VAISALA

HMM100 Humidity Module

For Environmental Chambers
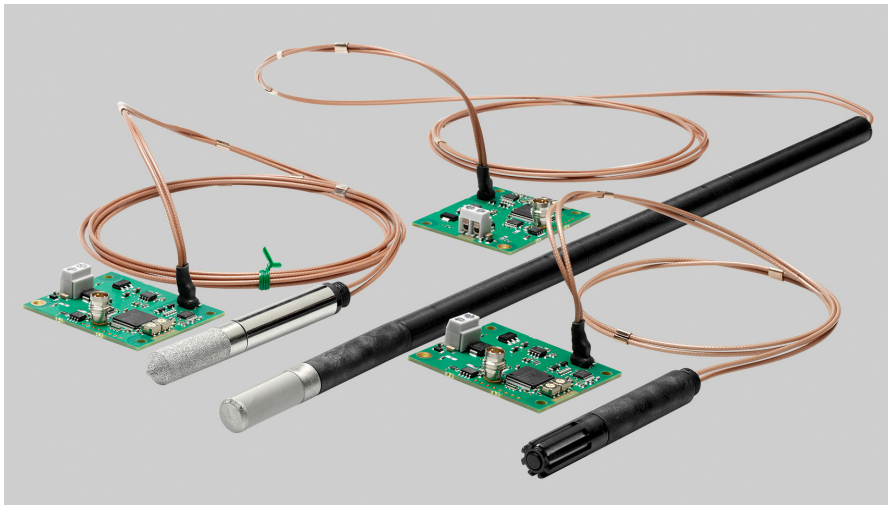
Vaisala HUMICAP® Humidity Module HMM100 is an open frame module for integration into environmental chambers. The modules provide a single analog output channel for relative humidity (RH) or dew point (T_d).

Benefits

- Excellent measurement accuracy
- Low-maintenance
- Easy to install
- Durable

Two types of probes are available, one made of stainless steel, the other of plastics. The plastic probe comes in two sizes, a standard one and an extended 400-mm-long option. Several cable lengths up to 3 meters are available. Both probes use the Vaisala HUMICAP® 180R sensor which ensures excellent measurement accuracy.

Robust and Reliable

The HMM100 probe works in freezing conditions (-70 °C (-94 °F)) and also in temperatures up to +180 °C (+356 °F). HMM100 is easy to install and the probe can be freely placed in a test chamber as the speed of airflow does not affect the measurement.

Low-maintenance

Compared to psychrometers, HMM100 requires very little maintenance. There is no wick that needs changing and there is no need for a water tank or water pump. Thus, environmental stress screening can be done reliably.

Accessories

The accessories available are a component board mounting bracket with a lid, probe clamp, USB cable for service use, a module housing, and a probe mounting flange.

Technical Data

Measurement Performance

Relative Humidity

Measurement range	0 ... 100 %RH
Factory calibration uncertainty (+20 °C / +68 °F)	±1.5 %RH
Humidity sensor types	Vaisala HUMICAP® 180R Vaisala HUMICAP® 180V
Accuracy at -20 ... +40 °C (-4 ... +104 °F) (Incl. Non-Linearity, Hysteresis and Repeatability):	
0 ... 90 %RH 90 ... 100 %RH	±2 %RH ±3 %RH
Accuracy at -40 ... -20 °C and +40 ... +180 °C (-40 ... -4 °F and +104 ... +356 °F) (Incl. Non-Linearity, Hysteresis and Repeatability):	
0 ... 90 %RH 90 ... 100 %RH	±2.5 %RH ±3.5 %RH

Dew Point Temperature

Measurement range	-20 ... +100 °C (-4 ... +212 °F) T_d
Accuracy (incl. non-linearity, hysteresis and repeatability) when dew point depression <20 °C (+68 °F) (Ambient temperature - dew point)	±2 °C (±3.6 °F) T_d

Operating Environment

EMC compliance	Applicable parts of EN61326-1, Generic Environment
Operating Temperature	
Component board	-5 ... +55 °C (+23 ... +131 °F)
Stainless steel probe Plastic probe (standard body) Plastic probe (extended 400-mm (16-in) body)	-70 ... +180 °C (-94 ... +356 °F) -70 ... +180 °C (-94 ... +356 °F) -70 ... +120 °C (-94 ... +248 °F)
Plastic grid and membrane filter	-20 ... +80 °C (-4 ... +176 °F)
Porous PTFE, stainless steel sintered, and PPS plastic grid with stainless steel net filter	-70 ... +180 °C (-94 ... +356 °F)

Mechanical Specifications

Service cable connector	M8 series 4-pin (male)
Probe diameter	12 mm (0.5 in)
Probe Cable Lengths	
Stainless steel probe Plastic probe (standard body) Plastic probe (extended 400-mm (16 in) body)	1.55/2.9 m (5.1/9.5 ft) 0.6/1.55/2.9 m (2/5.1/9.5 ft) 1.55 m (5.1 ft)
Probe Material	
Stainless steel probe Plastic probe Extension tube for 400-mm probe	AISI316/PPS PPS POM
Probe mounting clamp	AISI316
Mounting Bracket Material	
Lid	ABS/PC
Bottom plate	Al
Module housing material	ABS/PC (cover)

Inputs and Outputs

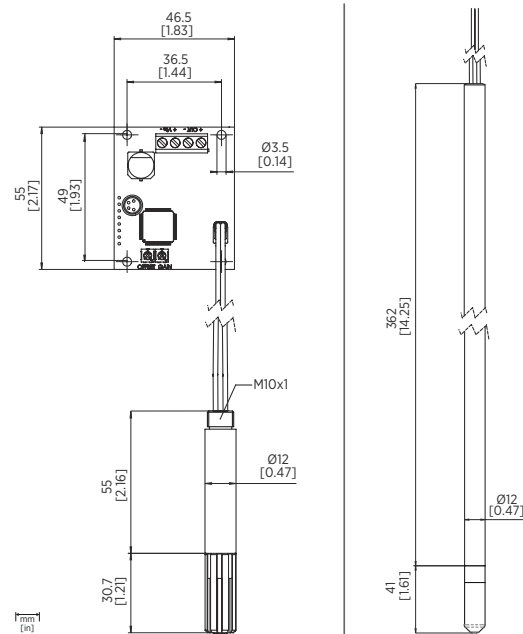|	
Power consumption	6 mA
Operating Voltage	
2-wire model 3-wire model	24 VDC 10 ... 35 VDC or 24 VAC ±20 % 15 ... 35 VDC or 24 VAC ±20 % when 0 ... 10 V output is used
Analog Output Types (1 Output Selectable)	
2-wire model 3-wire model	4 ... 20 mA (loop-powered) 0 ... 20 mA, 0 ... 1/5/10 V
Max. wire size	0.5 ... 1.5 mm² (AWG)
Service port	M8 connector for USB cable

Spare Parts and Accessories

Humidity sensor	HUMICAP180R
Humidity sensor	HUMICAP180V
Plastic grid filter	6221
Membrane filter	10159HM
Porous PTFE filter	219452SP
Stainless steel sintered filter	HM47280SP
PPS plastic grid with stainless steel net filter	DRW010281SP
Mounting bracket with lid	225979
Module housing (IP65)	226060
Probe mounting flange	226061
Probe mounting clamp set (10 pcs)	226067
USB cable	226068

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