

HMI41 Indicator and HMP46 High Temperature Probe



The Vaisala HUMICAP® Humidity Indicator HMI41 equipped with the Vaisala HUMICAP® Humidity and Temperature Probe HMI46 is an ideal combination for spot checking and field calibration.

Features/Benefits

- RH measurement range 0 ... 100 %RH
- Temperature measurement range -40 ... +100 °C (-40 ... 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

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.

Technical Data

HMI41 indicator

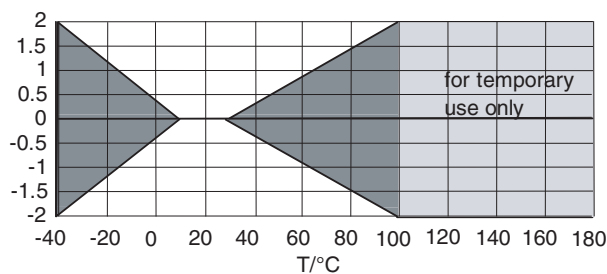
Calculated variables	dewpoint temperature, absolute humidity, wet bulb temperature, mixing ratio
Resolution	0.1 %RH; 0.1 °C/°F
Power supply	4 batteries, type AA (LR 6)
Battery operation time (alkaline batteries)	72 h continuous use
Auto-off function	
Operating temperature	-20 ... +60 °C (-4 ... +140 °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)

HMP46 probe

Humidity	
Measurement range	0 ... 100 %RH, non-condensing
Accuracy (including nonlinearity, hysteresis and repeatability)	
Maximum achievable accuracy when calibrated against high quality, certified humidity standards:	
0 ... 90 %RH	±1 %RH
90 ... 100 %RH	±2 %RH
When calibrated against salt solutions (ASTM E104-85)	
0 ... 90 %RH	±2 %RH
90 ... 100 %RH	±3 %RH

Temperature Dependence

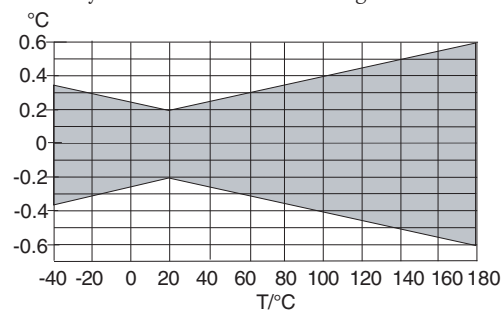
error %RH



Typical long-term stability	better than 1 %RH per year
Response time (90%) at +20 °C in still air w/sintered filter	15 s
Humidity sensor	HUMICAP® 180

Temperature

Continuous measurement	-40 ... +100 °C (-40 ... +212 °F)
Short-term measurement	-40 ... +180 °C (-40 ... +356 °F)
Accuracy at +20 °C (68 °F)	±0.2 °C (±0.36 °F)
Accuracy over the measurement range	



Temperature sensor	Pt 100 IEC 751 1/3 class B
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General

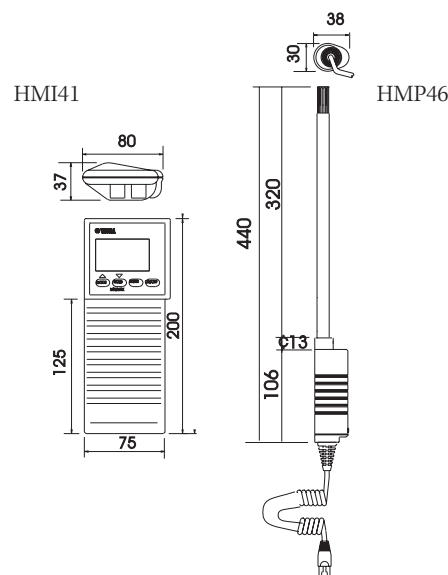
Typical ranges of calculated variables	
dewpoint temperature	-20 ... +100 °C (-4 ... +100 °F)
absolute humidity	0 ... 600 g/m ³
wet bulb temperature	0 ... 100 °C (32 ... 212 °F)
mixing ratio	0 ... 600 g/kg d.a.
The accuracies of these calculated variables are limited by the accuracies of the measured variables on which they are based, namely RH and T. The RH and T accuracies are stated above under Measured Variables.	
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)
Sensor protection	sintered filter, part no. 0195
option membrane 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	
Cable Part #	for Calibrating
19116ZZ	HM60/70's, HM140's, HMM22D, HMW61/71
19164ZZ	HMP230's, HMM210
19165ZZ	HM20/30's, HMP130's, HMM30C
25916ZZ	HMT360's for use in 'safe' zones
25917ZZ	HMT330's
Carrying case for HMI41 & HMP46	
plastic	part no. 210614
aluminum	part no. MI70CASE2
Serial communication cable	part no. 19446ZZ

