

Vaisala Humidity, Temperature and CO₂ Instruments for HVAC Applications



VAISALA

Vaisala HVAC Instruments

The highest quality measurement instruments are essential when it comes to optimizing HVAC controls. That's why Vaisala offers reliable, accurate, and easy-to-use instruments for measuring humidity, temperature, and carbon dioxide. They can be used indoors or outdoors, and installed on walls or in ventilation ducts. Easy to install and maintain, our sensors and transmitters set the industry standard for energy efficiency, from the optimization of cooling towers to demand-controlled ventilation based on carbon dioxide levels.

We have renewed our HVAC products based on customer feedback. Here's what we've improved:

- Easier installation:
 - Easy access to screw terminals
 - Screws that stay in place
 - Dip switches for quick configuration
- Easier maintenance:
 - Fast sensor replacement
 - Easy maintenance of traceable measurement accuracy with exchangeable modules
 - Multiple communication options available (analog, digital BACnet/Modbus)
- Easier purchasing:
 - Standard items make it easy to choose the instrument you want
- The new CO₂ measurement technology – microglow www.vaisala.com/microglow – brings benefits to HVAC CO₂ measurements:
 - Sensor lifetime extended by 50%
 - Power consumption reduced by 25%

Here are the things you've come to expect from us that we haven't changed:

- True humidity and temperature measurement – our intelligent transmitter design ensures that electronic heating doesn't disturb humidity and temperature measurements
- Our humidity sensor, known for its excellent stability and reliability
- Our stable CO₂ sensor with the unique built-in reference measurement
- Quick and reliable deliveries





Humidity and Temperature

Vaisala has a comprehensive offering of instruments for measuring relative humidity and temperature in HVAC applications. Vaisala humidity instruments are known for excellent long term stability and reliable operation ensuring low maintenance need throughout the product life cycle.

The HVAC product range consists of duct and wall mount transmitters as well as transmitters with solar radiation shields for outdoor installations. Hand-held instruments are available for spot-checking and on-site calibration.

±3% HUMIDITY AND TEMPERATURE INSTRUMENTS

Vaisala INTERCAP® humidity and temperature transmitters combine easy installation and reliable operation with low requirement for maintenance. The transmitters are equipped with interchangeable INTERCAP® humidity sensor, which can be easily exchanged in the field with minimum downtime.




HMW82/83 Wall-mount Humidity and Temperature Transmitters	HMW88/89 Wall-mount Humidity and Temperature Transmitters	HMD82/83 Duct-mount Humidity and Temperature Transmitters	HMS82/83 Outdoor Humidity and Temperature Transmitters
			
Output parameters: Relative humidity Temperature	Output parameters: Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy	Output parameters: Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy	Output parameters: Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy
Outputs: 2 x 4...20 mA or 2 x 0...10 V	Outputs: 2 x 4...20 mA or 2 x 0...10 V	Outputs: 2 x 4...20 mA or 2 x 0...10 V	Outputs: 2 x 4...20 mA or 2 x 0...10 V
IP30	IP65 (NEMA4)	IP65 (NEMA4)	IP65 (NEMA4)
T-only models available		T-only models available	Integrated solar radiation shield

Take a look at the ±3% instruments and watch the installation video of HMS82/83 transmitter at www.vaisala.com/HMDW80.

±2% HUMIDITY AND TEMPERATURE INSTRUMENTS



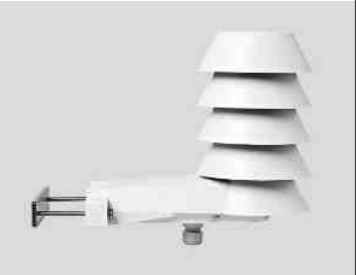
Vaisala HUMICAP® humidity and temperature transmitters are intended for HVAC applications where high accuracy, stability and reliable operation are required. These transmitters are delivered with a certificate from a NIST traceable calibration. Transmitters can be conveniently calibrated in the field using Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70.

±2% Wall-mount Transmitters

HMW90 Series Wall-mount Humidity and Temperature Transmitters	HMW110/112 Wall-mount Humidity and Temperature Transmitters	HMT120/130 Series Humidity and Temperature Transmitters
		
<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy Mixing ratio Absolute humidity Dew point depression <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA or 2 x 0...5/0...10 V with relay <p>Digital output:</p> <ul style="list-style-type: none"> BACnet and Modbus <p>IP30</p> <p>T-only models available</p> <p>Four color options</p> <p>Optional decorative cover</p> <p>User exchangeable measurement module available</p>	<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA <p>IP65 (NEMA4)</p>	<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Enthalpy Mixing ratio <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA or 2 x 0...1 / 0...5 / 0...10 V <p>IP65 (NEMA4)</p> <p>T-only models available</p> <p>Available with fixed and remote probe</p> <p>Interchangeable probes available</p>

Watch the installation and calibration video of the HMW90 series to learn how easy it is: www.vaisala.com/HMW90.





