



HMM105 Digital Humidity Module

For OEM applications



Features

- Digital I²C communication interface available
- Full temperature compensation over the operating temperature range of -40 °C ... +180 °C
- High temperature tolerance, suitable for heat sterilization up to +200 °C
- Vaisala HUMICAP® 180R sensor
- Detachable probe assembly
- Probe head with M10x1 threads
- Applications: test chambers, incubators

Vaisala HUMICAP® Digital Humidity Module HMM105 is an open frame module for integration into environmental chambers. The modules provide an I²C output for relative humidity (RH) or dew point (T_d).

Benefits

- Easy installation
- Excellent measurement accuracy
- Maintenance-free

The module consists of a detachable probe assembly – a probe head with M10x1 threads and a flex cable – and the module circuit board. The probe assembly is 30 cm in length. The module incorporates the Vaisala HUMICAP® 180R sensor which ensures excellent measurement accuracy.

Reliable for OEM's

The HMM105 probe head works in freezing conditions (-40 °C) and also in temperatures up to +180 °C in continuous use. In short term use, the probe head can be exposed to temperatures up to +200 °C. HMM105 is intended for OEM chamber manufacturers for integration into test chambers and incubators.

Maintenance-free

Compared to psychrometers, HMM105 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.

I²C interface for better usability

HMM105 has an I²C interface for communicating with the incubator's controller. HMM105 implements I²C slave functionality, with the incubator's controller acting as the master. The interface can be used to read measurement values and status information, set operation parameters, and make adjustments.



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Technical Data

Relative Humidity

Measurement range	0 ... 100 %RH
Factory calibration uncertainty (+20 °C)	±1.5 %RH
Humidity sensor	Vaisala HUMICAP® 180R
Accuracy (incl. Non-Linearity, Hysteresis and Repeatability)	
Temperature	-20 ... +40 °C
0 ... 90 %RH	±2 %RH
90 ... 100 %RH	±3 %RH
Temperature	-40 ... -20 °C, +40 ... +180 °C
0 ... 90 %RH	±2.5 %RH
90 ... 100 %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 (Ambient temperature - dew point)	±2 °C T _d

Operating Environment

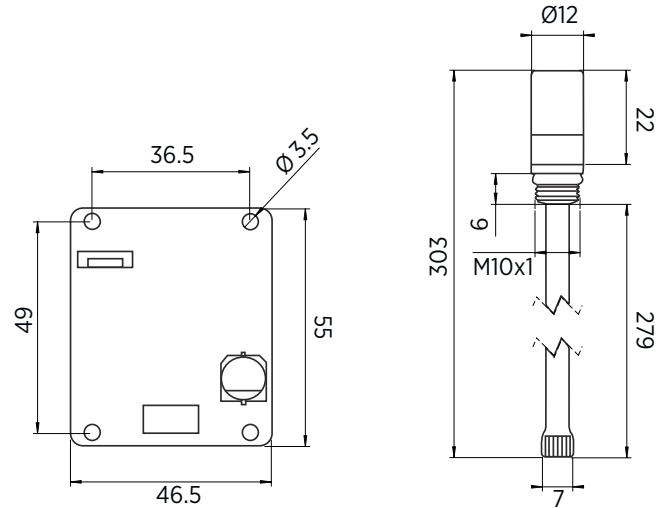
EMC compliance	Applicable parts of EN61326-1, Industrial Environment
Storage temperature	-40 ... +75 °C (-40 ... +167 °F)
Operating Temperature	
Component board	-5 ... +55 °C (+23 ... +131 °F)
Probe (continuous use)	-40 ... +180 °C (-40 ... +356 °F)
Probe (short term peak)	+200 °C (+392 °F)
Plastic grid, membrane filter	-20 ... +80 °C (-4 ... +176 °F)
PTFE sintered filters, stainless steel sintered filter	-40 ... +200 °C (-40 ... +392 °F)

Inputs and Outputs

Supply voltage	10 ... 35 VDC, 24 VAC (±20 %)
Output voltage	I ² C 5 V
Power consumption (DC/AC)	< 15/25 mA
Connector for supply voltage and I ² C bus	Molex 87832-1007, 10-pin header bus

Mechanical Specifications

Probe diameter	12 mm
Probe flex cable length	0.3 m
Probe lead-through material	PPS plastic



Dimensions in millimeters

Spare Parts and Accessories

Humidity sensor	HUMICAP® 180R
Short PTFE sintered filter	DRW239993SP
Plastic grid filter	6221
Plastic grid and membrane filter	10159HM
PTFE sintered filter	219452SP
Stainless steel sintered filter	HM47280SP
0.6 m cable with Molex milli-grid connectors	ASM210962SP



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