

INDIGO80 Handheld Indicator for Moisture, Temperature, CO₂, 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 $20 \dots 85 \text{ \%RH}$, 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, CO₂, 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 $\pm 0.8\% \text{RH}$
- Temperature accuracy up to $\pm 0.1\text{ }^{\circ}\text{C}$ ($\pm 0.18\text{ }^{\circ}\text{F}$)
- 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 $\pm 0.8\% \text{RH}$ from 0 ... 90 %RH at $+23\text{ }^{\circ}\text{C}$ ($+73.4\text{ }^{\circ}\text{F}$). 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 Ω RTD with accuracy up to $\pm 0.1\text{ }^{\circ}\text{C}$ ($\pm 0.18\text{ }^{\circ}\text{F}$) at $+23\text{ }^{\circ}\text{C}$ ($+73.4\text{ }^{\circ}\text{F}$). Probe handle shall be IP66 rated (when probe connection cable is connected to the probe) with an operating temperature range of $-10\text{ }^{\circ}\text{C}$... $+60\text{ }^{\circ}\text{C}$ ($+14\text{ }^{\circ}\text{C}$... $+140\text{ }^{\circ}\text{F}$). Probe head of HMP80N to be rated for operating temperature range of $-20\text{ }^{\circ}\text{C}$... $+60\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{C}$... $+140\text{ }^{\circ}\text{F}$). Probe head of HMP80L to be rated for operating temperatures of $-50\text{ }^{\circ}\text{C}$... $+120\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{C}$... $+248\text{ }^{\circ}\text{F}$), with a short-time measurement range up to $+180\text{ }^{\circ}\text{C}$ ($+356\text{ }^{\circ}\text{F}$). 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.

GMP252 Carbon Dioxide Probe for PPM-Level Measurements



Features/Benefits:

- Uses CARBOCAP® technology to offer exceptional stability
- Measurement range of 0 ... 10,000 ppm CO₂ with accuracy up to ± 40 ppm CO₂ (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, O₂, 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

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

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 CO₂ shall be ± 40 ppm CO₂, 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 CO₂/yr between 0 ... 3000 ppm. The probe shall be resistant to dust and most chemicals, such as as H₂O₂ (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.