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HMI41 Indicator and HMP42/HMP46 Probes

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

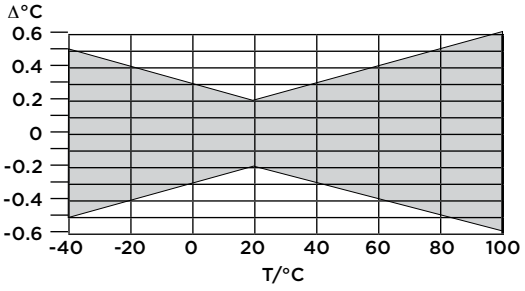
HUMIDITY

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	30 s

TEMPERATURE

Measurement range HMP42	-40 ... +100 °C (-40 ... +212 °F)

Temperature accuracy over measurement range



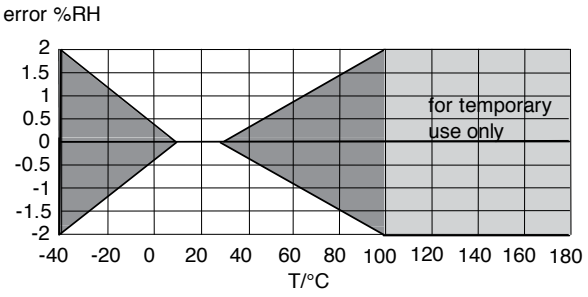
Temperature sensor	Pt100 RTD Class F0.3 IEC 60751

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	±2 %RH
Factory calibration uncertainty (+20 °C / +68 °F)	
0 … 15 % RH	±1 %RH
15 … 78 %RH	±1.5 %RH

Temperature Dependence

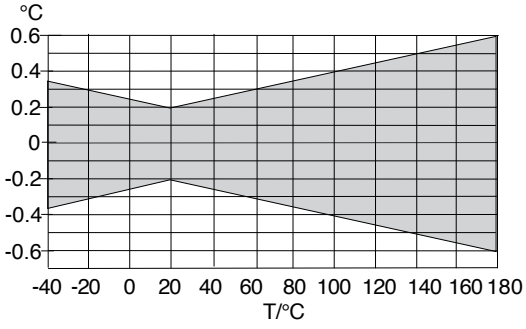


Typical long-term stability	better than 1 %RH per year
Response time (90%) at +20 °C in still air w/sintered filter	15 s

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 accuracy over the measurement range



Temperature sensor	Pt100 RTD Class F0.1 IEC 60751

Technical Data

General for Probes

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	
electronics	IP65 (NEMA 4)
HMP42 sensor protection	
steel grid	19867HM
membrane, tube set (5 pcs)	19858HM
HMP46 sensor protection	
sintered filter	0195
optional membrane filter, (max +80 °C / +176 °F)	10159HM
plastic grid, (max +80 °C / +176 °F)	6221
Weight	
HMP42	200 g
HMP46	450 g
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Portable Equipment.

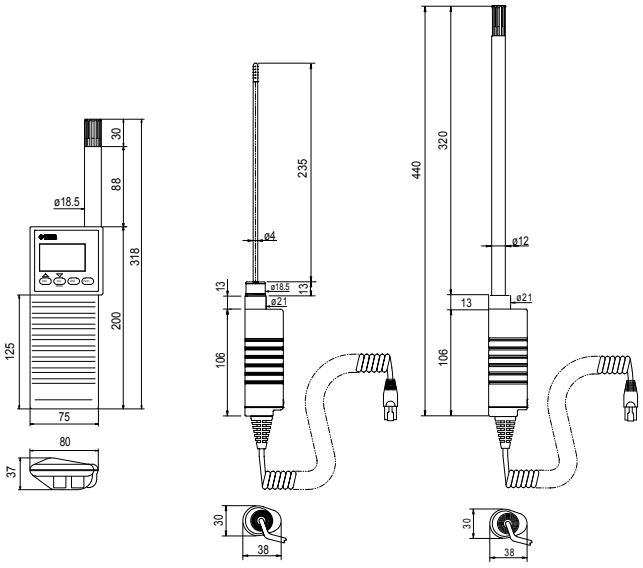
Accessories

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

Dimensions

Dimensions in mm.

HMI41 HMP42 HMP46



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