



HM70 Handheld Humidity and Temperature Meter

for Spot-Checking Applications



Features

- Designed for spot-checking and field calibration
- Multilingual user interface
- Shows measurement trends graphically
- Proven Vaisala HUMICAP® Sensor technology
- 3 probe alternatives, temperature measurement ranges between -70 and +180 °C
- 2 probes: also dew point and CO₂ probes can be connected simultaneously
- Displays various humidity parameters
- Sensor preheat and chemical purge options for demanding conditions
- 6-point traceable calibration (certificate included)

The Vaisala HUMICAP® Handheld Humidity and Temperature Meter HM70 is designed for demanding humidity measurements in spot-checking applications. It is also ideal for field checking and calibration of Vaisala's fixed humidity instruments.

Vaisala HUMICAP® Technology

The HM70 incorporates the latest generation of the Vaisala HUMICAP® Sensor. It is reliable and has better than ever long-term stability. Additionally, it has a sensor that copes well with chemical interference and provides accuracy that lasts in demanding conditions.

Chemical Purge

The chemical purge option maintains measurement accuracy in environments with high concentrations of chemicals. The sensor preheat option reduces measurement delays as it keeps the sensor dry when the probe is inserted into hot and humid processes.

Three Probes to Choose From

The HMP75 is a general purpose probe whereas the HMP76 is a long, stainless steel probe especially suitable for spot-checking in ducts. The HMP77 is a small probe at the end of a 5-meter cable. The probe is ideal for difficult-to-reach areas and for on-site calibration of Vaisala's process transmitters. In addition, the HM70 supports the use of Vaisala's dew point, carbon dioxide and moisture in oil probes, allowing measurements in several multiparameter applications.

MI70 Link

The optional MI70 Link Windows® software and the USB connection cable form a practical tool for transferring logged data and real time measurement data from the HM70 to a PC.

Technical Data

Measurement Performance, HMP75, HMP76, and HMP77 Probes

Relative Humidity

Measurement range 0 ... 100 %RH

Accuracy including non-linearity, hysteresis and repeatability. Defined as ± 2 standard deviation limits:

At +15 ... +25 °C (+59 ... +77 °F) ± 1 %RH (0 ... 90 %RH)
 ± 1.7 %RH (90 ... 100 %RH)

At -20 ... +40 °C (-4 ... +104 °F) $\pm (1.0 + 0.008 \times \text{reading})$ %RH

At -40 ... +180 °C (-40 ... +356 °F) $\pm (1.5 + 0.015 \times \text{reading})$ %RH

Factory calibration uncertainty ± 0.6 %RH (0 ... 40 %RH)
(+20 °C / +68 °F) ± 1.0 %RH (40 ... 97 %RH)

Response time (90%) at +20 °C (+68 °F) in still air:

HMP75 (with standard plastic grid) 17 s

HMP76 (with standard sintered bronze filter) 60 s

HMP77 (with standard plastic grid and stainless steel netting) 50 s

Typical long-term stability better than 1 %RH / year

Temperature

HMP75 measurement range -20 ... +60 °C (-4 ... +140 °F)

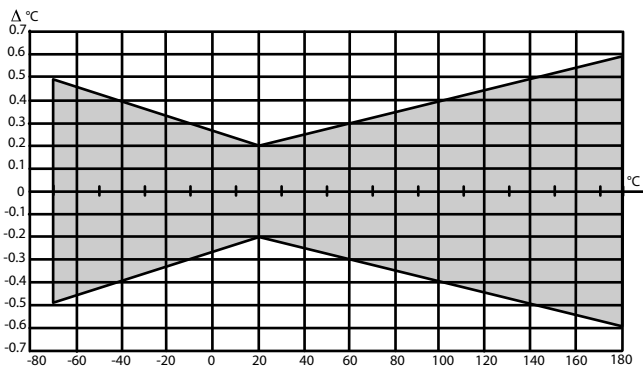
HMP76 measurement range -50 ... +120 °C (-58 ... +248 °F)

HMP76 short time measurement range -50 ... +180 °C (-58 ... +356 °F)

HMP77 measurement range -70 ... +180 °C (-94 ... +356 °F)

Accuracy at +20 °C (+68 °F) ± 0.2 °C (± 0.36 °F)

Accuracy over temperature range:



Other Variables Available

dew point, frost point, absolute humidity, mixing ratio, wet bulb temperature, water content, vapor pressure, saturation vapor pressure, enthalpy, water activity

General, HMP75, HMP76, and HMP77 Probes

Humidity sensor HUMICAP® 180R
HUMICAP® 180RC (chemical purge, sensor preheat)

Temperature sensor Pt100 RTD Class F0.1 IEC 60751

Operating temperature range for electronics -40 ... +60 °C (-40 ... +140 °F)

Standard Sensor Protection

HMP75 plastic grid

HMP76 sintered bronze filter

HMP77 grid with SS netting

Mechanical Specifications, HMP75, HMP76, and HMP77 Probes

Housing classification IP65 (NEMA 4)

Housing material ABS/PC blend

Probe material Stainless steel (AISI316L)

Probe cable length (between indicator and the probe handle) 1.9 m

Probe cable length of HMP77 (from handle to the root of probe) 5.0 m

Probe diameter 12 mm (0.47 inch)

Weight

HMP75 250 g

HMP76 350 g

HMP77 500 g

MI70 Measurement Indicator

Operating Environment

Operating temperature -10 ... +40 °C (+14 ... +104 °F)

Operating humidity 0 ... 100 % RH, non-condensing

Storage temperature -40 ... +70 °C (-40 ... +158 °F)

