

HMI41 Indicator and HMP46 High Temperature Probe



The Vaisala HUMICAP® Humidity Indicator HMI41 equipped with the Vaisala HUMICAP® Humidity and Temperature Probe HMP46 is an ideal combination for spot checking and field calibration.

The Vaisala HUMICAP® Humidity Indicator HMI41 fitted with the Vaisala HUMICAP® Humidity and Temperature Probe HMP46 can be used for spot checking humidity and temperature in ducts or chambers. Typical applications are plant maintenance, installation and inspection of air conditioning systems, production and storage areas and production processes. In addition, it is suitable for field checking Vaisala's humidity transmitters.

Withstands high temperatures

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.

Versatile and easy to use

In addition to displaying the humidity and temperature readings, the HMI41 indicator calculates dewpoint 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 wide temperature range of the probe, make the HMI41/HMP46 combination an ideal choice for the most demanding applications.

High performance sensor

The HMP46 probe incorporates 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.

Features/Benefits

- RH measurement range 0 ... 100 %RH
- Temperature measurement range $-40 \dots +100$ °C ($-40 \dots +212$ °F), for short periods up to +180 °C (+356 °F)
- Calculates dewpoint, wet bulb temperature, absolute humidity and mixing ratio
- Versatile and easy-to-use
- Incorporates Vaisala HUMICAP[®] Sensor
- Excellent stability
- Data collection with serial line download capability
- NIST traceable (certificate included)
- Optional carrying case and calibration cable
- Available as a complete calibration kit HMK41

HMI41&HMP46 HUMIDITY
DEWPOINT

Technical Data

HMI41 indicator

Calculated variables dewpoint temperature, absolute humidity, wet bulb temperature, mixing ratio Resolution 0.1 %RH; 0.1 °C/°F 4 batteries, type AA (LR 6) Power supply 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) Maximum measurement error of indicator at +20 °C humidity ±0.1 %RH temperature ±0.1 °C (±0.18 °F)

HMP46 probe

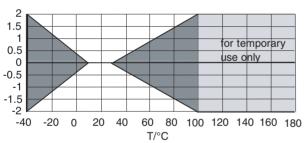
Humidity

Measurement range 0 ... 100 %RH, non-condensing Accuracy (incl. nonlinearity, hysteresis and repeatibility) at +20 °C Maximum achievable accuracy when calibrated against high quality, certified humidity standards:

0 ... 90 %RH \pm 1 %RH \pm 2 %RH When calibrated against salt solutions (ASTM E104-85)

Temperature Dependence

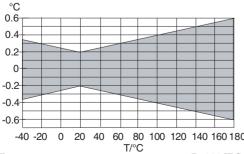
error %RH



Typical long-term stability better than 1 %RH per year Response time (90%) at $+20^{\circ}$ C in still air w/sintered filter Humidity sensor HUMICAP* 180

Temperature

Continuous measurement $-40 \dots +100 \,^{\circ}\text{C} \, (-40 \dots +212 \,^{\circ}\text{F})$ Short-term measurement $-40 \dots +180 \,^{\circ}\text{C} \, (-40 \dots +356 \,^{\circ}\text{F})$ Accuracy at $+20 \,^{\circ}\text{C} \, (+68 \,^{\circ}\text{F})$ $\pm 0.2 \,^{\circ}\text{C} \, (\pm 0.36 \,^{\circ}\text{F})$ Accuracy over the measurement range



Temperature sensor Pt 100 IEC 751 1/3 class B

General

Typical ranges of calculated variables

dewpoint temperature -20 ... +100 °C (-4 ... +100 °F) absolute humidity 0 ... 600 g/m³ wet bulb temperature 0 ... 100 °C (32 ... 212 °F) mixing ratio 0 ... 600 g/kg d.a. The accuracies of these calculated variables are limited by the accuracies of the measured variables on which they are based, namely RH and T. The RH and T accuracies are stated under HMP46 probe. Cable length 1500 mm; extended spiral cable Operating temperature range for electronics -20 ... +60 °C (-4 ... +140 °F) Housing material Electronics housing ABS plastic Probe stainless steel Housing classification IP65 (NEMA 4) electronics

electronics IP65 (NEMA 4)
Sensor protection sintered filter, part no. 0195
optionmembrane filter, part no. 10159HM (max +80 °C / +176 °F)
plastic grid, part no. 6221 (max +80 °C / +176 °F)
Weight 450 g

Electromagnetic compatibility

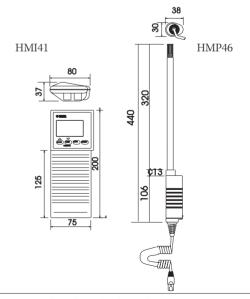
Complies with EMC standard
EN61326-1, Portable Equipment

Accessories

Transmitter calibration cables for Calibrating HM60/70's, HM140's, HMM22D, HMW61/71 Cable Part # 19116ZZ 19164ZZ HMP230's, HMM210 HM20/30's, HMP130's, HMM30C 19165ZZ HMT360's for use in 'safe' zones 25916ZZ 25917ZZ HMT330's Carrying case for HMI41 & HMP46 plastic part no. 210614 part no. MI70CASE2 aluminum Serial communication cable part no. 19446ZZ

Dimensions

Dimensions in mm.



HUMICAP* is a registered trademark of Vaisala. Specifications subject to change without prior notice. © Vaisala Oyj

