



# 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

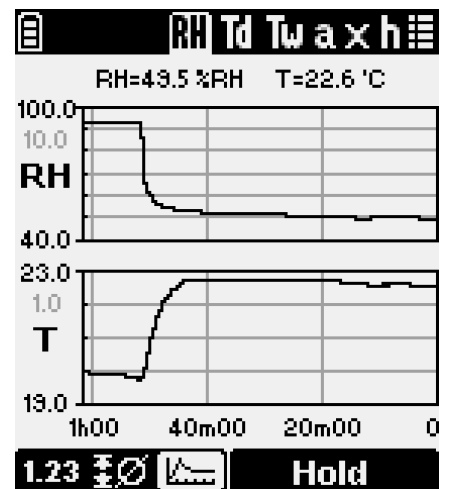
## Simple and Easy to Use

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 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 hand-held 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 Hand-Held 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 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)

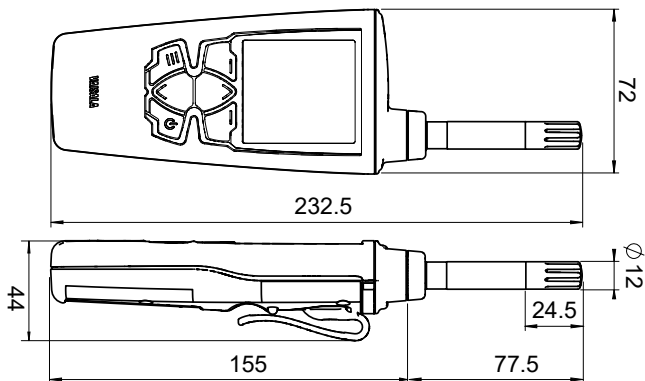
## HM42 Technical Data

Humidity Measurement Accuracy (including Non-linearity, Hysteresis, and Repeatability):

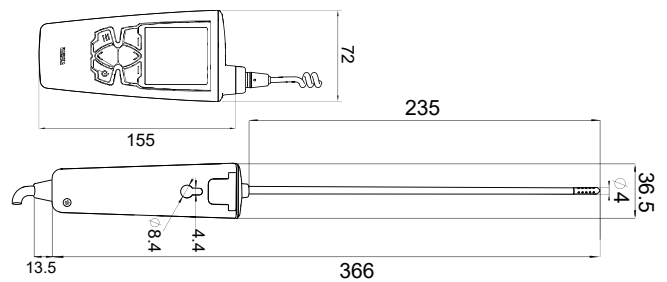
At 0 ... +40 °C	±1.5 %RH (0 ... 90 %RH) ±2.5 %RH (90 ... 100 %RH)
At -40 ... 0 °C and +40 ... +80 °C	±3.0 %RH (0 ... 90 %RH) ±4.0 %RH (90 ... 100 %RH)
At +80 ... +100 °C	±4.0 %RH <sup>1)</sup>

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)

<sup>1)</sup> Not recommended for  $T_d > 85$  °C



Dimensions in mm



Dimensions in mm



### HM45 Technical Data

Humidity Measurement Accuracy (Including Non-linearity, Hysteresis, and Repeatability):

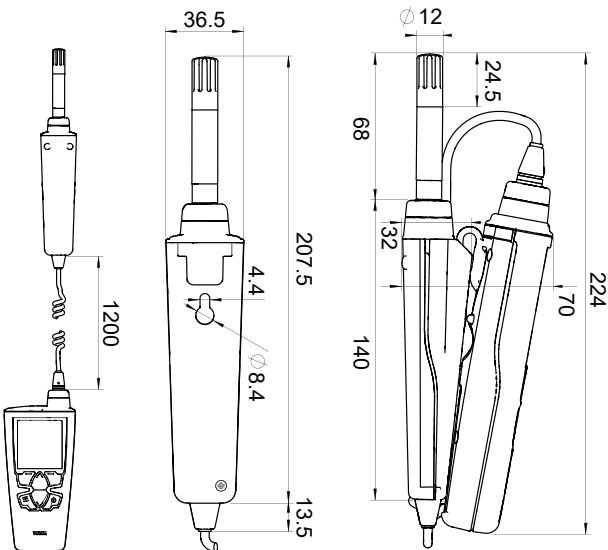
At 0 ... +40 °C	±1.5 %RH (0 ... 90 %RH) ±2.5 %RH (90 ... 100 %RH)
At -40 ... 0 °C and +40 ... +60 °C	±3.0 %RH (0 ... 90 %RH) ±4.0 %RH (90 ... 100 %RH)
Humidity sensor	HUMICAP® 180R
Temperature measurement range	-40 ... +60 °C (-40 ... +140 °F)
Temperature sensor	Pt1000 RTD Class F0.1 IEC 60751
Measurement 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)

### HM46 Technical Data

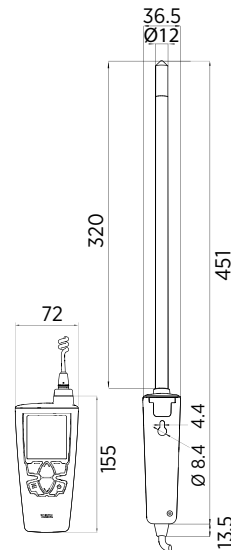
Humidity Measurement Accuracy (Including Non-linearity, Hysteresis, and Repeatability):

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
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  $T_a > 85$  °C



Dimensions in mm



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  
 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):

HM42 and HM46 ±1.5 %RH  
 HM41 and HM45 ±1.1 %RH (0 ... 90 %RH)  
 ±1.8 %RH (90 ... 100 %RH)  
 Stability ±2 %RH over 2 years

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

### Temperature

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)

## Operating Environment

### Operating temperature

Indicator -10 ... +60 °C (+14 ... +140 °F)  
 Probe handle -40 ... +60 °C (-40 ... +140 °F)  
 Probe head Range -40 ... +180 °C (-40 ... +356 °F)  
 See probe specifications

Storage temperature -30 ... +70 °C (-22 ... +158 °F)

EMC compliance EN61326-1, Portable Equipment

## 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) or PBT (gray, HM42/46)

HMP113 probe or probe measurement head PC/ABS blend (white, HM41/45) or stainless steel (HM42/46)

IP rating, HM40 IP54

## 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

## Spare Parts and Accessories

### 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

