



VAISALA

HUMICAP® Handheld Humidity and Temperature Meter Series HM40



Features

- Humidity measurement range 0–100 %RH
- Temperature measurement ranges -40 ... +100 °C (-40 ... +212 °F), depending on probe model. The HM46 model can measure up to +180 °C (+356 °F) for a short period of time.
- Incorporates proven Vaisala HUMICAP® sensor technology
- Calibration reminder function
- Probes can be user-calibrated using an on-site reference
- Graphical display indicates when measurement has stabilized
- Hold-button to freeze the screen and save the reading
- Multilingual user interface available in 10 languages (EN, DE, FR, JA, ZH, PT, ES, RU, FI, SV)

The easy-to-use HM40 is a compact and portable humidity meter that provides reliable measurements in a wide range of applications. It is the ideal spot-checking tool for everything from structural moisture measurement and air conditioning systems to humidity measurement in industrial production processes and life science applications. There are four different models available: HM41, HM42, HM45, and HM46.

Benefits

- Compact, portable, and easy to use
- Versatile meter with wide measurement range and multiple calculated parameters
- Ideal for spot-checking in a wide variety of applications

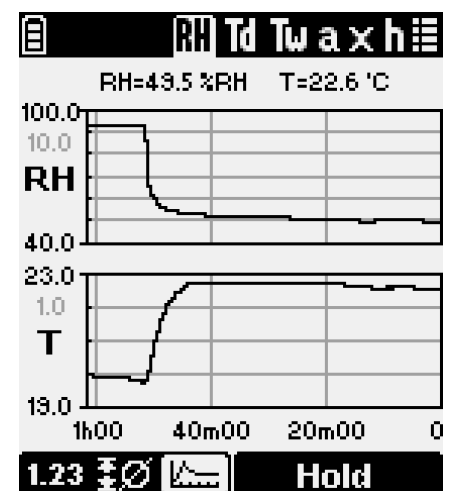
Simple and easy to use

HM40 has a large, user-friendly graphical display and easy-to-use push buttons. The user interface is simple and intuitive, and available in 10 languages. Also, many settings can be modified to meet the users' individual needs. In addition to relative humidity and temperature, HM40

provides five calculated humidity parameters, all of which are available in metric and non-metric units. HM40 is powered by 2 AA batteries. An external USB charger and rechargeable AA-sized NiMH batteries are available as an option. Each model also comes with a handy belt clip and case.

Easy recalibration

Calibrating HM40 is easy. The meter or the probe can be sent to a Vaisala Service Center for recalibration. Alternatively, calibration can be completed on-site by users with a humidity reference such as another handheld meter or Vaisala Humidity Calibrator HMK15. The indicator includes a calibration reminder function that can be activated by the user.



The graph clearly indicates when readings have stabilized.



HM40 Handheld Humidity and Temperature Meter Series



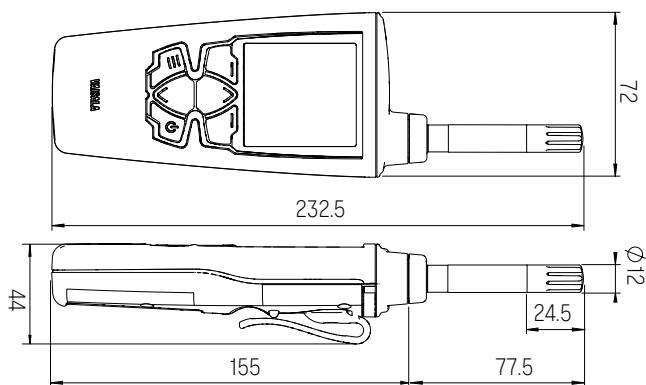
HM41 technical data

Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

At 0 ... +40 °C	±1.5 %RH (0–90 %RH) ±2.5 %RH (90–100 %RH)
At -10 ... 0 °C and +40 ... +60 °C	±3.0 %RH (0–90 %RH) ±4.0 %RH (90–100 %RH)

Humidity measurement response time (90 %) with plastic grid filter 17 s

Humidity sensor	HUMICAP® 180R
Temperature measurement range	-10 ... +60 °C (+14 ... +140 °F)
Temperature sensor	Pt1000 RTD Class F0.1 IEC 60751
Measurement probe	Interchangeable HMP113 probe
Probe material	PC/ABS plastic blend (white)
IP rating	IP54
Weight (with alkaline batteries)	230 g (8.1 oz)
Filter material	PC (glass-reinforced)



