Vaisala HUMICAP® Humidity and Temperature Probe HMP110

The HMP110 with excellent stability and high chemical tolerance.

Features/Benefits

- Miniature-size humidity transmitter
- Low power consumption and fast startup for battery powered applications
- Measurement range: 0 ... 100 %RH; -40 ... +80°C
- Cable detachable with standard M8 quick connector
- Reliable: Latest generation HUMICAP® 180R sensor for best stability and high chemical tolerance. IP65 metal housing.
- Optional RS485 digital output
- Traceable: Comes with calibration certificate. ±1.7%RH measurement accuracy (0 ... 90%RH)
- HMP110R replacement probe service available for easy maintenance
- Optional dew point calculation

HMP110

The HMP110 is a trouble-free and cost-effective humidity transmitter with high accuracy and good stability. It is suitable for volume applications or integration into other manufacturers' equipment. The HMP110 is also suitable for glove boxes, greenhouses, fermentation and stability chambers, data loggers, and incubators.

Easy installation

The probe cable has a screw-on quick connector for easy installation. Different cable lengths and accessories are available.

Low current consumption

HMP110 is suitable for battery-powered applications because of its very low current consumption. It also has a fast start-up time.

Several outputs

The temperature measurement is a standard feature, dew point measurement is optional. Three standard voltage outputs are available.

Robust design

The aluminum body of the HMP110 is classified as IP65. Thus, it survives rough conditions. The HMP110 has high chemical tolerance because of the HUMICAP® 180R sensor.

Easy maintenance

Maintaining measurement traceability is easy using the HMP110R replacement probe. We send you a replacement probe, you detach the old probe and send it back to us. In this way the measurement is available at all times without interruptions.

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	±1.7 %RH
90 ... 100 %RH	±2.5 %RH
temperature range	-40 ... 0 °C, +40 ... +80 °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 ... +80 °C
Accuracy over temperature range	
0 ... +40 °C,	±0.2 °C
-40 ... 0 °C, +40 ... +80 °C	±0.4 °C
Temperature sensor	Pt1000 RTD 1/3, Class B IEC 751

DEW POINT

Measurement range	-40 ... +80 °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 ... +80 °C
when dew point depression < 15 °C - dew point	±2 °C
depression = ambient temperature - dew point	

Operating environment

Measurement range	-40 ... +80 °C
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Basic immunity test requirements

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 at operating voltage	<14 V: 1 s
	>14 V: 4 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

Mechanics

Materials	
body	chrome coated aluminum
grid filter	chrome coated ABS plastic
cable	polyurethane or FEP
Housing classification	IP65
Body thread	MI2x1 / 10 mm
Cable connector	4-pin M8 (IEC 60947-5-2)
Weight with 0.3 m cable	23 g

Options and accessories

Sensor protection	
plastic grid	DRW010522
membrane filter	DRW010525
stainless steel sintered filter	HM46670SP
4 ... 20 mA loop power converter	UI-CONVERTER-1
Mounting bracket with lid	225979
Plastic M12 installation nuts, pair	18350SP
USB cable for PC connection	219690
Probe mounting clamp set, 10 pcs	226067
Probe mounting flange	226061
Connection cables	
standard 0.3 m	HMP50Z032
standard 3 m	HMP50Z30A
80 °C 1.5 m	225777SP
80 °C 3 m	225229SP
180 °C 3 m FEP	226902