



## INTERCAP® Humidity and Temperature Probe HMP60



### Features

- Miniature-size humidity probe
- Low power consumption
- Measurement range: 0 ... 100 %RH; -40 ... +60 °C
- Cable detachable with standard M8 connector
- Rugged metal housing
- Interchangeable Vaisala INTERCAP® Sensor
- Optional RS-485 digital output supports Modbus RTU
- Optional dew point 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

There are two configurable voltage outputs with relative humidity, temperature or dew point scaling. 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:	
Temperature range	0 ... +40 °C
0 ... 90 %RH	±3 %RH
90 ... 100 %RH	±5 %RH
Temperature range	-40 ... 0 °C, +40 ... +60 °C
0 ... 90 %RH	±5 %RH
90 ... 100 %RH	±7 %RH
Humidity sensor	Vaisala INTERCAP®

### Temperature

Measurement range	-40 ... +60 °C
Accuracy over Temperature Range:	
+10 ... +30 °C	±0.5 °C
-40 ... +10, +30 ... +60 °C	±0.6 °C

### Dew Point

Measurement range	-40 ... +60 °C
Typical Accuracy:	
Temperature range	0 ... +40 °C
When dew point depression <sup>1)</sup> < 15 °C	±2 °C
Temperature range	-40 ... 0 °C, +40 ... +60 °C
When dew point depression < 10 °C <sup>1)</sup>	±3 °C

### Analog Outputs

Accuracy at 20 °C	±0.2 % of FS
Temperature dependence	±0.01 % of FS/°C

<sup>1)</sup> Dew point depression = ambient temperature - dew point

## Operating Environment

Operating temperature	-40 ... +60 °C
EMC compliance	EN 61326-1, industrial environment

## Mechanical Specifications

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

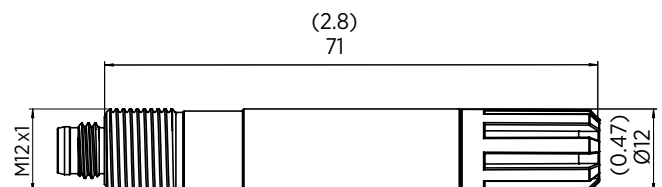
## Inputs and Outputs

Power consumption	1 mA average, max. peak 5 mA
<b>Operating Voltage<sup>1)</sup></b>	
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 ... 20 VDC
<b>Start-Up Time</b>	
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
<b>Outputs</b>	
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
<b>External Loads</b>	
0 ... 1 V	R <sub>L</sub> min. 10 kΩ
0 ... 2.5 V / 0 ... 5 V	R <sub>L</sub> min. 50 kΩ

<sup>1)</sup> (Use Lowest Available Operating Voltage to Minimize Heating)

## Spare Parts and Accessories

Vaisala INTERCAP® Sensor, 1 piece	15778HM
Vaisala INTERCAP® Sensor, 10 pcs	INTERCAPSET-10PCS
4 ... 20mA loop power converter	UI-CONVERTER-1CB
Mounting bracket for converter	225979
Plastic M12 installation nuts, pair	18350SP
USB cable for PC connection	219690
Probe mounting clamp set, 10 pcs	226067
Probe mounting flange	226061
<b>Sensor Protection</b>	
Plastic grid	DRW010522
Membrane filter	DRW010525
Stainless steel sintered filter	HM46670SP
PTFE sintered filter	DRW244938SP
<b>Connection Cables</b>	
0.3 m PU	HMP50Z032SP
3 m PU	HMP50Z300SP
180 °C 3 m FEP	226902SP



Dimensions in mm (inches)



Published by Vaisala | B210851EN-F © Vaisala 2017

All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. Any reproduction, transfer, distribution or storage of information contained in this document is strictly prohibited. All specifications — technical included — are subject to change without notice.



www.vaisala.com