The Vaisala HUMICAP® Humidity Indicator HMI41 fitted with the Vaisala HUMICAP® Humidity and Temperature Probes HMP42 or HMP46 can be used for spot checking and field calibration applications.

In addition to displaying the humidity and temperature readings, the HMI41 indicator calculates dew point and wet bulb temperature, absolute humidity and mixing ratio.

The indicator has an easy-to-read two line liquid crystal display. The display units (metric or non-metric) are easily selected.

These features, plus fast response time, high measurement accuracy and excellent stability, as well as the unique properties of the probe chosen – either the HMP42 or the HMP46 – make the HMI41 indicator and HMP42/46 combination an ideal choice for the most demanding applications.

### Features/Benefits
- RH measurement range 0 ... 100 %RH
- Temperature measurement range -40 ... +100 °C (-40 ... +212 °F), with the HMP46 only for short periods up to +180 °C (+356 °F)
- Calculates dew point, wet bulb temperature, absolute humidity and mixing ratio
- Versatile and easy-to-use
- Incorporates Vaisala HUMICAP® Sensor
- Excellent stability
- Data collection with serial line
- NIST traceable (certificate included)
- Optional carrying case and calibration cable

### Vaisala HUMICAP® Humidity and Temperature Probe HMP42
The HMP42 probe can be used for spot checking humidity and temperature in applications which require an extremely thin probe. Typically the probe is used for monitoring the drying of structures during construction or after water damage. It is ideal to be used when measuring in any tight places, in ducts or chambers or, for example, under a linoleum floor.

The probe diameter is only 4 mm, allowing access into very small, tight, and hard-to-reach spaces.

### Vaisala HUMICAP® Humidity and Temperature Probe HMP46
Typical applications for the HMP46 are plant maintenance, installation and inspection of air conditioning systems, production and storage areas and production processes. The HMP46 operates in full humidity range of 0 ... 100 %RH. The temperature range is from -40 to +100 °C (-40 ... +212 °F).

For short periods of time, the probe can withstand temperatures up to +180 °C (+356 °F).

The HMP46 probe is solid and rugged. Its stainless steel probe is made to withstand rough handling in mechanically demanding applications. The probe’s long shaft can also reach otherwise unreachable places.

### High Performance Sensor
The HMP42/46 probes incorporate Vaisala HUMICAP® Sensor. This sensor has high accuracy, excellent long-term stability and negligible hysteresis. In addition, the sensor is insensitive to dust, particulate dirt and most chemicals.

The Vaisala HUMICAP® Humidity Indicator HMI41 equipped with the Vaisala HUMICAP® Humidity and Temperature Probe HMP42 – an extremely thin probe allowing access into very small, tight, hard-to-reach spaces.

The Vaisala HUMICAP® Humidity Indicator HMI41 equipped with the Vaisala HUMICAP® Humidity and Temperature Probe HMP46 – a rugged stainless steel probe for mechanically demanding and high temperature applications.
Technical Data

**HMI41 Indicator**

- **Calculated variables**: dew point temperature, absolute humidity, wet bulb temperature, mixing ratio
- **Resolution**: 0.1 %RH; 0.1 °C/°F
- **Power supply**: 4 batteries, type AA (LR 6)
- **Battery operation time**:
  - (alkaline batteries): 72 h continuous use
- **Auto-off function**:
- **Operating temperature**: -20 ... +60 °C (-4 ... +140 °F)
- **Storage temperature**: -40 ... +70 °C (-40 ... +158 °F)
- **Display**: two line LCD
- **Housing material**: ABS plastic
- **Housing classification**: IP53 (with connectors blocked)
- **Weight (incl. batteries)**: 300 g
- **Maximum measurement error of indicator at +20 °C**:
  - humidity ±0.1 %RH
  - temperature ±0.1 °C (±0.18 °F)

**HMP42 Probe**

- **Humidity**
  - **Measurement range**: 0 ... 100 %RH
  - **Accuracy (incl. non-linearity, hysteresis and repeatability)** at +20 °C (+68 °F):
    - 0 ... 90 %RH ±2 %RH
    - 90 ... 100 %RH ±3 %RH
  - **Factory calibration uncertainty (+20 °C / +68 °F)**:
    - 0 ... 15 %RH ±1 %RH
    - 15 ... 78 %RH ±1.5 %RH
  - **Temperature dependence of electronics**: ±0.05 %RH/°C
  - **Typical long-term stability**: better than 1 %RH per year
  - **Response time (90%)** at +20 °C in still air w/sintered filter: 30 s

