Vaisala Humidity, Temperature, and CO_2 Instruments for HVAC Applications

VAISALA

Vaisala HVAC Instruments – the Industry Standard for HVAC

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

Our instruments for HVAC applications offer a variety of benefits:

- Easy installation:
  - Easy access to screw terminals
  - Screws that stay in place
  - Dip switches for quick configuration
- Easy maintenance:
  - Quick sensor replacement
  - Easy maintenance of traceable measurement accuracy with exchangeable modules
  - Multiple communication options available (analog, digital BACnet/Modbus)
- Easy to buy standard items:
  - Standard items make it easy to choose the instrument you want
- Benefits of microglow CO_2 measurement technology in HVAC CO_2 measurements:
  - Sensor lifetime is extended by 50%
  - Ensures highly stable and accurate measurement performance for CO_2 instruments
  - Low-power silicon-based infrared source solves many of the challenges that affect traditional infrared sources

All Vaisala instruments for HVAC applications offer true humidity and temperature measurement thanks to our intelligent transmitter design, which ensures that measurements are not disturbed by electronic sensor heating. The humidity sensors used in our instruments have excellent stability and reliability, while our CO_2 sensors include a unique built-in reference measurement to prevent drift and ensure long-term accuracy.

All Vaisala HVAC instruments can be purchased from the Vaisala online store and are available for fast, reliable delivery.

Online Store

store.vaisala.com

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 Passive Pt100 version	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

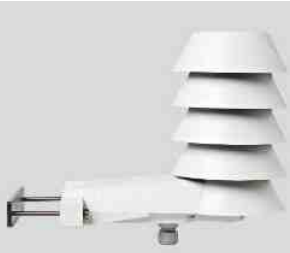
Vaisala HUMICAP® humidity and temperature transmitters are intended for HVAC applications where high accuracy, stability and reliable operation are required. These transmitters are delivered with a certificate from a NIST traceable calibration. Transmitters can be conveniently calibrated in the field 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
		
Output parameters: Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy Mixing ratio Absolute humidity Dew point depression	Output parameters: Relative humidity Temperature Dew point temperature Wet bulb temperature Enthalpy	Output parameters: Relative humidity Temperature Dew point temperature Enthalpy Mixing ratio
Analog outputs: 2 x 4…20 mA or 2 x 0...5/0...10 V with relay Digital output: BACnet and Modbus	Analog outputs: 2 x 4…20 mA Digital outputs: Modbus	Analog outputs: 2 x 4…20 mA or 2 x 0…1 / 0…5 / 0…10 V
IP30	IP65 (NEMA4)	IP65 (NEMA4) Easily cleanable mechanics designed specifically for cleanroom use.
T-only models available		T-only models available
Four color options		Available with fixed and remote probe
Optional decorative cover		
User exchangeable measurement module available		Interchangeable probes available
±1.7%RH accuracy		±1.5%RH accuracy
Calibration certificate included	Calibration certificate included	Calibration certificate included

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
			
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 Enthalpy Mixing ratio
Analog outputs: 2 x 4…20 mA or 2 x 0…1 / 0…5 / 0…10V	Analog outputs: 2 x 4…20 mA Digital output: Modbus	Analog outputs: 2 x 4…20 mA Digital output: Modbus	Analog outputs: 2 x 4…20 mA or 2 x 0…1 / 0…5 / 0…10 V
IP65 (NEMA4)	IP65 (NEMA4)	IP65 (NEMA4)	IP65 (NEMA4)
			Easily cleanable mechanics designed specifically for cleanroom use.
T-only models available			T-only models available
A robust metal enclosure		Integrated solar radiation shield	Available with fixed and remote probe Interchangeable probes available Solar radiation shield (DTR504A) for outdoor installations
			±1.5%RH accuracy
Calibration certificate included	Calibration certificate included	Calibration certificate included	Calibration certificate included

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 CO_2 level reference is not applicable.

GMW90 Series Wall-mount Carbon Dioxide, Temperature, and Humidity Transmitters	**GMW80 Series Carbon Dioxide, Humidity and Temperature Transmitters**	**GMD20 Series Duct-mount Carbon Dioxide Transmitters**	**GMP252 Carbon Dioxide Probe with DTR250 Radiation Shield**
			
Output parameters: Carbon Dioxide Relative humidity Temperature Calculated humidity parameters: Dew point temperature Wet bulb temperature Enthalpy Mixing ratio Absolute humidity Dew point depression	Output parameters: Carbon Dioxide Pt1000 Relative humidity	Output parameter: Carbon Dioxide	Output parameters: Carbon Dioxide Calculated humidity parameters: Dew point temperature Wet bulb temperature Enthalpy Mixing ratio
Analog outputs (2 and 3 channel models available): 0…20 mA / 4…20 mA or 0...5 / 0...10 V (with relay) Digital output: BACnet and Modbus	Analog output options: 4 ...20 mA, 0 ... 10V	Analog output options: 0…20 mA, 4…20 mA, 0…10 V Optional relay and display	Analog output options: 0 … 20 mA, 4 … 20 mA, 0 … 10V Digital output: Modbus
CO_2 measurement range: 0…5 000 ppm Accuracy ±50 ppm at 1000 ppm CO_2 ±75 ppm total accuracy over 5 years	CO_2 measurement ranges: 0…2 000 ppm Accuracy ±60 ppm at 1000 ppm	CO_2 measurement ranges: 0…2 000 ppm 0…5 000 ppm 0…10 000 ppm 0…20 000 ppm Accuracy ±60 ppm at 1000 ppm	Analog output ranges: 0 ...2000 ppm 0 … 3000 ppm 0 … 5000 ppm Accuracy @ 400 ppm: ±40 ppm
Versions with display, solid front and LED CO_2 indication. Four color options Optional decorative cover User exchangeable measurement modules available Calibration certificate included	Versions with display, solid front, LED CO_2 indication and relay and GMW88 is IP64-rated.	Reliable measurement with the sensor actually inside the duct	Weather proof and fully temperature compensated for a wide temperature range.
Ideal for demand-controlled ventilation	Ideal for demand-controlled ventilation	Ideal for demand-controlled ventilation	Ideal for outdoor CO_2 measurement for DCV

