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.

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.

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

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

<table>
<thead>
<tr>
<th>Relative Humidity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>0 ... 100 %RH</td>
</tr>
<tr>
<td>Typical Accuracy:</td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td></td>
</tr>
<tr>
<td>0 ... 90 %RH</td>
<td>±3 %RH</td>
</tr>
<tr>
<td>90 ... 100 %RH</td>
<td>±5 %RH</td>
</tr>
<tr>
<td>Temperature range</td>
<td></td>
</tr>
<tr>
<td>-40 ... 0 °C, +40 ... +60 °C</td>
<td>±3 %RH</td>
</tr>
<tr>
<td>90 ... 100 %RH</td>
<td>±7 %RH</td>
</tr>
<tr>
<td>Humidity sensor</td>
<td>Vaisala INTERCAP®</td>
</tr>
</tbody>
</table>

**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: ±2 °C
  - Temperature range: -40 ... 0 °C, +40 ... +60 °C: ±3 °C
- Analog Outputs
  - Accuracy at 20 °C: ±0.2 % of FS
  - Temperature dependence: ±0.01 % of FS/°C

### Inputs and Outputs

**Power consumption**

- 1 mA average, max. peak 5 mA

**Operating Voltage**

- 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

**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

### Operating Environment

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

### Mechanical Specifications

<table>
<thead>
<tr>
<th>IP rating</th>
<th>IP65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body thread</td>
<td>M12x1 / 10 mm</td>
</tr>
<tr>
<td>Cable connector</td>
<td>4-pin M8 (IEC 60947-5-2)</td>
</tr>
</tbody>
</table>

**Materials**

- **Body**: Stainless steel (AISI 316)
- **Grid filter**: Chrome coated ABS plastic
- **Cable**: Polyurethane or FEP

**Weight**

- **Probe**: 17 g
- **Probe with 0.3 m cable**: 28 g

### 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
- **Sensor Protection**
  - Plastic grid: DRW010522
  - Membrane filter: DRW010525
  - Stainless steel sintered filter: HM46670SP
  - PTFE sintered filter: DRW244938SP
- **Connection Cables**
  - 0.3 m PU: HMP50232SP
  - 3 m PU: HMP502300SP
  - 180 °C 3 m FEP: 226902SP

### Dimensions in mm (inches)

- (2.8) 71
- (0.47) M12 x1

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