





HUMIDITY AND TEMPERATURE PROBES


Indigo-compatible humidity and temperature probes are based on the space-proof Vaisala HUMICAP® technology, the world's first thin-film capacitive humidity sensor. Vaisala HUMICAP™ sensors guarantee quality and reliability, with a reputation for accuracy, excellent long-term stability, and negligible hysteresis.

Indigo-compatible humidity probes are suitable for a wide range of applications from industrial processes to life science and building automation. They provide a comprehensive list of output parameters, including relative humidity, temperature, dew point temperature, wet bulb temperature, absolute humidity, mixing ratio, water vapor pressure, and enthalpy. All probes are supplied with RS-485 non-isolated Modbus RTU output.

	HMP1 ambient measurement in indoor spaces and wall-mounting	HMP3 general-purpose use and duct-mounting	HMP4 high-pressure or vacuum environments	HMP5 high temperature environments
				
MEASUREMENT RANGE	0 ... 100 %RH -40 ... +60 °C (-40 ... +140 °F)	0 ... 100 %RH -40 ... +120 °C (-40 ... +248 °F)	0 ... 100 %RH -70 ... +180 °C (-94 ... +356 °F)	0 ... 100 %RH -70 ... +180 °C (-94 ... +356 °F)
ACCURACY AT +23 °C (+73.4 °F)	±1.0 %RH (0 ... 90 %RH) ±0.2 °C (±0.36 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)
OPERATING ENVIRONMENT TEMPERATURE	-40 ... +60 °C (-40 ... +140 °F)	probe head -40 ... +120 °C (-40 ... +248 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -70 ... +180 °C (-94 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -70 ... +180 °C (-94 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)
OPERATIONAL PRESSURE			< 100 bar	
OUTPUT PARAMETERS	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio
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	HMP7 high-temperature and/or condensing environments	HMP8 high-pressure or leak-tight installation	HMP9 rapidly changing environments	TMP1 demanding temperature measurements
				
MEASUREMENT RANGE	0 ... 100 %RH -70 ... +180 °C (-94 ... +356 °F)	0 ... 100 %RH -70 ... +180 °C (-94 ... +356 °F)	0 ... 100 %RH -40 ... +120 °C (-40 ... +248 °F)	-70 ... +180 °C (-94 ... +356 °F)
ACCURACY AT +23 °C (+73.4 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)	±0.8 %RH (0 ... 90 %RH) ±0.1 °C (±0.18 °F)	±0.06 °C (±0.108 °F) *
OPERATING ENVIRONMENT TEMPERATURE	probe head -70 ... +180 °C (-94 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -70 ... +180 °C (-94 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -40 ... +120 °C (-40 ... +248 °F) probe body -40 ... +60 °C (-40 ... +140 °F)	probe head -70 ... +180 °C (-94 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)
OPERATIONAL PRESSURE	< 10 bar	< 40 bar		
OUTPUT PARAMETERS	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Absolute humidity Relative humidity Temperature Wet-bulb temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Water vapor saturation pressure Enthalpy Mixing ratio	Temperature Water vapor saturation pressure
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*) when including the ISO17025 accredited calibration

 [Watch a video](#) about Vaisala Indigo humidity and temperature probes and how to use them in different applications

INDIGO SMART PROBES

DEW POINT PROBES


Indigo-compatible dew point probes feature Vaisala's trusted DRYCAP® technology, specifically designed for humidity measurement in dry environments. The DRYCAP® sensor is particularly renowned for its reliable performance in hot and very dry environments. These probes excel in a range of applications, from drying processes to compressed air, dry chambers, and industrial ovens. All probes are supplied with RS-485 non-isolated Modbus RTU output.

	DMP5 high temperatures	DMP6 very high temperatures	DMP7 leak-tight installation	DMP8 high-pressure or leak-tight installation
				
