INTERCAP® Humidity and Temperature Probe HMP60

Features

- Miniature-size humidity probe
- Low power consumption
- Measurement range: 0 ... 100 %RH; −40 ... +60 °C (−40 ... +140 °F)
- Cable detachable with standard M8 connector
- Rugged metal housing
- Interchangeable Vaisala INTERCAP® sensor
- Optional RS-485 digital output supports Modbus® RTU
- Optional dew point, wet bulb temperature, absolute humidity, mixing ratio, and enthalpy output

HMP60 is a simple, durable and cost-effective humidity probe. It is suitable for volume applications, integration into other manufacturers' equipment, incubators, glove boxes, greenhouses, fermentation chambers, and data loggers.

Easy installation

The probe cable has a screw-on quick connector for easy installation. Different cable lengths are available. Also other compatible M8 series cables can be used. Accessories are available for different installation needs.

Low current consumption

HMP60 is suitable for battery-powered applications because of its very low current consumption.

Several outputs

Temperature measurement is a standard feature in HMP60, 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.

Rugged design

HMP60 is designed for extreme conditions. The stainless steel body of HMP60 is classified as IP65. The probe has a sealed structure and the sensor is protected by a membrane filter and a plastic grid, or optionally by a stainless steel filter.

Recalibration not needed

The Vaisala INTERCAP® sensor is interchangeable. No recalibration is required; the sensor can simply be replaced, also in the field.

Technical data

Measurement performance

Relative humidity	
Measurement range	0 ... 100 %RH
Typical accuracy:	
at 0 ... +40 °C (+32 ... +140 °F)	±3 %RH (0 ... 90 %RH) ±5 %RH (90 ... 100 %RH)
at −40 ... 0 °C and +40 ... +60 °C (−40 ... +32 °F and +104 ... +140 °F)	±5 %RH (0 ... 90 %RH) ±7 %RH (90 ... 100 %RH)
Humidity sensor	Vaisala INTERCAP®
Temperature	
Measurement range	−40 ... +60 °C (−40 ... +140 °F)
Accuracy:	
at +10 ... +30 °C (+50 ... +86 °F) at −40 ... +10 and +30 ... +60 °C (−40 ... +50 and +86 ... +140 °F)	±0.5 °C (±32.9 °F) ±0.6 °C (±33.08 °F)
Analog outputs	
Accuracy at +20 °C (+68 °F)	±0.2 % of FS
Temperature dependence	±0.01 % of FS/°C (±0.006 % of FS/°F)

Operating environment

Operating temperature	−40 ... +60 °C (−40 ... +140 °F)
EMC compliance	EN 61326-1, industrial environment

Inputs and outputs

Power consumption	1 mA average, max. peak 5 mA
Operating voltage [1]	
With 1 V / 2.5 V output	5 ... 28 VDC
With 5 V output	8 ... 28 VDC
With loop power converter	8 ... 28 VDC
With digital output	5 ... 28 VDC
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)	RS-485 2-wire half duplex, supports Modbus RTU
External loads	
0 ... 1 V	R_L min. 10 kΩ
0 ... 2.5 V /0 ... 5 V	R_L min. 50 kΩ
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

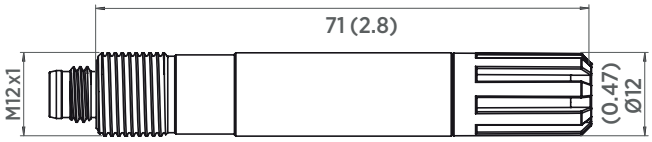
IP rating	IP65 [1]
Body thread	M12x1 / 10 mm (0.4 in)
Cable connector	4-pin M8 (IEC 60947-5-2)
Materials	
Body	Stainless steel (AISI 316)
Grid filter	Chrome coated ABS plastic
Cable	Polyurethane or FEP
Weight	
Probe	17 g (0.6 oz)
Probe with 0.3 m (1 ft) cable	28 g (1 oz)

1) Applicable with stainless steel sintered filter and PTFE sintered filter only.

Spare parts and accessories

Sensors	
Vaisala INTERCAP® sensor, 1 pc	15778HM
Vaisala INTERCAP® sensor, 10 pcs	INTERCAPSET-10PCS
Sensor protection	
Plastic grid filter	DRW010522SP
Membrane filter	DRW010525SP
Stainless steel sintered filter	HM46670SP
PTFE membrane filter with stainless steel grid	ASM212652SP
PTFE sintered filter	DRW244938SP
Probe installation	
Probe mounting clamp set, 10 pcs	226067
Probe mounting flange	226061
Probe holder, 5 pcs	ASM213382SP
Plastic M12 installation nuts, pair	18350SP
Flat extension cable 1 m (3 ft) [1]	CBL210649SP
Connection adapters	
4 ... 20 mA loop power converter	UI-CONVERTER-1CB
Mounting bracket for converter	225979
USB cable for PC connection	219690
Connection cable for MI70 indicator	219980SP
Connection cables with open wires	
+60 °C 0.3 m (+140 °F 1 ft)	HMP50Z032SP
+60 °C 1.2 m (+140 °F 4 ft)	HMP50Z120
+60 °C 3 m (+140 °F 9.8 ft)	HMP50Z300SP
+80 °C 1.5 m (+176 °F 5 ft)	225777SP
+80 °C 3 m (+176 °F 10 ft)	225229SP
+180 °C 1.5 m (+356 °F 5 ft) FEP	238025
+180 °C 3 m (+356 °F 10 ft) FEP	226902SP

1) Connection cable 219980SP is also needed if this cable is used with MI70 indicator.



Dimensions in mm (inches)

VAISALA

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