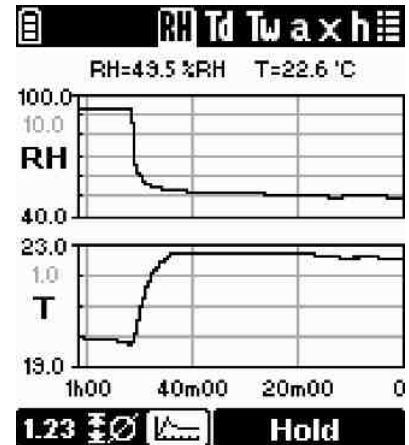


Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter Series HM40



The Vaisala HM40 Humidity and Temperature Meter is designed for spot-checking in a wide variety of environments and is available with four different probe options.

Left to right: HM41, HM45, HM42, and HM46.



The graph clearly indicates when the readings have stabilized.

Benefits

- Compact, portable, and easy to use
- Versatile meter with wide measurement range and multiple calculated parameters
- Four different models available: HM41, HM42, HM45, and HM46
- Ideal for spot-checking in a wide variety of applications

Features

- Humidity measurement range 0 ... 100 %RH
- Temperature measurement ranges -40 ... +100 °C (-40 ... +212 °F), depending on probe model. The HM46 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.

Simple and Easy to Use

The 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 users' individual needs. In addition to relative humidity and temperature, the HM40 provides five calculated humidity

parameters, all of which are available in metric and non-metric units.

The HM40 is powered by 2 AA batteries. An external NiMH charger with USB connection 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 the 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 hand-held meter or the Vaisala Humidity Calibrator HMK15. The indicator includes a calibration reminder function that can be activated by the user.



Technical Data

HM41 Humidity and Temperature Meter

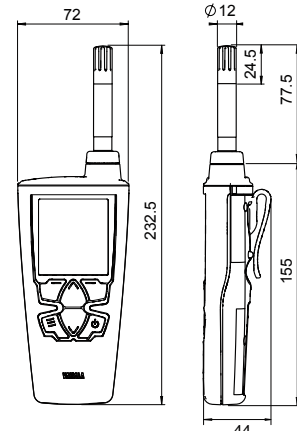
Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

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

Temperature measurement range	-10 ... +60 °C
Measurement probe	interchangeable HMP113 probe
Probe material	PC/ABS plastic blend (white)
Housing classification	IP54

Dimensions

Dimensions in mm



Technical Data

HM42 Humidity and Temperature Meter for Tight Spaces

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

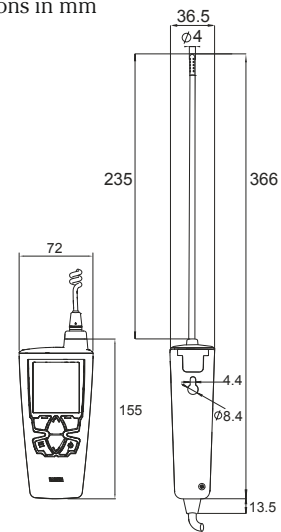
at 0 ... +40 °C	±1.5 %RH (0 ... 90 %RH)
	±2.5 %RH (90 ... 100 %RH)
at -40 ... 0 °C and	±3.0 %RH (0 ... 90 %RH)
+40 ... +80 °C	±4.0 %RH (90 ... 100 %RH)
at +80 ... +100 °C	±4.0 %RH*

Probe head temperature measurement range	-40 ... +100 °C
Measurement probe	HM42PROBE
Probe head material	Stainless steel
Housing classification	IP40 (probe), IP54 (indicator)

*) Not recommended for $T_d > 85$ °C

Dimensions

Dimensions in mm



Technical Data

HM45 Humidity and Temperature Meter with Remote Probe

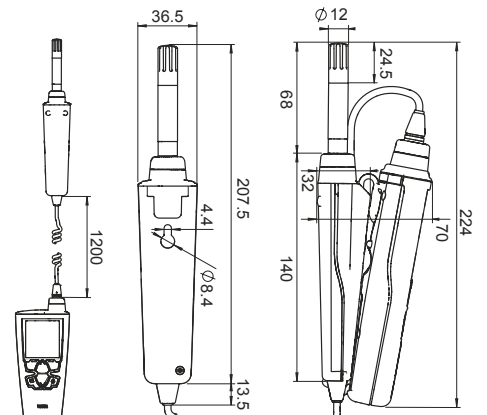
Humidity measurement accuracy (including non-linearity, hysteresis, and repeatability):

