

Vaisala HUMICAP® Humidity and Temperature Probe HMP113



The HMP113 has excellent reliability and high chemical tolerance.

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 with Modbus support is also available.

High Performance

The HMP113 has a PC/ABS plastic enclosure and is suitable for non-condensing environments with fast

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)

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.

上海博众测量技术有限公司

Bodhi (Shanghai) measurement technology Co.,Ltd.
NO.32,ShuPing Road, Jiading District, ZIP201808,
Shanghai R.P.China
TEL: 0086 21 6630 8161/62/63
FAX: 0086 21 6630 8167

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)

0 ... 90 %RH ±1.1 %RH

90 ... 100 %RH ±1.8 %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

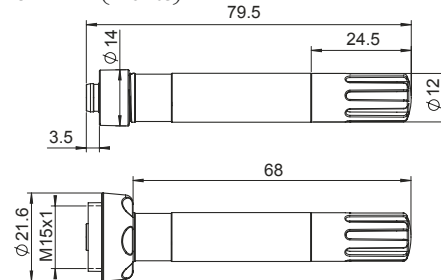
225229SP

180 °C 3 m FEP

226902SP

Dimensions

Dimensions in mm (inches)



VAISALA

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