Vaisala Humidity, Temperature and CO_2 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 CO_2 measurement technology – microglow www.vaisala.com/microglow – brings benefits to HVAC CO_2 measurements:
  - Sensor lifetime is extended by 50%
  - Only 1/3 of the power consumption

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 CO_2 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

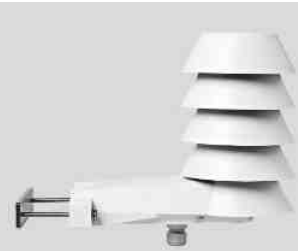
Vaisala HUMICAP® humidity and temperature transmitters are intended for HVAC applications where high accuracy, stability and reliable operation are required. These transmitters are delivered with a certificate from a NIST traceable calibration. Transmitters can be conveniently calibrated in the field 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
		
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	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 Four color options Optional decorative cover User exchangeable measurement module available ±1.7%RH accuracy		T-only models available Available with fixed and remote probe Interchangeable probes available ±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	Analog outputs: 2 x 4…20 mA	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 and Temperature Transmitters**	**GMD20 Series** **Duct-mount Carbon Dioxide Transmitters**
		
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 Temperature setpoint (GMW86PT)	Output parameter: Carbon Dioxide
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
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
Versions with display, solid front and LED CO_2 indication. Four color options Optional decorative cover User exchangeable measurement modules available Calibration certificate included		Reliable measurement with the sensor actually inside the duct Accuracy ±60 ppm at 1000 ppm
Ideal for demand-controlled ventilation	Ideal for demand-controlled ventilation	Ideal for demand-controlled ventilation

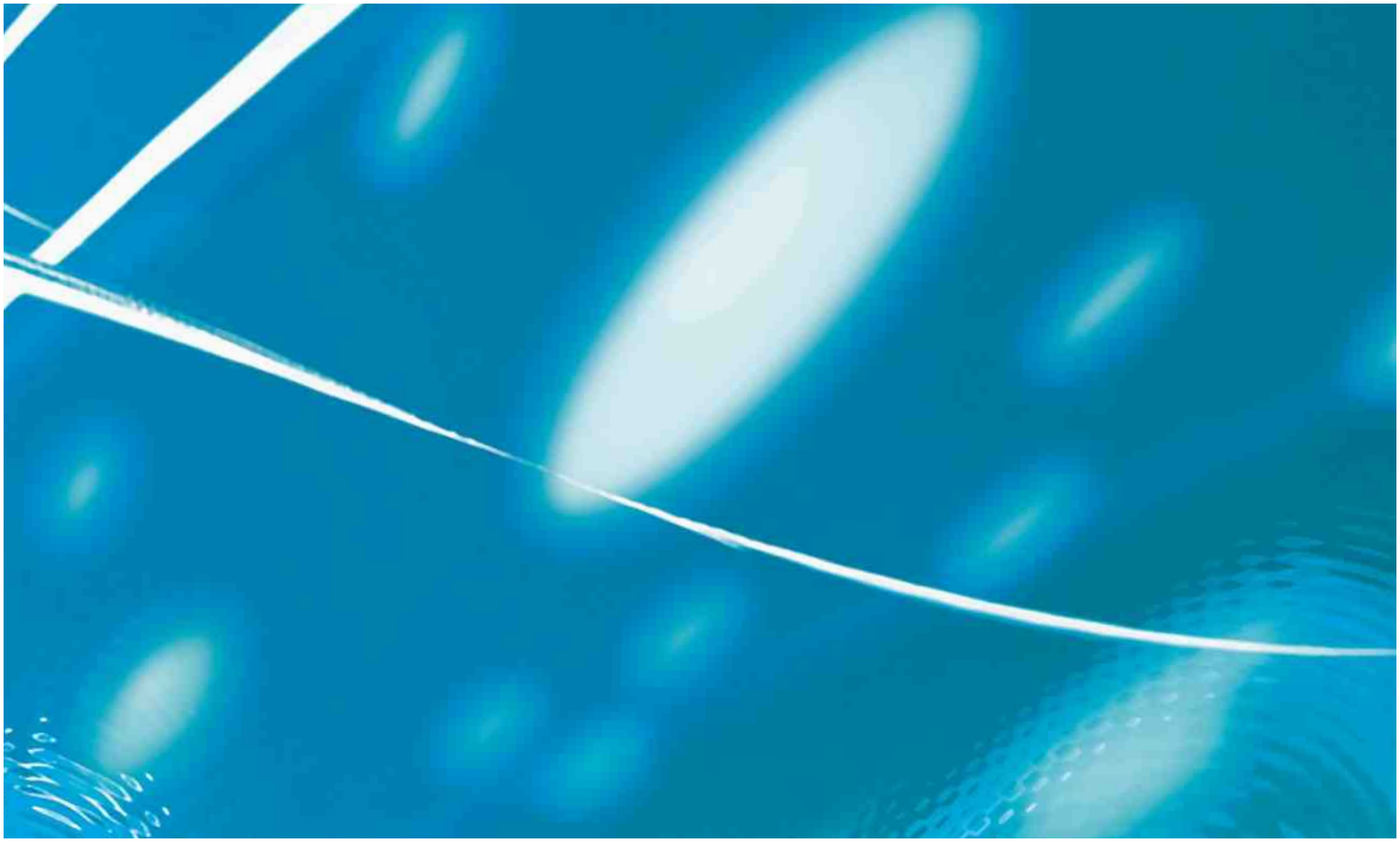
Watch the calibration video of GMW90 and learn three easy methods of calibrating the transmitter: www.vaisala.com/GMW90.

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 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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