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## INDIGO80 Handheld Indicator for Moisture, Temperature, CO<sub>2</sub>, vaporized Hydrogen Peroxide Measurement in Demanding Spot-Checking Applications



### Features/Benefits:

- Portable indicator with rechargeable battery
- Dual cable ports to be used for connecting a combination of 2 probes and/or transmitters simultaneously
- Display shows graphical and numerical readings
- Able to log up to 5.5 million real-time data values. Data can be transferred to a PC via Vaisala's free [Insight PC Software](#) using the USB-C port
- Standard offering of "handheld" probes: HMP80, DMP80, GMP252 (all probes sold separately)
- Compatible with all Indigo smart probes: HMP1, HMP3, HMP4, HMP5, HMP7, HMP8, HMP9, TMP1, DMP5, DMP6, DMP7, DMP8, GMP251, MMP8, HPP271, HPP272
- Compatible with Indigo300, Indigo510, and Indigo520 Transmitters for configuration and/or calibration
- Weatherproof carrying case available for indicator and probe storage and protection

### Summary:

The Indigo80 Handheld Indicator is a portable measurement indicator that is ideal for spot-checking, process monitoring, as well as configuring, troubleshooting, calibrating, and adjusting Indigo-compatible probes and transmitters. Indicator shall be rated for operating conditions of  $-20 \dots +50 \text{ }^{\circ}\text{C}$  ( $-4 \dots +122 \text{ }^{\circ}\text{F}$ ) and 20 ... 85 %RH, when ambient temperature is less than or equal to  $+40 \text{ }^{\circ}\text{C}$  ( $+104 \text{ }^{\circ}\text{F}$ ). Indicator housing to be rated IP40 and designed for indoor use. Indicator must be capable of logging up to 5.5 million real-time data values, with the logging intervals available between 1 second and 12 hours. Indicator must have alarming functionality available. Optional accessories shall include a magnetic hanger, weatherproof carrying case, and an AC-adaptor for wall charging.

Indicator must be compatible with all Indigo smart probes for measurement of moisture parameters, temperature, CO<sub>2</sub>, or vaporized hydrogen peroxide. Must be able to log real-time data values, where the data can also be transferred to a PC through USB-C connection. Indicator must be able to connect to a permanently installed transmitter and a reference probe simultaneously to perform field calibrations through a service cable connection.

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## HMP80 Series Handheld Humidity and Temperature Probe



Indigo80 with HMP80N (left),  
HMP80L (right)

### Features/Benefits:

- Portable design optimized for industrial spot-checking and field calibration. Designed for use with the **Indigo80 Handheld Indicator**. Also compatible with Indigo transmitters, and Vaisala's free [Insight PC Software](#) (handheld and transmitters sold separately)
- Relative Humidity accuracy up to  $\pm 0.8$  %RH
- Temperature accuracy up to  $\pm 0.1$  °C ( $\pm 0.18$  °F)
- Available in Normal and Long models, HMP80N and HMP80L, respectively
- Uses Vaisala HUMICAP® R2C sensor for superior accuracy and stability
- Sensor purge provides superior chemical resistance for harsh conditions
- Rated for IP66 conditions with probe connection cable connected to the probe
- 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.
- Traceable calibration certificate included

### Summary:

Humidity and temperature probe has been designed for portable use, especially with the [Indigo80 Handheld Indicator](#). Probe shall incorporate a thin-film polymer capacitive HUMICAP® R2C humidity sensor to measure 0 ... 100 %RH with accuracy of  $\pm 0.8$  %RH from 0 ... 90 %RH at  $+23$  °C ( $+73.4$  °F). 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  $\Omega$  RTD with accuracy up to  $\pm 0.1$  °C ( $\pm 0.18$  °F) at  $+23$  °C ( $+73.4$  °F). Probe handle shall be IP66 rated (when probe connection cable is connected to the probe) with an operating temperature range of  $-10$  ...  $+60$  °C ( $+14$  ...  $+140$  °F). Probe head of HMP80N to be rated for operating temperature range of  $-20$  ...  $+60$  °C ( $-4$  ...  $+140$  °F). Probe head of HMP80L to be rated for operating temperatures of  $-50$  ...  $+120$  °C ( $-58$  ...  $+248$  °F), with a short-time measurement range up to  $+180$  °C ( $+356$  °F). Suitable for use in air, nitrogen, hydrogen, argon, helium, oxygen, and vacuum conditions. Probe to have chemical tolerance to temporary exposure during cleaning with deionized water or isopropyl alcohol (70%). Probe to be powered by 15 ... 30 VDC and have a non-isolated, RS-485 output. 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. Traceable calibration certificate included.

## DMP80 Series Handheld Dew Point and Temperature Probe



DSC74SP Sample Cell (left),  
DMP80 Probe (middle), Indigo80  
Handheld Indicator (right)

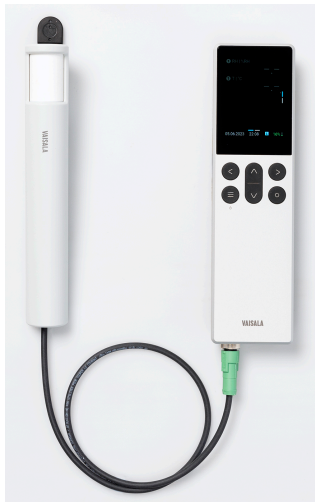
### Features/Benefits:

