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# Vaisala HUMICAP® Humidity and Temperature Probe HMP113

*The HMP113 has excellent reliability and high chemical tolerance.*

## Features/Benefits

- Fast thermal response time
- Low power consumption
- Start-up time < 2 s
- Measurement range: 0 ... 100 %RH; -40 ... +60°C
- Detachable cable with standard 4-pin M8 connector
- Plastic enclosure with IP54 classification
- Proven Vaisala HUMICAP® 180R sensor for excellent stability
- Optional RS485 digital output
- Optional dew point calculation
- Traceable: comes with calibration certificate. ±1.5%RH measurement accuracy (0 ... 90%RH)

The 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® Hand-Held 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

The 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

There are two voltage outputs for relative humidity and temperature or dew point measurement. An optional RS485 output is also available.

## High Performance

The HMP113 has a PC/ABS plastic enclosure and is suitable for non-condensing environments with fast temperature changes and a need for high accuracy measurements with traceability. The 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 hand-held meter, for example Vaisala Hand-Held Meter HM40. Alternatively, the probe can be calibrated using a PC with USB cable or sent to a Vaisala Service Center.

# Technical Data

## Performance

| | |
|---|---|
| RELATIVE HUMIDITY | |
| Measurement range | 0 ... 100 %RH |
| Accuracy (incl. non-linearity, hysteresis and repeatability) | |
| temperature range | 0 ... +40 °C |
| 0 ... 90 %RH | ±1.5 %RH |
| 90 ... 100 %RH | ±2.5 %RH |
| temperature range | -40 ... 0 °C, +40 ... +60 °C |
| 0 ... 90 %RH | ±3.0 %RH |
| 90 ... 100 %RH | ±4.0 %RH |
| Factory calibration uncertainty (+20 °C) | ± 1.5 %RH |
| Humidity sensor | Vaisala HUMICAP® 180R |
| Stability | ±2 %RH over 2 years |
| TEMPERATURE | |
| Measurement range | -40 ... +60 °C |
| Accuracy over temperature range | |
| 0 ... +40 °C, | ±0.2 °C |
| -40 ... 0 °C, +40 ... +60 °C | ±0.4 °C |
| Temperature sensor | Pt1000 RTD Class F0.1 IEC 60751 |
| DEW POINT | |
| Measurement range | -40 ... +60 °C |
| Accuracy (incl. non-linearity, hysteresis and repeatability) | |
| temperature range | 0 ... +40 °C |
| when dew point depression < 15 °C | ±1 °C |
| when dew point depression 15 ... 25 °C | ±2 °C |
| temperature range | -40 ... 0 °C, +40 ... +60 °C |
| when dew point depression < 15 °C - dew point | ±2 °C |
| depression = ambient temperature - dew point | |
| ANALOG OUTPUTS | |
| Accuracy at 20 °C | ±0.2 % of FS |
| Temperature dependence | ±0.01 % of FS/°C |

## Inputs and Outputs

| | |
|---|---|
| Operating voltage | 5 ... 28 VDC / 8 ... 28 VDC with |
| (Use lowest available operating | 5 V output |
| voltage to minimize heating) | 8 ... 28 VDC with loop power converter |
| Current consumption | 1 mA average, max. peak 5 mA |
| Start-up time | |
| probes with analog output | 4 s at operating voltage 13.5 ... 16.5 VDC |
| | 2 s at other valid operating voltages |
| probes with digital output | 1 s |
| Outputs | |
| 2 channels | 0 ... 1 VDC / 0 ... 2.5 VDC / 0 ... 5 VDC / 1 ... 5 VDC |
| 1-channel loop-power converter (separate module, compatible with humidity accuracy only) | 4 ... 20 mA |
| digital output (optional) | RS485 2-wire half duplex |
| External loads | |
| 0 ... 1 V | $R_L$ min 10 kΩ |
| 0 ... 2.5 V /0 ... 5 V | $R_L$ min 50 kΩ |

## Operating Environment

| | |
|---|---|
| Operating temperature range | -40 ... +60 °C |
| Electromagnetic compatibility | EN 61326-1: Electrical equipment for measurement, control and laboratory use – EMC requirements – basic immunity test requirements. |

## Mechanics

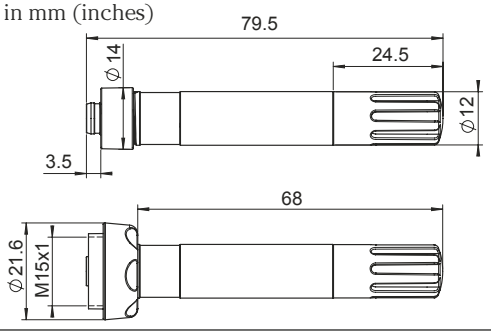
| | |
|---|---|
| Materials | |
| body | PC/ABS blend |
| grid filter | PC (glass reinforced) |
| cable | polyurethane or FEP |
| Housing classification | IP54 |
| Cable connector | 4-pin M8 (IEC 60947-5-2) |
| Weight | |
| probe | 9 g |
| probe with 0.3 m cable | 20 g |

## Options and Accessories

| | |
|---|---|
| Sensor protection | |
| plastic grid for use with HM40 | DRW236214SP |
| membrane filter | 230727SP |
| stainless steel sintered filter | HM47280SP |
| porous PTFE filter | 219452SP |
| 4 ... 20 mA loop power converter | UI-CONVERTER-1CB |
| Mounting bracket for converter | 225979 |
| USB cable for PC connection | 219690 |
| Probe mounting clamp set, 10 pcs | 226067 |
| Probe mounting flange | 226061 |
| Connection cables | |
| standard 0.3 m | HMP50Z032SP |
| standard 3 m | HMP50Z300SP |
| 80 °C 1.5 m | 225777SP |
| 80 °C 3 m | 225229SP |
| 180 °C 3 m FEP | 226902SP |

## Dimensions

Dimensions in mm (inches)

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