Inputs and Outputs

Max. no of probes 2

Power supply Rechargeable NiMH battery pack with AC adapter or 4xAA size alkalines, type IEC LR6

PC interface MI70 Link software with USB or serial port cable

Analog Output

Scale 0...1 VDC

Output resolution 0.6 mV

Accuracy 0.2 % full scale

Temperature dependence 0.002 %/°C full scale

Minimum load resistor 10 kΩ to ground

Mechanical Specifications

Housing classification IP54

Housing materials ABS/PC blend

Weight 400 g

Compatibility

EMC compliance EN61326-1, Portable Equipment

Other

Menu languages English, Chinese, Spanish, Russian, French, Japanese, German, Swedish, Finnish

Display

- LCD with backlight
- Graphic trend display of any parameter
- Character height up to 16 mm

Alarm Audible alarm function

Data logging capacity 2700 real time data points

Logging interval 1 s to 12 h

Logging duration 1 min ... memory full

Resolution 0.01 %RH, 0.01 °C/°F, 0.01 hPa, 0.01 a_w, 10 ppm / 0.01% CO₂

Battery Operation Time

Typical charging time 4 hours

Operation Times

Continuous use	48 h typical at +20 °C (68 °F)
Data logging use	up to a month

Spare Parts and Accessories

Carrying Cases

Weatherproof carrying case for MI70 and HMP75/77 probe	MI70CASE3
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Weatherproof carrying case for MI70 and HMP76 probe	MI70CASE4
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Soft carrying case for MI70 and HMP75/77 probe	MI70SOFTCASE
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Transmitter Connection Cables

HMT330 & HMT120/130	211339
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HMT310	DRW216050SP
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HMW90 Series, HMDW110 Series & GMW90 Series	219980SP
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HMD60/70 Series	HMA6070
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Software

MI70 Link software with USB cable	219687
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MI70 Link software with serial port cable	MI70LINK
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Cables

Analog output cable	27168ZZ
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10 m (32.81 ft) extension cable for probe	213107SP
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Sensor Protection HMP75

Plastic PC grid (HMP75 standard)	6221
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Membrane filter	10159HM
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Sintered bronze filter	DRW212987SP
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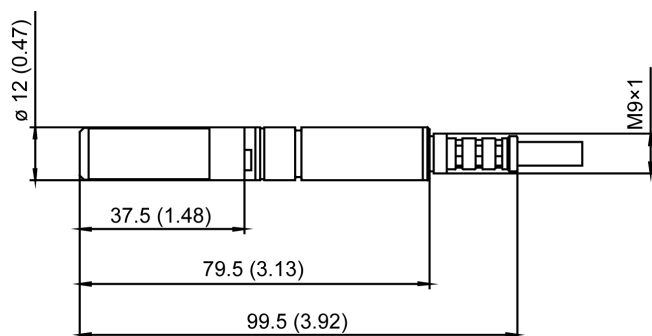
Sensor Protection HMP76/77

Plastic PPS grid	DRW010276SP
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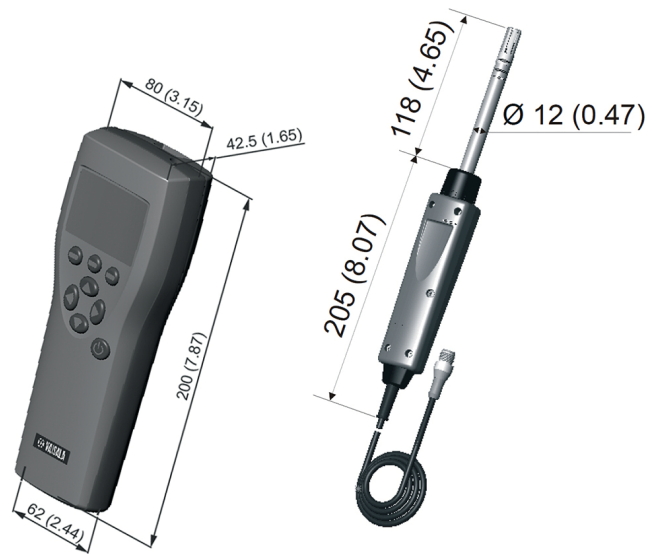
Sintered stainless steel filter	HM47280SP
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Sintered bronze filter (HMP76 standard)	DRW212987SP
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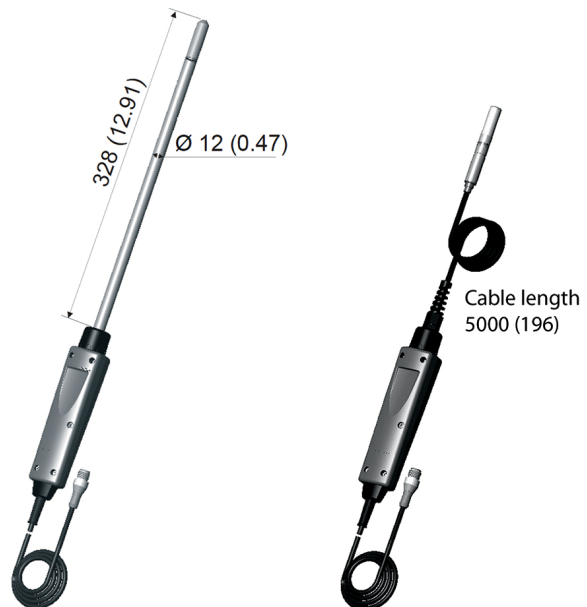
PPS grid with SS netting (HMP77 standard)	DRW010281SP
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HMP77 probe dimensions in mm (inches)



MI70 indicator and HMP75 probe dimensions in mm (inches)



HMP76 and HMP77 probe with cable, dimensions in mm (inches)



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