

2024-02-28

HMP1 Humidity and Temperature Probe for Space Monitoring



HMP1 Probe (top), HMP1 Probe with Indigo200 (bottom left), and HMP1 Probe with Indigo520 (bottom right)

Features/Benefits:

- Vaisala HUMICAP® I sensor for great stability and superior response time
- Relative Humidity accuracy up to ± 1.0 %RH
- Temperature accuracy up to ± 0.2 °C (± 0.36 °F)
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Corrosion-resistant IP50 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor, saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Probe shall incorporate a thin-film polymer capacitive HUMICAP® I humidity sensor with accuracy of ± 1.0 %RH (0 ... 90 %RH) at 23 °C (73.4 °F). Chemical purge functionality allows for use in environments with high concentrations of dust, chemicals, or cleaning agents. Temperature sensor shall have accuracy up to ± 0.2 °C (± 0.36 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP50 rated metal probe body with an operating temperature range of -40 ... +60 °C (-40 ... +140 °F). Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Probe head shall have a temperature operating range of -40 ... +60 °C (-40 ... +140 °F), with relative humidity accuracy specified between -40 ... +60 °C (-40 ... +140 °F). Probe can be connected directly to INDIGO200 or INDIGO300 Transmitters to form single wall-mounted, fixed probe system. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

HMP3 General Purpose Humidity and Temperature Probe



HMP3 Probe (top), HMP3 Probe with Indigo201 Transmitter (bottom)

Features/Benefits:

- Uses Vaisala HUMICAP® sensor technology for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Optional accessories to accommodate duct and outdoor installations
- Corrosion-resistant IP66 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Humidity and temperature probe is designed for general use as a standalone probe or as a remote probe with one of the Indigo Transmitters. Probe shall incorporate a thin-film polymer capacitive HUMICAP® humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Humidity sensor shall be replaceable (re-calibration required to bring sensor within specified accuracy after new sensor is installed). Composite sensor available to allow purge functionalities for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds. Temperature sensor shall be a platinum 100 Ω RTD with accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP66 rated metal probe body with an operating temperature range of -40 ... +80 °C (-40 ... +176 °F). Suitable for use in air, nitrogen, hydrogen, argon, helium, and oxygen. Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -40 ... +120 °C (-40 ... +248 °F), with relative humidity accuracy specified between 0 ... 100 %RH and -40 ... +120 °C (-40 ... +248 °F). Optional flange style duct installation kit. Optional solar radiation shield for outdoor installations. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

HMP4 Humidity and Temperature Probe for High Pressure/Vacuum



Probe body (top), HMP4 Probe head (center)
HMP4 Probe connected to INDIGO520 (right)

Features/Benefits:

- Uses Vaisala HUMICAP® sensor technology for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Operating pressure of 0 ... 100 bar
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Threaded fitting options for in-line process measurements
- Corrosion-resistant IP66 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Humidity and temperature probe is designed for pressurized or vacuum applications up to 100 bar and can be used as a standalone probe or with one of the Indigo Transmitters. Probe shall incorporate a thin-film polymer capacitive HUMICAP® humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Humidity sensor shall be replaceable (re-calibration required to bring sensor within specified accuracy after new sensor is installed). Composite sensor available to allow purge functionalities for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds. Temperature sensor shall be a platinum 100 Ω RTD with accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP66 rated metal probe body with an operating temperature range of -40 ... +80 °C (-40 ... +176 °F). Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -70 ... +180 °C (-94 ... +356 °F), with relative humidity accuracy specified between -40 ... +180 °C (-40 ... +356 °F). Various threaded fitting connections offered for in-line process connection. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

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HMP5 Humidity and Temperature Probe for High Temperatures



HMP5 Probe (top), HMP5 with Indigo520 (bottom)

Features/Benefits:

- Uses Vaisala HUMICAP® sensor technology for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Optional mounting flange for installation
- Corrosion-resistant IP66 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Humidity and temperature probe is designed for high temperature applications and can be used as a standalone probe or as a remote probe with one of the Indigo Transmitters. Probe shall incorporate a thin-film polymer capacitive HUMICAP® humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Humidity sensor shall be replaceable (re-calibration required to bring sensor within specified accuracy after new sensor is installed). Composite sensor available to allow purge functionalities for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds.

Temperature sensor shall be a platinum 100 Ω RTD with accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP66 rated metal probe body with an operating temperature range of -40 ... +80 °C (-40 ... +176 °F). Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -70 ... +180 °C (-94 ... +356 °F), with relative humidity accuracy specified between 0 ... 100 %RH and -40 ... +180 °C (-40 ... +356 °F).

