



Features

- Fast thermal response time
- Low power consumption
- Start-up time < 2 s
- Measurement range:
0 ... 100 %RH; -40 ... +60 °C
(-40 ... +140 °F)
- Detachable cable with standard 4-pin M8 connector
- Plastic enclosure with IP54 classification
- Proven Vaisala HUMICAP® 180R sensor for excellent stability
- Optional RS-485 digital output supports Modbus® RTU
- Optional dew point, wet bulb temperature, absolute humidity, mixing ratio, and enthalpy output
- Comes with calibration certificate: ±1.5 %RH measurement accuracy (0 ... 90 %RH)

Vaisala HUMICAP® Humidity and Temperature Probe HMP113 is a highly accurate and cost-effective humidity probe with plastic enclosure. It is designed for indoor environments, integration into other manufacturers' equipment, or use with Vaisala HUMICAP® Handheld Humidity and Temperature Meter HM40.

Easy installation

The compact probe fits into tight spaces. The cable has a threaded M8 connector for easy installation. Different cable lengths and a selection of accessories are available.

Low power consumption

HMP113 is suitable for battery powered applications due to its very low power consumption. It also has an extremely fast start-up time.

Several outputs

Temperature measurement is a standard feature in HMP113, with dew point temperature, wet bulb temperature, absolute humidity, mixing ratio, and

enthalpy as optional calculated parameters. Four voltage output ranges are available. An optional RS-485 output with Modbus support is also available.

High performance

HMP113 has a PC/ABS plastic enclosure and is suitable for noncondensing environments with fast temperature changes and a need for high-accuracy measurements with traceability. HMP113 also has a high chemical tolerance thanks to the proven Vaisala HUMICAP® 180R sensor.

Variety of calibration options

A quick field calibration can easily be carried out using a handheld meter, for example Vaisala Handheld Meter HM40. Alternatively, the probe can be calibrated using a PC with USB cable or sent to a Vaisala Service Center.

Technical data

Measurement performance

Relative humidity

Measurement range	0 ... 100 %RH
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Accuracy (incl. non-linearity, hysteresis, and repeatability):

at 0 ... +40 °C (+32 ... +104 °F)	±1.5 %RH (0 ... 90 %RH) ±2.5 %RH (90 ... 100 %RH)
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at -40 ... 0 °C (-40 ... +32 °F) and +40 ... +60 °C (+104 ... +140 °F)	±3.0 %RH (0 ... 90 %RH) ±4.0 %RH (90 ... 100 %RH)
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Factory calibration uncertainty at +20 °C (+68 °F):	±1.1 %RH (0 ... 90 %RH) ±1.8 %RH (90 ... 100 %RH)
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Humidity sensor	HUMICAP® 180R
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Stability	±2 %RH over 2 years
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Temperature

Measurement range	-40 ... +60 °C (-40 ... +140 °F)
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Accuracy:

at 0 ... +40 °C (+32 ... +104 °F)	±0.2 °C (±0.36 °F)
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at -40 ... 0 °C (-40 ... +32 °F) and +40 ... +60 °C (+104 ... +140 °F)	±0.4 °C (±0.72 °F)
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Temperature sensor	Pt1000 RTD Class F0.1 IEC 60751
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Analog outputs

Accuracy at +20 °C (+68 °F)	±0.2 % of FS
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Temperature dependence	±0.01 % of FS/°C (±0.006 % of FS/°F)
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Operating environment

Operating temperature	-40 ... +60 °C (-40 ... +140 °F)
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EMC compliance	EN 61326-1, basic immunity test requirements
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Inputs and outputs

Power consumption	1 mA average, max. peak 5 mA
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Operating voltage ¹⁾

With 1 V / 2.5 V output	5 ... 28 VDC
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With 5 V output	8 ... 28 VDC
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With loop power converter	8 ... 28 VDC
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With digital output	5 ... 28 VDC
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Start-up time

Probes with analog output	4 s at operating voltage 13.5 ... 16.5 VDC 2 s at other valid operating voltages
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Probes with digital output	1 s
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Outputs

2 channels	0 ... 1 VDC / 0 ... 2.5 VDC / 0 ... 5 VDC / 1 ... 5 VDC
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1-channel loop-power converter (separate module, compatible with humidity accuracy only)	4 ... 20 mA
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Digital output (optional)	RS-485 2-wire half duplex, supports Modbus RTU
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External loads

0 ... 1 V	R _L min 10 kΩ
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0 ... 2.5 V / 0 ... 5 V	R _L min 50 kΩ
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Output parameters

Relative humidity, temperature, dew point temperature, wet bulb temperature, absolute humidity, mixing ratio, enthalpy

¹⁾ Use lowest available operating voltage to minimize heating.

Mechanical specifications

IP rating	IP54 ¹⁾
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Cable connector	4-pin M8 (IEC 60947-5-2)
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Materials

Body	PC/ABS blend
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Grid filter	PC (glass reinforced)
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Cable	Polyurethane or FEP
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Weight

Probe	9 g (0.3 oz)
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Probe with 0.3 m (1 ft) cable	20 (0.7 oz)
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¹⁾ Not applicable with the plastic grid filter.

Spare parts and accessories

Sensors

Vaisala HUMICAP® 180R	HUMICAP180R
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Vaisala HUMICAP® 180V	HUMICAP180V
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Sensor protection

Plastic grid filter	DRW240185SP
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Plastic grid with membrane filter	ASM210856SP
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Stainless steel sintered filter	HM47280SP
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Porous PTFE filter	219452SP
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Probe installation

Probe mounting clamp set, 10 pcs	226067
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Probe mounting flange	226061
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Probe holder, 5 pcs	ASM213382SP
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Plastic locking bushing (3 pcs) for attaching probe to HM40	DRW238590SP
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Connection adapters ¹⁾

4 ... 20 mA loop power converter	UI-CONVERTER-1CB
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Mounting bracket for converter	225979
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USB cable for PC connection	219690
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Connection cable for HM70	219980SP
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Connection cables with open wires

+60 °C 0.3 m (+140 °F 1 ft)	HMP50Z032SP
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+60 °C 1.2 m (+140 °F 4 ft)	HMP50Z120
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+60 °C 3 m (+140 °F 9.8 ft)	HMP50Z300SP
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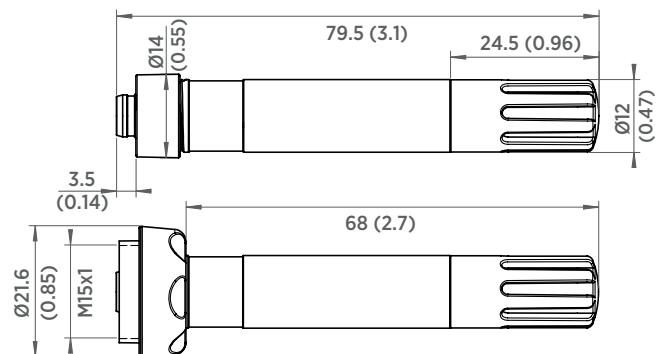
+80 °C 1.5 m (+176 °F 5 ft)	225777SP
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+80 °C 3 m (+176 °F 10 ft)	225229SP
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+180 °C 1.5 m (+356 °F 5 ft) FEP	238025
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+180 °C 3 m (+356 °F 10 ft) FEP	226902SP
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¹⁾ No separate adapter is needed for HM40 compatibility.



Dimensions in mm (inches)