±2% Duct-mount and Outdoor Transmitters

HMD60/70 Duct-mount Humidity and Temperature Transmitters	HMD110/112 Duct-mount Humidity and Temperature Transmitters	HMS110/112 Outdoor Humidity and Temperature Transmitters	HMT120/130 Series Humidity and Temperature Transmitters
			
<p>Output parameters:</p> <ul style="list-style-type: none"> Relative Humidity Temperature <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA or 2 x 0...1 / 0...5 / 0...10V <p>IP65 (NEMA4)</p> <p>T-only models available</p> <p>A robust metal enclosure</p>	<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA <p>IP65 (NEMA4)</p>	<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA <p>IP65 (NEMA4)</p> <p>Integrated solar radiation shield</p>	<p>Output parameters:</p> <ul style="list-style-type: none"> Relative humidity Temperature Dew point temperature Enthalpy Mixing ratio <p>Analog outputs:</p> <ul style="list-style-type: none"> 2 x 4...20 mA or 2 x 0...1 / 0...5 / 0...10 V <p>IP65 (NEMA4)</p> <p>T-only models available</p> <p>Available with fixed and remote probe</p> <p>Interchangeable probes available</p> <p>Solar radiation shield (DTR504A) for outdoor installations</p>

Carbon Dioxide

Vaisala's carbon dioxide instrument range for HVAC consists of duct and wall mount transmitters. They are easy to install and require practically no maintenance.




Vaisala carbon dioxide instruments are equipped with the proprietary CARBOCAP® sensor, which offers superior stability due to its built-in reference measurements. The internal referencing is vital in building with round-the-clock occupancy, where technologies based on assumed background CO₂ level reference is not applicable.

GMW90 Series Wall-mount Carbon Dioxide, Temperature, and Humidity Transmitters	GMW115/116 Wall-mount Carbon Dioxide Transmitters	GMW20 Series Wall-mount Carbon Dioxide Transmitters	GMD20 Series Duct-mount Carbon Dioxide Transmitters
			
<p>Output parameters:</p> <ul style="list-style-type: none"> Carbon Dioxide Relative humidity Temperature <p>Calculated humidity parameters:</p> <ul style="list-style-type: none"> Dew point temperature Wet bulb temperature Enthalpy Mixing ratio Absolute humidity Dew point depression <p>Analog outputs (2 and 3 channel models available):</p> <ul style="list-style-type: none"> 0...20 mA / 4...20 mA or 0...5 / 0...10 V (with relay) <p>Digital output:</p> <ul style="list-style-type: none"> BACnet and Modbus <p>CO₂ measurement range:</p> <ul style="list-style-type: none"> 0...5 000 ppm <p>Versions with display, solid front and LED CO₂ indication.</p> <ul style="list-style-type: none"> Four color options Optional decorative cover User exchangeable measurement modules available 	<p>Output parameters:</p> <ul style="list-style-type: none"> Carbon Dioxide Temperature (GMW116 only) <p>Analog output options:</p> <p>GMW115:</p> <ul style="list-style-type: none"> (CO₂) 4...20 mA or 0...10 V <p>GMW116:</p> <ul style="list-style-type: none"> (CO₂ and temperature) 0...10 V <p>CO₂ measurement ranges:</p> <ul style="list-style-type: none"> 0...2 000 ppm 0...5 000 ppm 0...10 000 ppm 0...20 000 ppm 	<p>Output parameters:</p> <ul style="list-style-type: none"> Carbon Dioxide Optional temperature measurement <p>Analog output options:</p> <ul style="list-style-type: none"> 0...20 mA, 4...24 mA, 0...10 V Relay and display <p>CO₂ measurement ranges:</p> <ul style="list-style-type: none"> 0...2 000 ppm 0...5 000 ppm 0...10 000 ppm 0...20 000 ppm 	<p>Output parameter:</p> <ul style="list-style-type: none"> Carbon Dioxide <p>Analog output options:</p> <ul style="list-style-type: none"> 0...20 mA, 4...20 mA, 0...10 V Optional relay and display <p>CO₂ measurement ranges:</p> <ul style="list-style-type: none"> 0...2 000 ppm 0...5 000 ppm 0...10 000 ppm 0...20 000 ppm