MEASUREMENT RANGE	Dew point -40 ... +100 °C (-40 ... +212 °F) Td/f Temperature 0 ... +180 °C (+32 ... +356 °F) Mixing ratio 0 ... 1000 g/kg (0 ... 7000 gr/lbs) Absolute humidity 0 ... 600 g/m3	Dew point -25 ... +100 °C (-13 ... +212 °F) Td/f Mixing ratio 0 ... 1000 g/kg (0 ... 7000 gr/lbs)	Dew point -70 ... +80 °C (-94 ... +176 °F) Td/f Temperature 0 ... +80 °C (+32 ... +176 °F) Relative humidity 0 ... 70 %RH Concentration by volume 10 ... 2500 ppm	Dew point -70 ... +80 °C (-94 ... +176 °F) Td/f Temperature 0 ... +80 °C (+32 ... +176 °F) Relative humidity 0 ... 70 %RH Concentration by volume 10 ... 2500 ppm
ACCURACY	Dew point ±2 °C (±3.6 °F) Td/f Temperature ±0.4 °C (±0.72 °F) at +100 °C (+212 °F) Mixing ratio ±12 % of reading Absolute humidity ±10 % of reading (typical)	Dew point ±2 °C (±3.6 °F) Td/f Mixing ratio ±12 % of reading	Dew point Up to ±2 °C (±3.6 °F) Td/f Temperature ±0.2 °C at room temperature Relative humidity ±0.004 %RH + 20% of reading (RH <10 %RH, at + 20 °C) Concentration by volume 1 ppm + 20% of reading (at + 20 °C, 1 bar)	Dew point ±2 °C (±3.6 °F) Td/f Temperature ±0.2 °C at room temperature Relative humidity ±0.004 %RH + 20% of reading (RH <10 %RH, at + 20 °C) Concentration by volume 1 ppm + 20% of reading (at + 20 °C, 1 bar)
OPERATING ENVIRONMENT TEMPERATURE	probe head -40 ... +180 °C (-40 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head +100 ... +350 °C (+212 ... +662 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -40 ... +80 °C (-40 ... +176 °F) probe body -40 ... +80 °C (-40 ... +176 °F)	probe head -40 ... +80 °C (-40 ... +176 °F) probe body -40 ... +80 °C (-40 ... +176 °F)
OPERATIONAL PRESSURE			0 ... 10 bar (0 ... 145 psia)	0 ... 40 bar (0 ... 580 psia)
OUTPUT PARAMETERS	Absolute humidity Relative humidity Dew point temperature Temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Enthalpy Water vapor saturation pressure Mixing ratio	Dew point temperature Water concentration Dew/frost point temperature Water mass fraction Water vapor pressure Mixing ratio	Absolute humidity Relative humidity Dew point temperature Temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Enthalpy Water vapor saturation pressure Mixing ratio	Absolute humidity Relative humidity Dew point temperature Temperature Dew/frost point temperature Water concentration Water mass fraction Water vapor pressure Enthalpy Water vapor saturation pressure Mixing ratio
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CARBON DIOXIDE (CO₂) PROBES

Indigo-compatible carbon dioxide (CO₂) probes are based on Vaisala's unique CARBOCAP® technology that provides exceptional stability. They are ideal for applications such as incubators, greenhouses, food storage and transport, animal shelters, and demand-controlled ventilation. They can even be installed outdoors.



	GMP251 %-level measurements	GMP252 ppm-level measurements
		
MEASUREMENT RANGE	0 ... 20 % CO ₂	0 ... 10,000 ppm CO ₂ (up to 30 000 ppm CO ₂ with reduced accuracy)
ACCURACY	At 5 %CO ₂ ±0.1 %CO ₂ At 0 ... 8 %CO ₂ ±0.2 %CO ₂ At 8 ... 20 %CO ₂ ±0.4 %CO ₂	0 ... 3000 ppm CO ₂ ±40 ppm CO ₂ 3000 ... 10 000 ppm CO ₂ ±2 % of reading Up to 30 000 ppm CO ₂ ±3.5 % of reading
LONG-TERM STABILITY	At 0 ... 8 %CO ₂ ±0.3 %CO ₂ /year At 8 ... 12 %CO ₂ ±0.5 %CO ₂ /year at 12 ... 20 %CO ₂ ±1.0 %CO ₂ /year	0 ... 3000 ppm CO ₂ ±60 ppm CO ₂ /year 3000 ... 6000 ppm CO ₂ ±150 ppm CO ₂ /year 6000 ... 10 000 ppm CO ₂ ±300 ppm CO ₂ /year
OPERATING ENVIRONMENT TEMPERATURE	-40 ... +60 °C (-40 ... +140 °F)	-40 ... +60 °C (-40 ... +140 °F)
OUTPUT OPTIONS	0 ... 5/10 V (scalable), min. load 10 kΩ 0/4 ... 20 mA (scalable), max. load 500 Ω RS-485: Modbus, Vaisala Industrial Protocol	0 ... 5/10 V (scalable), min. load 10 kΩ 0/4 ... 20 mA (scalable), max. load 500 Ω RS-485: Modbus, Vaisala Industrial Protocol
READ MORE	DATA SHEET	DATA SHEET

 [Watch a video](#) on Vaisala CARBOCAP series GMP250 probes and how to use them in carbon dioxide measurements

INDIGO SMART PROBES

VAPORIZED HYDROGEN PEROXIDE (H2O2) PROBES


Indigo-compatible vaporized hydrogen peroxide (H2O2) probes feature Vaisala's unique PEROXCAP® technology, which enables accurate and repeatable measurement of vaporized H2O2, relative humidity / saturation (%RH / %RS), and temperature during bio-decontamination with a single probe.