- Portable design optimized for industrial spot-checking and field calibration. Designed for use with the **Indigo80 Handheld Indicator**. Also compatible with Indigo transmitters, and Vaisala's free [Insight PC Software](#) (handheld and transmitters sold separately)
- Uses Vaisala DRYCAP® sensor technology for superior accuracy and stability
- Dew point measurement accuracy up to  $\pm 2\text{ }^{\circ}\text{C}$  ( $\pm 3.6\text{ }^{\circ}\text{F}$ )
- Available with ISO or NPT threading for in-line process installation. ISO threading is compatible with Vaisala Sample Cell offering for easy installation
- Sensor purge and autocalibration functionalities provide superior chemical resistance for harsh conditions and help to maintain measurement accuracy between calibration intervals
- Rated for IP66 conditions with probe connection cable connected to the probe
- Calculated moisture parameter options: Dew/frost point temperature, relative humidity, absolute humidity, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure
- Traceable calibration certificate included

### Summary:

Dew point and temperature probe has been designed for portable use, especially with the [Indigo80 Handheld Indicator](#). Probe shall incorporate a thin-film polymer capacitive DRYCAP® sensor to measure dew point temperatures between  $-40 \dots +60\text{ }^{\circ}\text{C}$  ( $-40 \dots +140\text{ }^{\circ}\text{F}$ ) with the DMP80A and  $-70 \dots +60\text{ }^{\circ}\text{C}$  ( $-94 \dots +140\text{ }^{\circ}\text{F}$ ) with the DMP80B. Accuracy of the measurements must be up to  $\pm 2\text{ }^{\circ}\text{C}$  ( $\pm 3.6\text{ }^{\circ}\text{F}$ ). Sensor purge must be available and allow for sensor to be heated briefly for use in environments with high concentrations of dust, chemicals, or certain cleaning agents. Temperature sensor shall be a platinum 100  $\Omega$  RTD and be able to measure in the range of  $0 \dots +60\text{ }^{\circ}\text{C}$  ( $+32 \dots +140\text{ }^{\circ}\text{F}$ ) with an accuracy of  $\pm 0.2\text{ }^{\circ}\text{C}$  ( $\pm 0.36\text{ }^{\circ}\text{F}$ ) at room temperature. Probe handle shall be IP66 rated (when probe connection cable is connected to the probe). Operating temperature range must be  $-10 \dots +60\text{ }^{\circ}\text{C}$  ( $+14 \dots +140\text{ }^{\circ}\text{F}$ ). Operating absolute pressure of probe head shall be  $0 \dots 20\text{ bar}$  ( $0 \dots 290\text{ psi}$ ). ISO threading configuration is compatible with sampling cell options, which can be used for in-line process installation. Suitable for use in air, nitrogen, hydrogen, argon, helium, and oxygen. Probe to have chemical tolerance to temporary exposure during cleaning with deionized water or isopropyl alcohol (70%). Probe to be powered by  $15 \dots 30\text{ VDC}$  and have a non-isolated, RS-485 output. Probe shall be able to calculate and directly output dew/frost point temperature, dry-bulb temperature, relative humidity, absolute humidity, enthalpy, mixing ratio, water concentration, water mass fraction, wet-bulb temperature, water vapor pressure, water vapor saturation pressure. Traceable calibration certificate included.

## GMP252 Carbon Dioxide Probe for PPM-Level Measurements



GMP252 Probe (top), GMP252 Probe with Handle (bottom left), Indigo80 Handheld (bottom right)

### Features/Benefits:

- Uses CARBOCAP® technology to offer exceptional stability
- Measurement range of 0 ... 10,000 ppm CO<sub>2</sub> with accuracy up to ± 40 ppm CO<sub>2</sub> (measures up to 30,000 ppm with reduced accuracy)
- Operating temperature range of -40 ... +60 °C (-40 ... +140 °F)
- Supports analog and digital outputs, or can be paired with a Vaisala Indigo transmitter for additional features
- Heated sensor head to prevent condensation
- Active temperature compensation measurement, also compensates for pressure, O<sub>2</sub>, and humidity
- IP65 classified housing; suitable for outdoor or harsh environments when installed with DTR250 radiation shield
- Available accessories: Flow-through adapter with gas ports, probe mounting flange, probe mounting clips, calibration adapter, spray shield, probe handle with magnetic hanger (shown in graphic)
- Compatible with Vaisala's [Insight PC Software](#) through USB connection. Ability to be field calibrated
- Traceable calibration certificate included

### Summary:

Carbon dioxide probe shall incorporate a CARBOCAP® NDIR sensor. Infrared (IR) light source must be used in place of a traditional incandescent light bulb to extend lifetime of sensor. Accuracy (including repeatability and non-linearity) at 25 °C (77 °F) and 1013 hPa between 0 ... 3,000 ppm CO<sub>2</sub> shall be ± 40 ppm CO<sub>2</sub>, and ± 2 % of reading from 3,000 ... 10,000 ppm. Operating humidity range shall be from 0 ... 100 %RH, non-condensing; sensor head shall have option to be heated to prevent condensation. Operating temperature range is -40 ... 60 °C (-40 ... 140 °F). Long term stability shall be < ± 60 ppm CO<sub>2</sub>/yr between 0 ... 3000 ppm. The probe shall be resistant to dust and most chemicals, such as as H<sub>2</sub>O<sub>2</sub> (up to 2000 ppm, non-condensing). Flow-through adapter accessory with gas ports available to enable tubing for easy and flexible remote measurement with a separate pump; option for multiplexer to be added for sampling gas from several locations. Analog outputs shall be scaled 0 ... 5/10 V or 0/4 ... 20 mA and correspond to the selected output scaling; digital outputs shall be Modbus® RTU or Vaisala Industrial protocol over RS-485. Operating voltage shall be 12 ... 30 VDC for digital or voltage outputs, or 20 ... 30 VDC with current outputs in use. Power consumption is typically 0.4 W and no greater than 0.5 W. Traceable calibration certificate included.