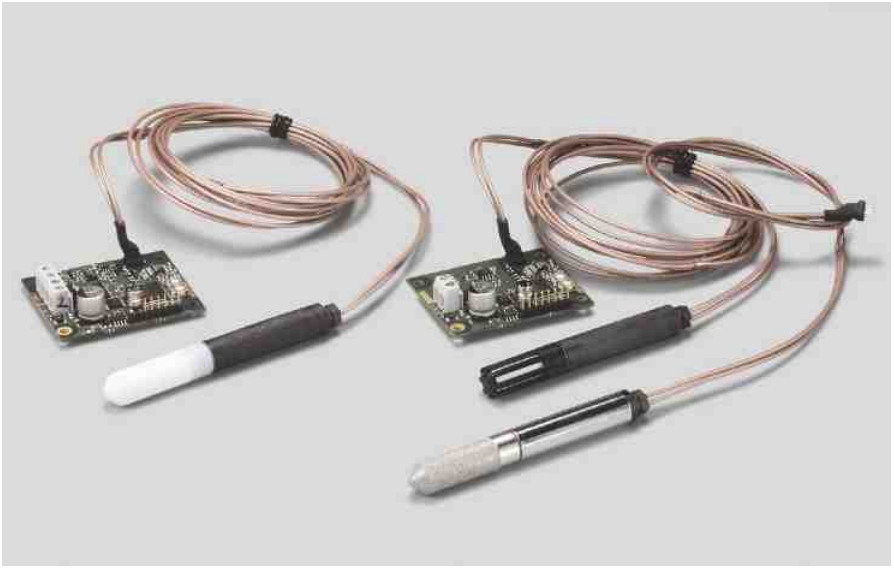
# ТРАНСМИТТЕРЫ ТЕМПЕРАТУРЫ

## HMM 100

# ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

# HMM100 Humidity Module for Environmental



*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 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 °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 | 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 ... 35 VDC or 14 ... 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 |

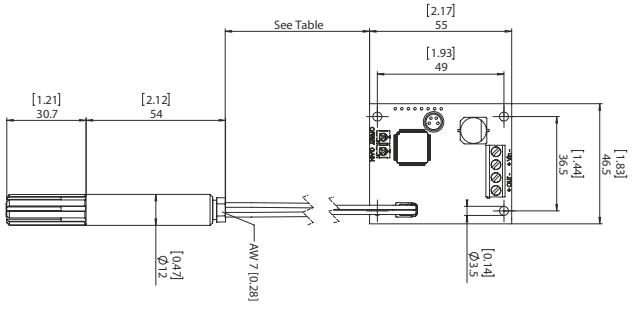
## Mechanics

| | |
|---|---|
| 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



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