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 heatsterilization
- Excellent measurement accuracy with Vaisala HUMICAP® 180R sensor
- Durable
- Easy field calibration by trimmers
- Maintenance-free
- Easy to install
- Applications: test chambers, incubators

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 dew point (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 $^{\circ}$ C) and also in temperatures up to +180 $^{\circ}$ 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 | 3 |
| and repeatability) | |
| temperature range | -20+40 °C |
| 0 90 %RH | ±2 %RH |
| 90 100 %RH | ±3 %RH |
| temperature range | -4020 °C,+40+180 °C |
| 0 90 %RH | ±2.5 %RH |
| 90 100 %RH | ±3.5 %RH |
| Factory calibration uncertainty (+20 °C | 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 $^{\circ}\mathrm{C}$ | ±2 °C T _d |
| (Ambient temperature - dew point) | _ |

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 | Applicable parts of EN61326-1, |
| | Generic Environment |

Input and Outputs

| Operating voltage | | |
|---|--|--|
| 2-wire model | 24 VDC | |
| 3-wire model | 10 35 VDC or 9 24 VAC | |
| | $15 \dots 35 \text{VDC}$ or $14 \dots 24 \text{VAC}$ when $0 \dots 10 \text{V}$ | |
| | 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 mm ² (AWG) | |

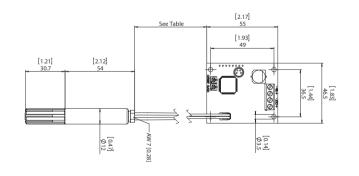
Mechanics

| 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





Service port



M8 connector for USB cable

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