HM41 dimensions in mm

HM42 technical data

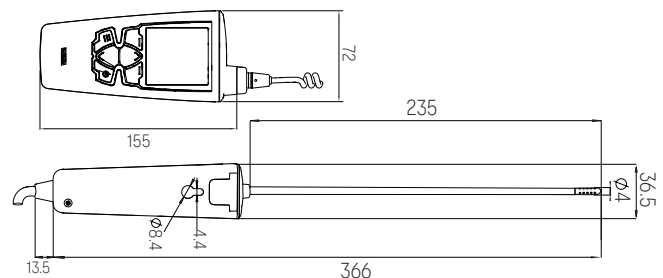
Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

At 0 ... +40 °C	±1.5 %RH (0–90 %RH) ±2.5 %RH (90–100 %RH)
At -40 ... 0 °C and +40 ... +80 °C	±3.0 %RH (0–90 %RH) ±4.0 %RH (90–100 %RH)
At +80 ... +100 °C	±4.0 %RH ¹⁾

Humidity measurement response time (90 %) with membrane filter and steel grid 26 s

Humidity sensor	HUMICAP® 100R-Mini
Temperature measurement range	-40 ... +100 °C (-40 ... +212 °F)
Temperature sensor	Pt1000 RTD Class F0.3 IEC60751
Measurement probe	HM42PROBE
Probe head material	Stainless steel
IP rating	IP40 (probe), IP54 (indicator)
Weight (with alkaline batteries)	370 g (13.1 oz)
Filter material	Stainless steel and PTFE membrane
Probe cable length	1500 mm (59 in)

1) Not recommended for $T_d > 85$ °C



HM42 dimensions in mm



HM45 technical data

Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

At 0 ... +40 °C	±1.5 %RH (0–90 %RH) ±2.5 %RH (90–100 %RH)
At -40 ... 0 °C and +40 ... +60 °C	±3.0 %RH (0–90 %RH) ±4.0 %RH (90–100 %RH)

Humidity measurement response time (90 %) with plastic grid filter

17 s

Humidity sensor

HUMICAP® 180R

Temperature measurement range

-40 ... +60 °C (-40 ... +140 °F)

Temperature sensor

Pt1000 RTD Class F0.1 IEC 60751

Measurement probe

Interchangeable HMP113 with HM40HANDLE

Probe material

PC/ABS plastic blend (white)

IP rating

IP54

Weight (with alkaline batteries)

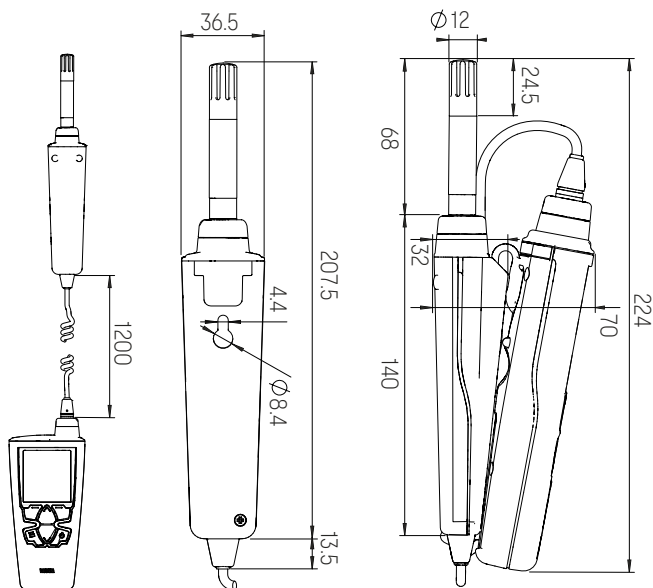
330 g (11.6 oz)

Filter material

PC (glass-reinforced)

Probe cable length

1200 mm (47 in)



HM45 dimensions in mm



HM46 technical data

Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

At 0 ... +40 °C	±1.5 %RH (0–90 %RH) ±2.5 %RH (90–100 %RH)
At -40 ... 0 °C and +40 ... +80 °C	±3.0 %RH (0–90 %RH) ±4.0 %RH (90–100 %RH)
At +80 ... +100 °C	±4.0 %RH ¹⁾

Humidity measurement response time (90 %) with brass sintered filter

40 s

Humidity sensor

HUMICAP® 180R

Temperature measurement range

-40 ... +100 °C (-40 ... +212 °F), short-term up to +180 °C (+356 °F)

Temperature sensor

Pt1000 RTD Class F0.1 IEC 60751

Measurement probe

HM46PROBE

Probe head material

Stainless steel, brass filter

IP rating

IP40 (probe), IP54 (indicator)

Weight (with alkaline batteries)

490 g (17.3 oz)