Dimensions

Dimensions in mm.



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HMP41, HMP42 and HMP45 Probes for HMI41 Indicator



The HMI41 indicator with the HMP41 probe.



HMI41 with the HMP42 probe.



HMI41 with the HMP45 probe.

Features/Benefits

- Humidity measurement range
0 ... 100 %RH
- Temperature measurement range
HMP41, HMP45: -20 ... +60 °C
(-4 ... +140 °F)
HMP42: -40 ... +100 °C (-40 ... 212 °F)
- For spot checking measurements
- Versatile and easy-to-use
- The HMI41 Indicator fits with all probes
- Extremely thin 4 mm probe head (HMP42)
- Incorporates Vaisala HUMICAP® Sensor, which provides high accuracy, excellent long-term stability, negligible hysteresis, and insensitivity to dust and most chemicals
- NIST traceable (certificate included)

PRICE:
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Vaisala HUMICAP® Humidity Indicator HMI41 can be used with any one of the four probes to quickly and easily measure humidity and temperature, and to make other measurement calculations such as dewpoint, wet bulb temperature, absolute humidity and mixing ratio.

The HMI41 has an easy-to-read LCD display. Temperature readout is available in either degrees Centigrade or Fahrenheit. Calculated variables are available in metric and non-metric.

Ideal for spot checking applications

The HMI41 indicator with probes is ideal for use in a variety of spot checking applications such as plant maintenance, air-conditioning system installation and inspection, freezers and storage and production areas.

Vaisala HUMICAP® Humidity and Temperature Probe HMP41:

This probe is fix-mounted directly on the HMI41 indicator. It can be upgraded to an HMP45 by purchasing the HMM45 handle and cable option.

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, such as:

- for monitoring the drying of structures during construction or after water damage
- in tight places
- in ducts or chambers
- 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 HMP45:

This probe for general purposes features an extended spiral cable.

Vaisala HUMICAP® Humidity and Temperature Probe HMP46:

See preceding data sheet.

HMI41 Hand-Held Indicator

Vaisala HUMICAP® Humidity and Temperature Indicator		HMI41SET		PRICE
1	Probe	HMP41	A	
		HMP42	B	
		HMP45	C	
		HMP46	D	
		HMP44	E	
		HMP44L	F	
2	Carrying Case for HMI41 and probe(s)	no case		1
		<i>Aluminum case for HMP41/42/45/46</i>	(MI70CASE2)	3
		<i>Rigid plastic case for HMP41/42/45/46</i>	(210614)	5
3	Manual	no manual		A
		English		B
				TOTAL
				QTY
				TOTAL VALUE

Selections in bold are included in the prices of the basic versions.

Selections in italic are available at an extra price.

Shaded sections indicate typical selections.

Example of order code with typical settings:

HMI41SET D 5 B

Accessories and Spare Parts:	Description:	Order Code:
	Membrane filter tube set (5 pcs) for the HMP42 probe	19858HM
	Steel grid for the HMP42 probe	19867HM
	Serial interface cable for HMI41	19446ZZ
	Indicator only	HMI41
	Calibration adapter for HMP42 probe	HM37067
	Rubber sleeve set (10 pcs) for HMP42 probe	19809HM
	Connection Cables for:	
	HM60/70	19116ZZ
	HMP200 Series	19164ZZ
	HM20/30	19165ZZ
	HMT300, HMT360 and HMT100	25917ZZ
	with over voltage-barrier HMT360 Series	25905ZZ
	HMI41 Spare Probes Only:	
	HMP41	
	HMP42	
	HMP45	
	HMP46	
	HMP44	
	HMP44L	