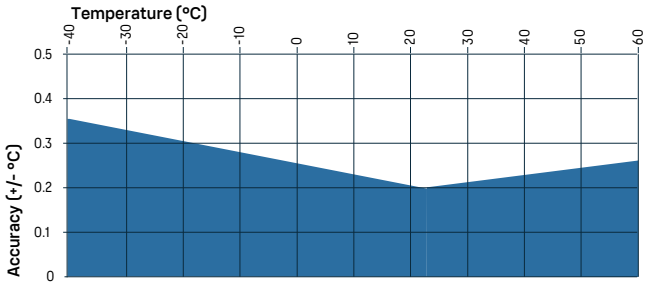
Measurement performance

Relative humidity	
Measurement range	0–100 %RH
Accuracy at +23 °C (+73.4 °F) [1) 2)]	±1.0 %RH (0–90 %RH)
Factory calibration uncertainty [3)]	±0.7 %RH (0–40 %RH) ±1 %RH (40–95 %RH)
T_{63} response time [4)]	21 s
Sensor	HUMICAP® I
Temperature	
Measurement range	−40 ... +60 °C (−40 ... +140 °F)
Accuracy at +23 °C (+73.4 °F) [1) 2)]	±0.2 °C (±0.36 °F)
Factory calibration uncertainty [3)]	±0.1 °C (±0.18 °F) at +23 °C (+73.4 °F)
T_{63} response time [4)]	70 s

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



HMP1 humidity measurement accuracy as a function of temperature



HMP1 temperature measurement accuracy over full range

Operating environment

Operating temperature	−40 ... +60 °C (−40 ... +140 °F)
Storage temperature	−40 ... +60 °C (−40 ... +140 °F)
Measurement environment	For air, nitrogen, hydrogen, argon, helium, and oxygen [1)]
IP rating	IP50

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

Inputs and outputs

Operating voltage	15–30 V DC
Current consumption	2 mA typical, 200 mA max.
Digital output	RS-485, non-isolated
Protocol	Modbus RTU

Output parameters

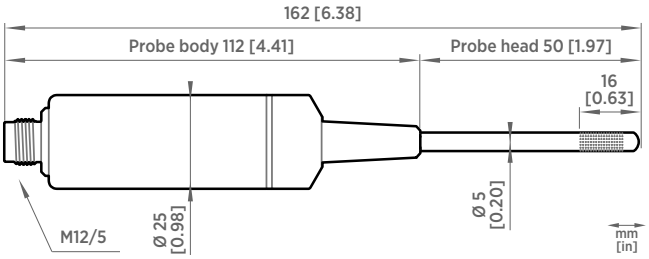
Absolute humidity (g/m^3)	Relative humidity (%RH)
Absolute humidity at NTP (g/m^3)	Relative humidity (dew/frost) (%RH)
Dew point temperature (°C)	Temperature (°C)
Dew/frost point temperature (°C)	Water concentration (ppm$_v$)
Dew/frost point temperature at 1 atm (°C)	Water concentration (wet basis) (vol-%)
Dew point temperature at 1 atm (°C)	Water mass fraction (ppm$_w$)
Dew point temperature difference (°C)	Water vapor pressure (hPa)
Enthalpy (kJ/kg)	Water vapor saturation pressure (hPa)
Mixing ratio (g/kg)	Wet-bulb temperature (°C)

Compliance

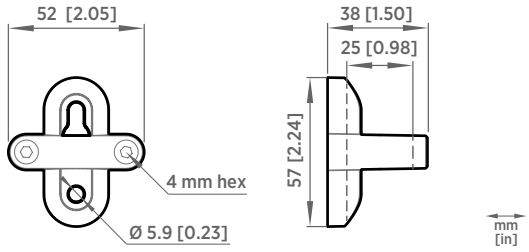
EU directives and regulations	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) as amended by 2015/863
Electromagnetic compatibility (EMC)	EN 61326-1, industrial environment
Compliance marks	CE, China RoHS, RCM

Mechanical specifications

Connector	M12 5-pin A-coded male
Weight	38 g (1.34 oz)
Materials	
Probe	AISI 316L
Probe body	PBT



HMP1 probe dimensions



Probe holder ASM213582 dimensions

Accessories

Indigo USB adapter [1)]	USB2

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

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