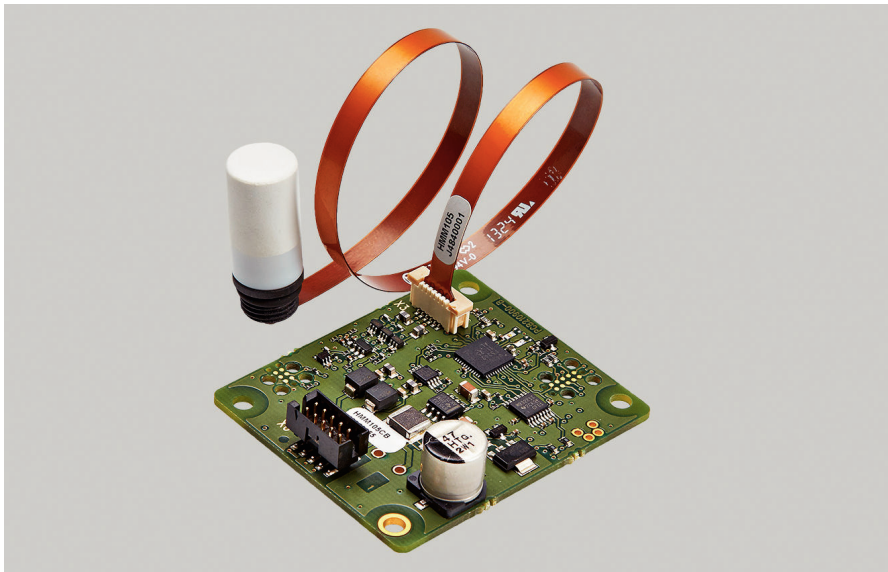




HMM105 Digital Humidity Module

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.

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

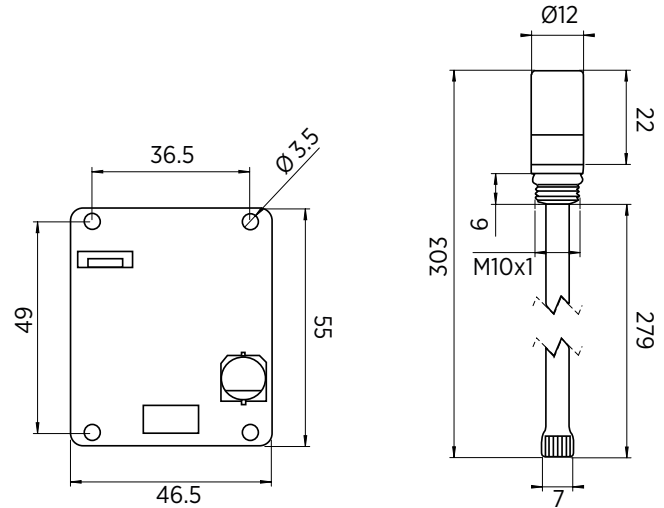
EMC compliance	Applicable parts of EN61326-1, Industrial Environment
Storage temperature	-40 ... +75 °C (-40 ... +167 °F)
Operating Temperature	
Component board	-5 ... +55 °C (+23 ... +131 °F)
Probe (continuous use)	-40 ... +180 °C (-40 ... +356 °F)
Probe (short term peak)	+200 °C (+392 °F)
Plastic grid, 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

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

