HMM100 Humidity Module for Environmental Chambers

The Vaisala HUMICAP® Humidity Module HMM100.

Features/Benefits

- Full temperature compensation over the operating temperature range of -70 ˚C ... +180 ˚C
- High temperature tolerance, also suitable for heat-sterilization
- Excellent measurement accuracy with Vaisala HUMICAP® 180R sensor
- Durable
- Easy field calibration by trimmers
- Maintenance-free
- Easy to install
- Applications: test chambers, incubators

The HMM100

The 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 dewpoint (T_d).

Two probes are available, one made of plastics, the other of stainless steel. Several cable lengths up to 3 meters are available. Both the probes have the Vaisala HUMICAP® 180R sensor which ensures excellent measurement accuracy.

Robust and reliable

The HMM100 probe works in freezing conditions (-70 ˚C) and also in temperatures up to +180 ˚C. The 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.

Maintenance-free

Compared to psychrometers, the HMM100 is practically maintenance-free. 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

Performance

RELATIVE HUMIDITY

Measurement range	0 ... 100 %RH
Accuracy (incl. non-linearity, hysteresis and repeatability)	
temperature range	-20 ... +40 °C
0 ... 90 %RH	±2 %RH
90 ... 100 %RH	±3 %RH
temperature range	-40 ... -20 °C, +40 ... +180 °C
0 ... 90 %RH	±2.5 %RH
90 ... 100 %RH	±3.5 %RH
Factory calibration uncertainty (+20 °C)	±1.5 %RH
Humidity sensor	Vaisala HUMICAP® 180R

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 (Ambient temperature - dew point)	±2 °C T_d

Operating environment

Operating temperature range	
component board	-5 ... +55 °C (+23 ... +131 °F)
stainless steel and plastic probe	-70 ... +180 °C (-94 ... +356 °F)
porous PTFE filter stainless steel, sintered filter	-70 ... +180 °C (-94 ... +356 °F)
plastic grid, membrane filter	-20 ... +80 °C (-4 ... +176 °F)
Electromagnetic compatibility	Complies with EMC standard EN61326-1, for use in light industrial environments

Input and outputs

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

Mechanics

Service cable connector	M8 series 4-pin (male)
Probe diameter	12 mm
Probe cable lengths	0.6/1.55/2.9 m
Probe material	
plastics	PPS
stainless steel	AISI316/PPS
Probe mounting clamp	AISI316
Mounting bracket material	
lid	ABS/PC
bottom plate	Al
Module housing material	ABS/PC (cover)

Options and accessories

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

Dimensions