Optional mounting flange for installation. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

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HMP7 Humidity and Temperature Probe for High Temperature and/or Humidity



HMP7 Probe (top), HMP7 Probe with Indigo201 Transmitter (bottom)

Features/Benefits:

- Uses Vaisala HUMICAP® sensor technology for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Condensation prevention functionality for high humidity environments (probe reads temperature independent parameters only when probe warming is active)
- Sensor purge provides superior chemical resistance for harsh conditions
- Digital communication - Modbus® RTU protocol over RS-485
- Optional accessories to accommodate duct and outdoor installations, as well as threaded Swagelok® connectors for process connections
- Corrosion-resistant IP66 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Humidity and temperature probe is designed for high humidity and high temperature applications with integrated probe warming functionality to minimize condensation on probe; probe can be used as a standalone probe or as a remote probe with one of the Indigo Transmitters. Probe shall incorporate a thin-film polymer capacitive HUMICAP® humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Humidity sensor shall be replaceable (re-calibration required to bring sensor within specified accuracy after new sensor is installed). Composite sensor available to allow purge functionalities for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds. Temperature sensor shall be a platinum 100 Ω RTD with accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP66 rated metal probe body with an operating temperature range of -40 ... +80 °C (-40 ... +176 °F). Suitable for use in air, nitrogen, hydrogen, argon, helium, oxygen, and vacuum conditions. Probe to be powered by 18 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -70 ... +180 °C (-94 ... +356 °F), with relative humidity accuracy specified between 0 ... 100 %RH and -40 ... +180 °C (-40 ... +356 °F). Optional flange style duct installation kit, solar radiation shield for outdoor installations, or Swagelok® fittings for threaded installations. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

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HMP8 Humidity and Temperature Probe for Pressurized Processes

Features/Benefits:



- Uses Vaisala HUMICAP® sensor technology for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Operating pressure rated between 0 ... 40 bar
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Probe installation depth can be freely adjusted with available sliding threaded fitting
- Probe can be hot-swapped from pressurized pipelines with optional ball valve installation kit
- Corrosion-resistant IP66 electronics housing
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Relative humidity and temperature probe is designed for pressurized applications where easy insertion and removal and adjustable installation depth are desired. Process connection via sliding threaded fitting, which can be for ISO or NPT connection must be available. Probe shall incorporate a thin-film polymer capacitive HUMICAP® humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Humidity sensor shall be replaceable (re-calibration required to bring sensor within specified accuracy after new sensor is installed). Composite sensor available to allow purge functionalities for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds. Temperature sensor shall be a platinum 100 Ω RTD with accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). Electronics to be protected in an IP66 rated metal probe body with an operating temperature range of -40 ... +80 °C (-40 ... +176 °F). Suitable for use in air, nitrogen, hydrogen, argon, helium, oxygen, and vacuum. Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -70 ... +180 °C (-94 ... +356 °F), with relative humidity accuracy specified between 0 ... 100 %RH and -40 ... +180 °C (-40 ... +356 °F). Optional ball valve installation kit shall be available. Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, and water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.

HMP9 Humidity and Temperature Probe for Rapidly Changing Environments



HMP9 Probe (top), HMP9 probe with Indigo201 (bottom)

Features/Benefits:

- Vaisala HUMICAP® I sensor for superior accuracy and stability
- Relative Humidity accuracy up to ± 0.8 %RH
- Temperature accuracy up to ± 0.1 °C (± 0.18 °F)
- Compact 5 mm diameter probe for small spaces and superior temperature response time
- Plug & play compatibility with all Vaisala Indigo Transmitters (Indigo520, Indigo510, Indigo300, Indigo201, Indigo202, Indigo80) for analog outputs, local display, and/or additional features
- Digital communication - Modbus® RTU protocol over RS-485
- Sensor purge provides superior chemical resistance for harsh conditions
- Corrosion-resistant IP65 probe body
- Calculated moisture parameter options: Relative humidity, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure, etc.
- Compatible with Vaisala's [Insight PC Software](#) through USB connection
- Traceable calibration certificate included

Summary:

Humidity and temperature probe is designed for installation into small spaces and where fast response time is desired. Probe shall incorporate a thin-film polymer capacitive HUMICAP® I humidity sensor with accuracy of ± 0.8 %RH (0 ... 90 %RH) at +23 °C (+73.4 °F). Sensor purge functionality allows for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. T_{63} response time of 15 seconds. Temperature sensor shall have accuracy up to ± 0.1 °C (± 0.18 °F) at +23 °C (+73.4 °F). T_{63} response time of 70 seconds. Electronics to be protected in an IP65 rated probe body with an operating temperature range of -40 ... +60 °C (-40 ... +140 °F). Probe to be powered by 15 ... 30 VDC with Modbus® RTU communication protocol over RS-485. Remote probe head shall have a temperature operating range of -40 ... +120 °C (-40 ... +248 °F), with relative humidity accuracy specified between -40 ... +120 °C (-40 ... +248 °F). Probe shall be able to calculate and directly output relative humidity, temperature, absolute humidity, dew/frost point temperature, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, and water vapor pressure, water vapor saturation pressure. Probe shall have the ability to be calibrated in the field via PC connection. Traceable calibration certificate included.