	HPP271 H2O2 vapor concentration	HPP272 H2O2 vapor concentration, relative saturation, humidity, and temperature
		
MEASUREMENT RANGE	0 ... 2000 ppm +5 ... +50 °C (+41 ... +122 °F)	10...2000 ppm +5 ... +50 °C (+41 ... +122 °F) 0 ... 100 %RS 0 ... 100 %RH
ACCURACY	At +10 ... +25 °C (+50 ... +77 °F), 10 ... 2000 ppm H2O2 ±10 ppm or 5 % of reading (whichever is greater)	At +10 ... +25 °C (+50 ... +77 °F), 10 ... 2000 ppm H2O2 : ±10 ppm or 5 % of reading (whichever is greater) ±4 %RS At +25 °C (77 °F), 0 ppm H2O2 0 ... 90 %RH ±1 %RH
OPERATING ENVIRONMENT TEMPERATURE	+0 ... +70 °C (+32 ... +158 °F)	+0 ... +70 °C (+32 ... +158 °F)
OUTPUT PARAMETERS	Vaporized hydrogen peroxide concentration by volume Water concentration by volume	Absolute H2O2 and H2O H2O ppm by volume, water vapor saturation pressure (H2O and H2O+H2O2) dew point temperature vapor pressure (H2O and H2O2)
OUTPUT OPTIONS	RS-485, not isolated; do not use termination on the RS-485 line	RS-485, not isolated; do not use termination on the RS-485 line
READ MORE	DATA SHEET VAISALA.COM	DATA SHEET VAISALA.COM

[Watch a video](#) on how to connect a vaporized hydrogen peroxide probe to a Vaisala Indigo transmitter

MOISTURE-IN-OIL PROBE





Indigo-compatible probe MMP8 incorporates the Vaisala HUMICAP 180L2 sensor, which is optimized for moisture in oil applications. The probe is suitable for demanding moisture measurement in a range of oils such as transformer, hydraulic, and lubrication oils and includes a CIGRE recommended traceable calibration certificate.

	MMP8
	
MEASUREMENT RANGE	Water activity 0 ... 1 a _w Temperature -40 ... +180 °C (-40 ... +356 °F)
T90 RESPONSE TIME	10 min
ACCURACY	Water activity ±0.01 a _w (±1 %RS) Water concentration in oil 10 % of the reading Temperature ±0.2 °C (0.36 °F) at +20 °C (+68 °F)
OPERATING ENVIRONMENT TEMPERATURE	probe head -40 ... +180 °C (-40 ... +356 °F) probe body -40 ... +80 °C (-40 ... +176 °F)
OPERATING PRESSURE RANGE	0 ... 40 bar (0 ... 580 psia)
OUTPUT PARAMETERS	Relative saturation (%RS) Temperature (°C) Water activity Water concentration in oil (ppmv)
OUTPUT OPTIONS	RS-485, not isolated
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[Watch an unboxing video](#) on Vaisala Indigo520 Transmitter & MMP8 Probe

HOST DEVICES FOR INDIGO SMART PROBES

Vaisala Indigo transmitters offer many features that complement Indigo-compatible smart probes. They enable real-time data visualization and access to probe configurations. They also offer additional connectivity, supply voltage, and wiring options compared to using a stand-alone smart probe.

	Indigo500 transmitter series		Indigo300 transmitter	Indigo200 transmitter series	
	Indigo520	Indigo510	Indigo300	Indigo202	Indigo201
					
DISPLAY	Touchscreen color LCD display or non-display with LED indicator	Touchscreen color LCD display or non-display with LED indicator	Color LCD display with LED indicator	Color LCD display	Color LCD display or non-display with LED indicator
COMMUNICATION	Modbus TPC/IP	Modbus TPC/IP	Analog output	RS-485, Modbus RTU	Analog output
ANALOG OUTPUTS	4 pcs	2 pcs	3 pcs (pre-configured)	No	3 pcs
RELAYS	2 pcs	No	No	2 pcs	2 pcs
ANALOG INPUTS	1 pc	No	No	No	No
POWERING	15 ... 35 VDC 24 VAC 100 ... 240 VAC PoE+	11 ... 35 VDC 24 VAC	15 ... 30 VDC 24 VAC	15 ... 30 VDC 24 VAC	15 ... 30 VDC 24 VAC
GALVANIC ISOLATION	Yes	Yes	No	No	No
DATA LOGGING	10 years' storage with 24 h interval logging	10 years' storage with 24 h interval logging	No	No	No
REMOTE ACCESS VIA INSIGHT PC SOFTWARE	Yes	Yes	Yes	Yes	Yes
ENCLOSURE	Metal, IP66, NEMA4	Metal, IP66, NEMA4	Metal, IP65	Plastics, IP65	Plastics, IP65
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Barometric pressure measurement

The Indigo520 transmitter with the barometric pressure measurement module combined with one or two of the Indigo-compatible humidity and temperature measurement probes is a unique combination of a meteorological-grade barometer in a single industrial device. Measure three parameters simultaneously: barometric pressure, humidity and temperature. The device incorporates Vaisala's proprietary, space-proof HUMICAP® and BAROCAP® technologies.

[Read more](#)

VAISALA INSIGHT PC SOFTWARE

Vaisala Insight PC Software provides quick access to the configuration options and calibration data of Indigo-compatible smart probes. Probes can be detached from the process and connected to a PC with a USB cable to access Insight PC software. The software, which features an intuitive graphical user interface, also allows probe field calibration and adjustments. It also enables easy testing and evaluation - the 48-hour data logging functionality allows data to be recorded from up to six devices simultaneously, with easy export to an Excel-readable format.

- Configure devices to fit perfectly to your needs
- Calibrate and adjust probes on-site
- Run tests and analyze results with 48h data logging functionality

[Download Insight PC software](#) for free.