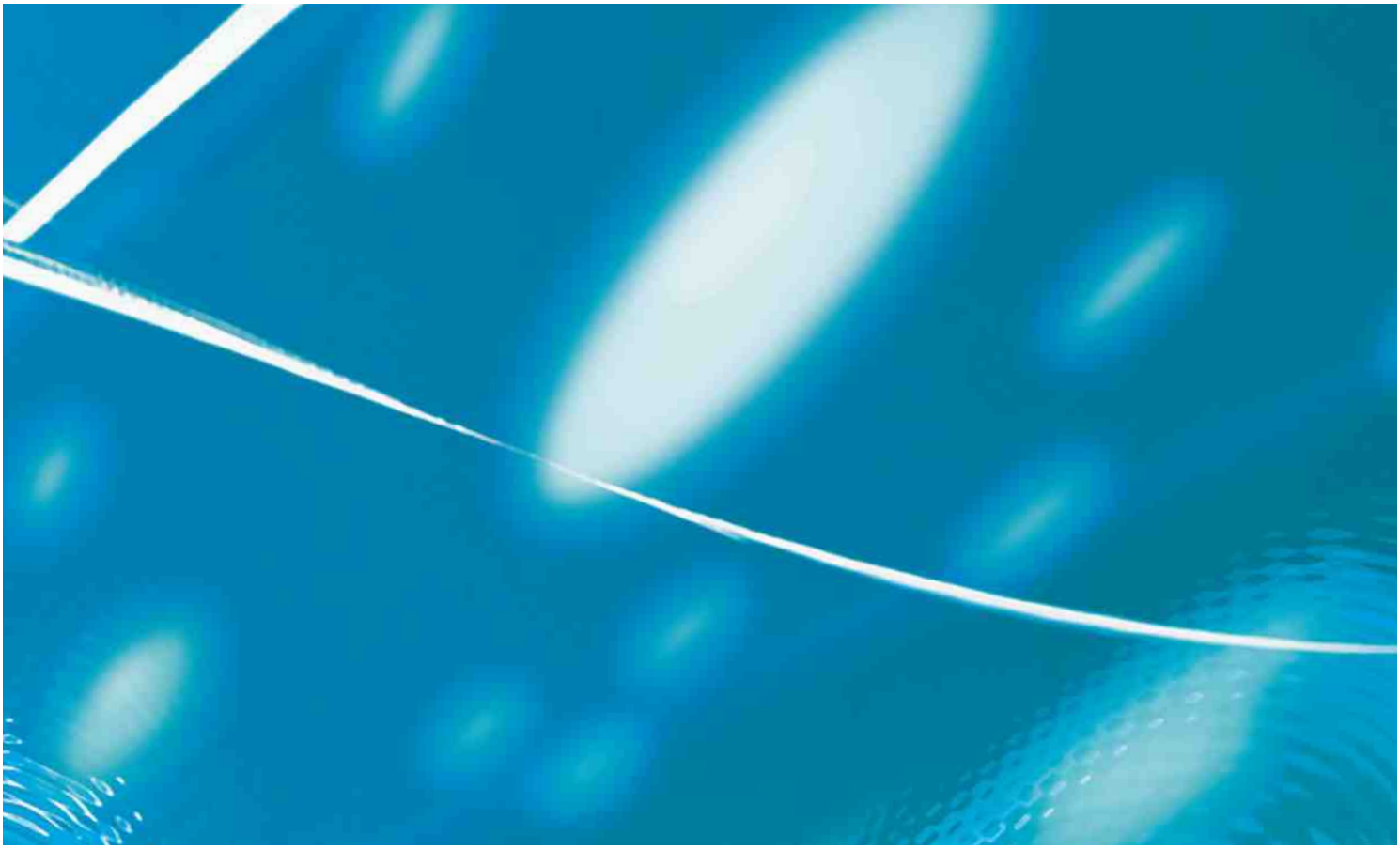
Watch the GMW80 installation video and see how fast the transmitter is installed: www.vaisala.com/GMW80.
Learn more about the Vaisala CARBOCAP® Technology by watching this video ww.vaisala.com/CARBOCAP.

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 Series	HM70 Hand-held Humidity and Temperature Meter	GM70 Hand-held Carbon Dioxide Meter
		
Operating temperature range: -40 ...+100° (-40 ...212 °F), depending on probe	Operating temperature range from -70°C to +180°C (-94 ...356 °F), depending on probe	Operating temperature range: -20…+60°C (-4…+140°F)
Four models availabe: – HM41 Humidity and Temperature Meter – HM42 Humidity and Temperature Meter with thin 4 mm remote probe – HM45 Humidity and Temperature Meter with standard remote probe – HM46 Humidity and Temperature Meter with long, stainless steel remote probe	Three remote probe options	Wide selection of CO_2 measurement ranges
No connections to fixed instruments	Calibration interface with the following HVAC instruments: HMW90, HMD60/70, HMT120/130 Data logging and data transfer to PC	Calibration interface to the following HVAC instruments: GMW90, GMD20 Data logging and data transfer to PC

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



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