- **Temperature**
  - **Continuous measurement**: -40 ... +100 °C (-40 ... +212 °F)
  - **Short-term measurement**: -40 ... +180 °C (-40 ... +356 °F)
  - **Temperature accuracy at +20 °C (+68 °F)**: ±0.2 °C (±0.36 °F)

**HMP46 Probe**

- **Humidity**
  - **Measurement range**: 0 ... 100 %RH, non-condensing
  - **Accuracy (incl. non-linearity, hysteresis and repeatability)** at +20 °C (+68 °F):
    - 0 ... 90 %RH ±1 %RH
    - 90 ... 100 %RH ±1.5 %RH
  - **Factory calibration uncertainty (+20 °C / +68 °F)**:
    - 0 ... 15 %RH ±1 %RH
    - 15 ... 78 %RH ±1.5 %RH
  - **Temperature Dependence**
  - **Typical long-term stability**: better than 1 %RH per year
  - **Response time (90%)** at +20 °C in still air w/sintered filter: 15 s

**Temperature**

- **Continuous measurement**: -40 ... +100 °C (-40 ... +212 °F)
- **Short-term measurement**: -40 ... +180 °C (-40 ... +356 °F)
- **Temperature accuracy at +20 °C (+68 °F)**: ±0.2 °C (±0.36 °F)

- **Temperature sensor**
  - **HMP42**: Pt100 RTD Class F0.3 IEC 60751
  - **HMI41 Indicator**: Pt100 RTD Class F0.1 IEC 60751
## Technical Data

### General for Probes

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable length</td>
<td>1500 mm; extended spiral cable</td>
</tr>
<tr>
<td>Operating temperature range for electronics</td>
<td>-20 ... +60 °C (-4 ... +140 °F)</td>
</tr>
<tr>
<td>Housing material</td>
<td></td>
</tr>
<tr>
<td>electronics housing</td>
<td>ABS plastic</td>
</tr>
<tr>
<td>probe</td>
<td>stainless steel</td>
</tr>
<tr>
<td>Housing classification</td>
<td></td>
</tr>
<tr>
<td>electronics</td>
<td>IP65 (NEMA 4)</td>
</tr>
<tr>
<td>HMP42 sensor protection</td>
<td></td>
</tr>
<tr>
<td>steel grid</td>
<td>19867HM</td>
</tr>
<tr>
<td>membrane, tube set (5 pcs)</td>
<td>19858HM</td>
</tr>
<tr>
<td>HMP46 sensor protection</td>
<td></td>
</tr>
<tr>
<td>sintered filter</td>
<td>0195</td>
</tr>
<tr>
<td>optional membrane filter, (max +80 °C / +176 °F)</td>
<td>10159HM</td>
</tr>
<tr>
<td>plastic grid, (max +80 °C / +176 °F)</td>
<td>6221</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>HMP42</td>
<td>200 g</td>
</tr>
<tr>
<td>HMP46</td>
<td>450 g</td>
</tr>
<tr>
<td>Electromagnetic compatibility</td>
<td>Complies with EMC standard EN61326-1, Portable Equipment.</td>
</tr>
</tbody>
</table>

### Accessories

- Transmitter calibration cables
  - HMT330, HMT120/130
  - HMT360
  - HMM210
  - HMD/W60/70
  - 25917ZZ
  - 25916ZZ
  - 19164ZZ
  - 19116ZZ
- Carrying case for HMI41 & HMP42/46
  - plastic
  - 210614
  - aluminum
  - MI70CASE2
- Serial communication cable
  - HMP42
  - 19446ZZ
- Calibration adapter
  - HMP42
  - HM37067
- Rubber sleeve set
  - 19809HM

### Dimensions

<table>
<thead>
<tr>
<th>Component</th>
<th>Dimensions in mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMI41</td>
<td></td>
</tr>
<tr>
<td>HMP42</td>
<td></td>
</tr>
<tr>
<td>HMP46</td>
<td></td>
</tr>
</tbody>
</table>

HUMICAP® is a registered trademark of Vaisala.

---

Please contact us at
www.vaisala.com/requestinfo

www.vaisala.com

Ref. BZII141EN-C ©Vaisala 2013

This material is subject to copyright protection, with all copyrights retained by Vaisala and its individual partners. All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. The reproduction, transfer, distribution or storage of information contained in this brochure in any form without the prior written consent of Vaisala is strictly prohibited. All specifications — technical included — are subject to change without notice.