

HM70 Hand-Held Humidity and Temperature Meter for Spot-Checking Applications



The Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70 is a high-performance, portable humidity reference that is exciting to use.

The Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70 is a user-friendly meter for demanding spot-checking humidity measurements. It is ideal for field checking and calibration of Vaisala's fixed humidity instruments.

Three probes to choose from

The HMP75 is a general purpose probe for humidity measurements between -20 and +60 °C. The HMP76 is a long, stainless steel probe for humidity measurements between -50 and +120 °C. It is 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. The measurement range is for temperatures up to +180 °C.

One or two probes can be connected simultaneously. In addition, the HM70 supports the use of Vaisala's dewpoint, carbon dioxide and moisture in oil probes, allowing measurements in multiparameter applications.

Easy-to-use user interface and

three-variable display

The HM70 features a multilingual, menu-based user interface, and a clear graphical LCD display. Overall three measurement parameters can be displayed and logged into the meter's memory at the same time. An analog output option is also available.

Proven HUMICAP® technology

The HM70 incorporates the latest generation of the Vaisala HUMICAP® Sensor. Its proven reliable and high performance humidity measurement ability is combined with better than ever long-term stability. Additionally, a sensor that has been developed to cope with chemical interference is available to provide accuracy that lasts in demanding conditions.

Stable performance in demanding applications

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

Features/Benefits

- Multilingual user interface
- Shows measurement trends graphically
- Proven Vaisala HUMICAP® Sensor technology
- 3 probe alternatives, temperature measurement ranges between -70 and +180 °C
- Multiprobe operation; dewpoint and CO₂ probes can also be connected
- 2 probes can be connected simultaneously
- Displays various humidity parameters
- Sensor preheat and chemical purge options for demanding conditions
- Data can be logged, and transferred to a PC via MI70 Link software
- NIST traceable (certificate included)

PRICE:

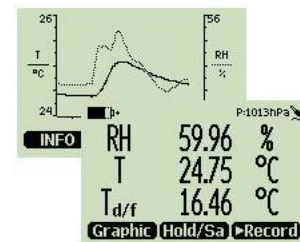
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Calibration

The meter is calibrated at the factory against traceable standards, and delivered with a calibration certificate. The HM70 is also available with accredited calibration. The HM70 probes can be sent to a Vaisala Service Center for a traceable recalibration.

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.



The graphic display shows the stabilization of measurements and process trends.

Technical Data

HMP75, HMP76 and HMP77 probes Measured variables

Relative humidity

Measurement range

0 ... 100 %RH

Accuracy (including nonlinearity, 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 uncertainty (+20 °C / +68 °F)

±0.6 %RH (0 ... 40 %RH)

±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)

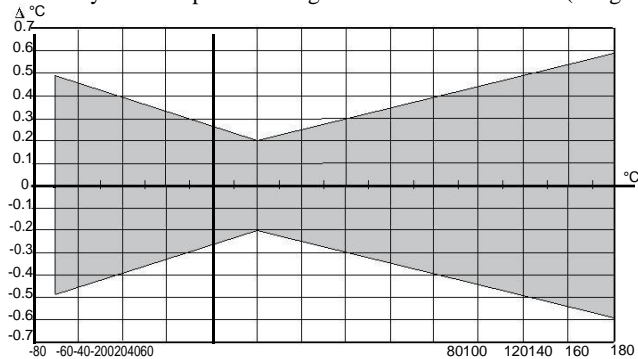
HMP76 -50 ... +120 °C (-58 ... +248 °F)

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 IEC751 1/3 class B

Calculated variables (typical ranges)

Dewpoint temperature -20 ... +100 °C (-4 ... +212 °F)

Mixing ratio 0 ... 600 g/kg dry air

Absolute humidity 0 ... 600 g/m³

Wet bulb temperature 0 ... 100 °C (+32 ... +212 °F)

Enthalpy 0 ... 160 kJ/g

Water vapor pressure 0 ... 1000 hPa

The accuracies of these calculated variables are limited by the accuracies of the measured variables on which they are based, namely RH and T. The RH and T accuracies are stated above under Measured Variables.