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

Probe temperature measurement range	-40 ... +60 °C
Measurement probe	interchangeable HMP113 with HM40HANDLE
Probe material	PC/ABS plastic blend (white)
Housing classification	IP54

Dimensions

Dimensions in mm





Technical Data

HM46 Humidity and Temperature Meter for Mechanical Durability and Extra Reach

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*

Probe head temperature -40 ... +100 °C, short-term up to +180 °C

Measurement probe HM46PROBE

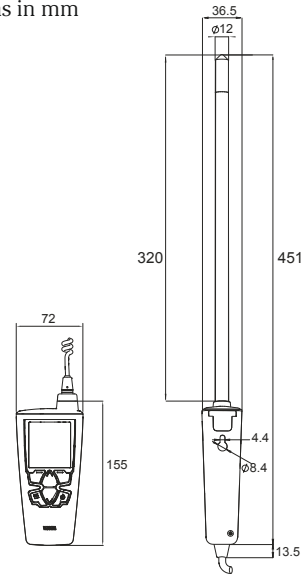
Probe head material Stainless steel, brass filter

Housing classification IP40 (probe), IP54 (indicator)

*) Not recommended for $T_d > 85$ °C

Dimensions

Dimensions in mm



Technical Data

Performance

RELATIVE HUMIDITY

Measurement range 0 ... 100 %RH

Accuracy (including non-linearity, hysteresis, and repeatability) for different models at 0 ... +40 °C (+32 ... +104 °F)

	±1.5 %RH (0 ... 90 %RH)
	±2.5 %RH (90 ... 100 %RH)

Factory calibration uncertainty at +20 °C (+68 °F) ±1.5 %RH

Humidity measurement response time

(90 %) with plastic grid filter (HM41 and HM45)	17 s
(90 %) with membrane filter and steel grid (HM42)	26 s
(90 %) with brass sintered filter (HM46)	40 s

Stability ±2 %RH over 2 years

Humidity sensor

HM41, HM45, HM46	HUMICAP® 180R
HM42	HUMICAP® 100R-Mini

TEMPERATURE

Measurement range

HM41	-10 ... +60 °C (+14 ... +140 °F)
HM42	-40 ... +100 °C (-40 ... +212 °F)
HM45	-40 ... +60 °C (-40 ... +140 °F)
HM46	-40 ... +100 °C (-40 ... +212 °F), short-term up to +180 °C (+356 °F)

Accuracy over temperature range:

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)

Temperature sensor

HM41, HM45, HM46	Pt1000 RTD Class F0.1 IEC 60751
HM42	Pt1000 RTD Class F0.3 IEC60751

Mechanics

Weight (with alkaline batteries)	
HM41	230 g
HM42	370 g
HM45	330 g
HM46	490 g
Probe cable lengths	
HM42, HM46	1500 mm
HM45	1200 mm
Materials	
Meter body	PC/ABS blend, acrylic display lens
Probe holder	PC/ABS blend (gray)
Probe handle	PC/ABS blend (white), PC/ABS blend (gray, HM45) or PBT (gray, HM42/46)
HMP113 probe or probe measurement head	PC/ABS blend (white, HM41/45) or stainless steel (HM42/46)
Filter	
HM41, HM45	PC (glass-reinforced)
HM42	Stainless steel and PTFE membrane
HM46	Sintered brass
Housing classification	
HM42 and HM46 probes	IP40

Technical Data

General

Power-up time	< 3 s
Batteries	2 × AA, 1.5 V
Calculated parameters	Dew point, wet bulb temperature, absolute humidity, mixing ratio, enthalpy
Menu languages	English, Chinese (simplified), Finnish, French, German, Japanese, Portuguese, Russian, Spanish, Swedish
Display	LCD (140 x 160 pixels)
Operation time (typical)	100 hours (without backlight)
Operation temperature range	
indicator	-10 ... +60 °C (+14 ... +140 °F)
probe handle	-40 ... +60 °C (-40 ... +140 °F)
probe head	(see specifications for each probe type, ranges -40 ... +180 °C (-40 ... +356 °F))
Storage temperature range	-30 ... +70 °C (-22 ... +158 °F)
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Portable Equipment

Accessories and Spare Parts

INDICATOR	
Spare HM40 indicator	HM40INDI
Belt clip (3 pcs)	227710SP
Battery cover (3 pcs)	225688SP
NiMH rechargeable batteries (4 pcs)	229247SP
External battery recharger with USB connection and 4 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	DRW236214SP
Plastic grid with membrane filter for HMP113 probe	230727SP

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	DRW236214SP
Plastic grid with membrane filter for HMP113 probe	230727SP

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

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