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HM70 Handheld Humidity and Temperature Meter for Spot-Checking Applications

The Vaisala HUMICAP® Handheld Humidity and Temperature Meter HM70 is a high-performance, portable humidity reference. From left to right: MI70 indicator, probes HMP75, HMP76 and HMP77.

Features/Benefits

- 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 CO_2 probes can be connected simultaneously
- Displays various humidity parameters
- Sensor preheat and chemical purge options for demanding conditions
- 6-point NIST 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

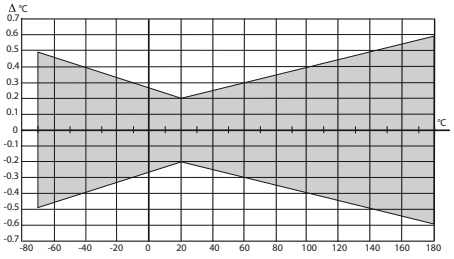
HMP75, HMP76 and HMP77 Probes Measured Variables

RELATIVE HUMIDITY

Measurement range	0 ... 100 %RH
Accuracy (including non-linearity, hysteresis and repeatability)	
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)	±(1.0 + 0.008 x reading) %RH
at -40 ... +180 °C (-40 ... +356 °F)	±(1.5 + 0.015 x reading) %RH
Factory calibration	±0.6 %RH (0 ... 40 %RH)
uncertainty (+20 °C / +68 °F)	±1.0 %RH (40 ... 97 %RH)
	(Defined as ±2 standard deviation limits.)
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
Sensor	HUMICAP® 180R
	HUMICAP® 180RC (chemical purge, sensor preheat)
Typical long-term stability	better than 1 %RH / year

TEMPERATURE

Measurement range	
HMP75	-20 ... +60 °C (-4 ... +140 °F)
HMP76	-50 ... +120 °C (-58 ... +248 °F)
short time	-50 ... +180 °C (-58 ... +356 °F)
HMP77	-70 ... +180 °C (-94 ... +356 °F)
Accuracy at +20 °C (+68 °F)	±0.2 °C (±0.36 °F)
Accuracy over temperature range	(see graph)



Temperature sensor	Pt100 RTD Class F0.1 IEC 60751

OTHER VARIABLES AVAILABLE:

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

Probe General

Operating temperature range for electronics	-40 ... +60 °C
	(-40 ... +140 °F)
Housing classification	IP65 (NEMA 4)
Housing material	ABS/PC blend
Probe material	Stainless steel (AISI316L)
Cable length between probe and indicator	1.9 m

MI70 Measurement Indicator General

Menu languages	English, Chinese, French, Spanish, German, Russian, Japanese, Swedish, Finnish
Display	LCD with backlight, graphical trend display of any parameter, character height up to 16 mm
Max. no. of probes	2
Power supply	Rechargeable NiMH battery pack with AC-adapter or 4xAA-size alkalines, type IEC LR6 0
Analog output	0... 1 VDC
Output resolution	0.6 mV
PC interface	MI70 Link software with USB or serial port cable
Data logging capacity	2700 points
Alarm	audible alarm function
Operating temperature range	-10 ... +40 °C (+14 ... +104 °F)
Operating humidity range	non-condensing
Housing classification	IP54
Battery operation time	
Continuous use	48 h typical at +20 °C (+68 °F)
Data logging use	up to a month, depending on logging interval
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Portable Equipment

Accessories

Weatherproof Carrying Cases	
for MI70 and HMP75/77 probe	MI70CASE3
for MI70 and HMP76 probe	MI70CASE4
Soft Carrying Case for MI70 and HMP75/77 probe	MI70SOFTCASE
Transmitter connection cables for	
HMT330 & HMT120/130	211339
HMT310	DRW216050
HMW90 Series, HMDW110 Series & GMW90 Series	219980
HMD/W60/70 Series	HMA6070
MI70 Link software with USB cable	219687
MI70 Link software with serial port cable	MI70LINK
Analog output cable	27168ZZ
10 m (32.81 ft) extension cable for probe	213107SP
Sensor protection HMP75	
Plastic PC grid (HMP75 standard)	6221
Membrane filter	10159HM
Sintered bronze filter	DRW212987SP
HMP76/77	
Plastic PPS grid	DRW010276SP
Sintered stainless steel filter	HM47280SP
Sintered bronze filter (HMP76 standard)	DRW212987SP
PPS grid with SS netting (HMP77 standard)	DRW010281SP

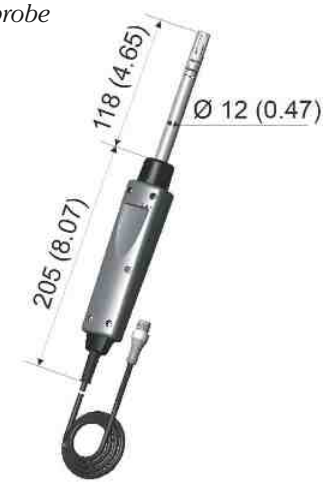
Technical Data

Dimensions

Dimensions in mm (inches)

MI70 indicator

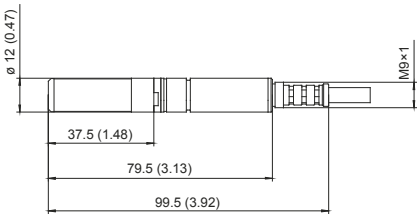
HMP75 probe



HMP76 probe

HMP77 probe with cable

HMP77 probe



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