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

Weight

HMP75 250 g

HMP76 350 g

HMP77 500 g

MI70 measurement indicator

Indicator general

Menu languages English, Chinese, French, Spanish,

German, Russian, Japanese, Swedish, Finnish

Display LCD with backlight, graphic trend display of any parameter, character height up to 16 mm

Max. no of probes 2

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

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

Weight 400 g

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

MI70 indicator + probe = HM70

Accessories

Carrying cases

for MI70 and HMP75/77 probe MI70CASE

for MI70 and HMP75/76 probe MI70CASE2

Transmitter connection cables for

HMP230 Series 27159ZZ

HMT330 & HMT100 Series 211339

HM60/70/140 Series HMA6070

HM20/30/130 Series HMA2030

Mi70 Link software with USB cable 219687

Mi70 Link software with serial port cable MI70LINK

Analog output cable 27168ZZ

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

Dimensions

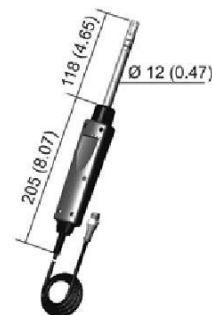
Dimensions in mm (inches)

HMP76



HMP77

HMP75



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HM70 Hand-held Humidity and Temperature Meter

		1	2	3	4	5	6	7	8	PRICE
Vaisala HUMICAP[®] Hand-Held Humidity and Temperature Meter		HM70			1					
1	Indicator type	no indicator * <i>rechargeable with Euro AC-adaptor</i>	A							
		<i>rechargeable with US AC-adaptor</i> (MI70USADAPTER + 26755)	B							
		<i>alkaline batteries only</i> (18950 (4 pieces))	D							
			K							
2	Indicator accessories	no indicator accessories								0
		<i>MI70LINK (software with RS232 cable)</i> (MI70LINK)				1				
		<i>analog output-signal cable</i> (27168ZZ)				2				
		<i>MI70LINK and analog output-signal cable</i> (MI70LINK + 27168ZZ)				3				
		<i>MI70LINK software with USB cable</i> (219687)				4				0
3	Probe type	<i>HMP75</i>						A		0
		<i>HMP75B (chemical purge and sensor preheating)</i>						F		0
		<i>HMP76</i>						B		0
		<i>HMP76B (chemical purge and sensor preheating)</i>						C		0
		<i>HMP77</i>						D		0
		<i>HMP77B (chemical purge and sensor preheating)</i>						E		0
4	Calibration	at room temperature							1	
5	Probe accessories	no accessories							A	5
		<i>probe holder for HMP76/76B**</i> (HM36915)							B	
6	Connection cable to a transmitter	no connection cable								0
		<i>connection cable to 60/70/140 series transmitters</i> (HMA6070)							1	0
		<i>connection cable to HMP230 series</i> (27159ZZ)							2	0
		<i>connection cable to 20/30/130 series transmitters</i> (HMA2030)							3	0
		<i>connection cable to HMT300 series / HMT100</i> (211339)							4	0
7	Carrying case	no carrying case								0
		<i>carrying case for indicator and probe (HMP75/77/77B)</i> MI70CASE							A	0
		<i>carrying case for indicator and probe (HMP75/76/76B/77/77B)***</i> MI70CASE2							B	0
									C	0
8	Manual language	no manual								A
		English								B
										TOTAL
										QTY
										TOTAL VALUE

* select item A, if only probe is ordered
 ** used in field calibration of duct 60/70 and 20/30 transmitter
 *** case for two probes

Selections in bold are included in the prices of the basic versions.
Selections in italic are available at an extra price.
 Shaded sections indicate typical selections.

Example of order code with typical settings:

HM70 D 4 A 1 A 0 B B

Accessories and Spare Parts:	Description:	Order Code:	PRICE
	US Adapter	MI70USADAPTER	0
	Battery NiMH 4.8 for MI70	26755	0
Probe Accessories:	HMP75		
	Plastic PC grid filter	6221	0
	Membrane filter	10159HM	0
	Sintered bronze filter	DRW212987SP	0
	HMP76/77		
	Plastic PPS grid filter	DRW010276SP	0
	Sintered stainless steel filter	HM47280SP	0
	Sintered bronze filter		
	(HMP76 standard)	DRW212987SP	0
	PPS grid with SS netting		
	(HMP77 standard)	DRW010281SP	0