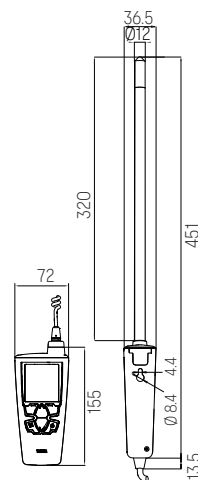
Filter material

Sintered brass

Probe cable length

1500 mm (59 in)

¹⁾ Not recommended for $T_d > 85$ °C



HM46 dimensions in mm



HM40 Series Technical Data

Measurement performance

Calculated parameters	Dew point, wet bulb temperature, absolute humidity, mixing ratio, enthalpy
Relative humidity	
Measurement range	0–100 %RH
Factory calibration uncertainty at +20 °C (+68 °F):	
HM41 and HM45	±1.1 %RH (0–90 %RH) ±1.8 %RH (90–100 %RH)
HM42 and HM46	±1.5 %RH
Stability	±2 %RH over 2 years
Temperature	
Accuracy over temperature range, HM41 and HM45:	
at +15 ... +25 °C (+59 ... +77 °F)	±0.1 °C (±0.18 °F)
at 0 ... +15 °C and +25 ... +40 °C (+32 ... +59 °F and +77 ... +104 °F)	±0.15 °C (±0.27 °F)
Accuracy over temperature range, HM42 and HM46:	
At 0 ... +40 °C (+32 ... +104 °F)	±0.2 °C (0.36 °F)
At -40 ... 0 °C and +40 ... +100 °C (-40 ... +32 °F and +104 ... +212 °F)	±0.4 °C (0.72 °F)

Operating environment

Storage temperature	-30 ... +70 °C (-22 ... +158 °F)
Operating temperature	
Indicator	-10 ... +60 °C (+14 ... +140 °F)
Probe handle	-40 ... +60 °C (-40 ... +140 °F)
Probe head	-40 ... +180 °C (-40 ... +356 °F)

Indicator

Display	LCD (140 x 160 pixels)
Power-up time	< 3 s
Batteries	2 × AA, 1.5 V
Operation time	(Typical) 100 hours (without backlight)
Menu languages	English, Chinese (simplified), Finnish, French, German, Japanese, Portuguese, Russian, Spanish, Swedish

Compliance

EU directives and regulations	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) as amended by 2015/863
EMC immunity	EN 61326-1:2013, Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements.
EMC emissions	CISPR 22 / EN 55022, Class B FCC part 15 B, Class B ICES-3 / NMB-3 (Class B)
Compliance marks	CE, China RoHS, RCM, UKCA

Spare parts and accessories

Indicator	
Spare HM40 indicator	HM40INDI
Belt clip (3 pcs)	227710SP
Battery cover (3 pcs)	225688SP
External battery recharger with USB connection and 2 batteries	229249SP
Case for short HM40 probes	235849SP
Case for long HM40 probes	DRW242351SP
Standard probe (HM41)	
HMP113 probe for HM40	HMP113 (configuration: V00B2C1A0)
Plastic locking bushing (3 pcs) for attaching HMP113 probe to HM40 indicator	DRW238590SP
Plastic grid filter for HMP113 probe	DRW240185SP
Plastic grid with membrane filter for HMP113 probe	ASM210856SP
HM42 probe (HM42)	
Thin 4 mm diameter probe for HM40	HM42PROBE
Steel grid filter for HM42PROBE	19867HM
Membrane tube set (5 pcs) for HM42PROBE	19858HM
Rubber sleeve set (10 pcs) for HM42PROBE	19809HM
Calibration adapter for HM42PROBE	HM37067
Remote probe (HM45)	
HMP113 probe for HM40	HMP113 (configuration: V00B2C1A0)
Plastic locking bushing (3 pcs) for attaching HMP113 probe to HM40 indicator	DRW238590SP
HM40 handle and cable	HM40HANDLE
Plastic grid filter for HMP113 probe	DRW240185SP
Plastic grid with membrane filter for HMP113 probe	ASM210856SP
HM46 probe (HM46)	
Stainless steel 12 mm diameter probe for HM40	HM46PROBE
Sintered filter for HM46PROBE	0195
Optional membrane filter for HM46PROBE (up to +80 °C)	10159HM
Plastic grid filter for HM46PROBE (up to +80 °C)	6221
Disposable sleeve, 50 pcs set	1558
Probe holder	HM36915

Mechanical specifications

Materials	
Indicator body	PC/ABS blend, acrylic display lens
Probe holder	PC/ABS blend (gray)
Probe handle	PC/ABS blend (white), PC/ABS blend (gray, HM45), PBT (gray, HM42/46)
HMP113 probe or probe measurement head	PC/ABS blend (white, HM41/45) or stainless steel (HM42/46)

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