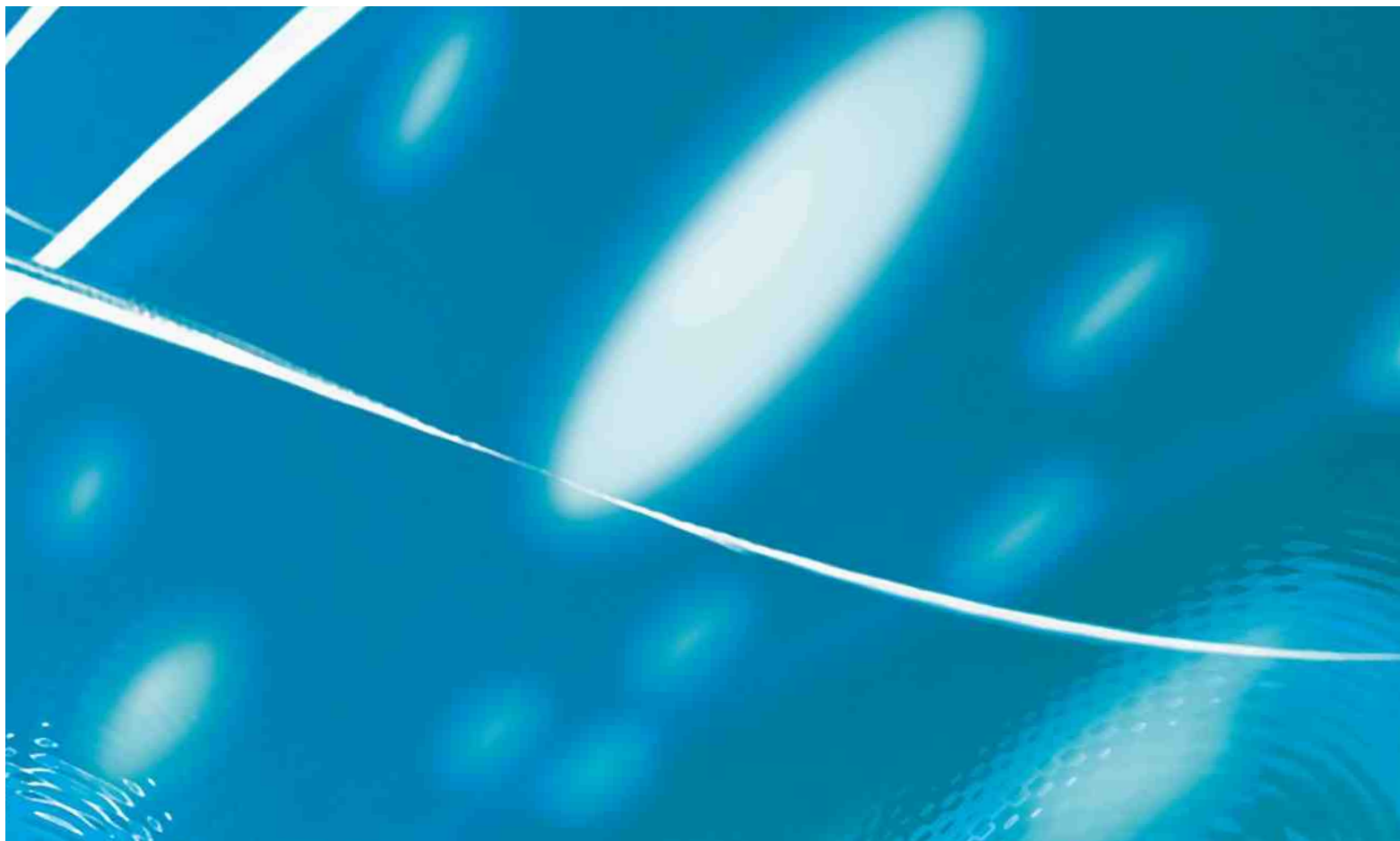
Watch the calibration video of GMW90 and learn three easy methods of calibrating the transmitter: www.vaisala.com/GMW90.

Hand-Held Meters for Spot-Checking and Calibration

Vaisala's HVAC offering includes hand-held instruments for spot-checking measurements of humidity, temperature and carbon dioxide. These easy-to-use meters have a multilingual user interface and a variety of humidity parameters to choose from. The large graphical user interface enables monitoring the stabilization of the measurement.

HM40 Hand-held Humidity and Temperature Meter	HM70 Hand-held Humidity and Temperature Meter	GM70 Hand-held Carbon Dioxide Meter
		
<p>Operating temperature range: -10...+60°C (+14...+140°F)</p> <p>Fixed and remote probe option</p> <p>No connections to fixed instruments</p>	<p>Operating temperature range from -70°C to +180°C, depending on probe</p> <p>Three remote probe options</p> <p>Calibration interface with the following HVAC instruments: HMT120/130</p> <p>Data logging and data transfer to PC</p>	<p>Operating temperature range: -20...+60°C (-4...+140°F)</p> <p>Wide selection of CO₂ measurement ranges</p> <p>Calibration interface to the following HVAC instruments: GMW90, GMW20, GMD20</p> <p>Data logging and data transfer to PC</p>

Read more about Vaisala's HVAC products www.vaisala.com/HVAC.



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