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HMT100 Series Humidity and Temperature Transmitter for Demanding HVAC Applications

HMT100 remote probe and wall mount models.

Features/Benefits

- Full 0 ... 100 %RH measurement
- Two-wire loop-powered or three-wire voltage output configurations
- Fixed and remote probe models
- Display available
- Relative humidity, dewpoint, temperature outputs
- Vaisala HUMICAP® sensor
- Interchangeable probe module for minimal maintenance downtime
- Different output scalings
- Compatible with hand-held HM70 and HMI41 for one-point calibration
- IP65 (NEMA 4) housing
- NIST traceable (certificate included)

The Vaisala HUMICAP® Humidity and Temperature Transmitter Series HMT100 are designed for humidity and temperature monitoring in demanding environments.

Typical applications include stability rooms, HVAC, livestock farms, greenhouses, indoor swimming pools, and outdoor applications.

Performance

HMT100 incorporates Vaisala HUMICAP® technology that measures relative humidity accurately and reliably. Vaisala HUMICAP® is also resistant to dust and most chemicals. Vaisala has 30 years of experience in industrial humidity measurement.

Available options

The new HMT100 is available as a wall mount or remote probe model with an optional display. For high temperature applications or where space is limited, the remote probe is ideal.

You can order HMT100 with a configuration that best suits your needs. HMT100 can show relative humidity only, dewpoint only, or relative humidity and temperature, or dewpoint and temperature. The transmitter is available with one or two analog output channels depending on the selected parameters.

Interchangeable probe

The remote probe comes with a cable for which there are three options in length: 3 m, 5 m, or 10 m.

The probes are interchangeable and when changing them, the transmitter requires no calibration or adjustment, saving both time and costs.

Installation kits

HMT100 can also be installed outdoors using the kit especially designed for it or directly into an air conditioning channel using the duct installation kit.

Annual calibration

Calibration is recommended typically at an interval of one year using either the Vaisala HUMICAP®

Hand-held Humidity and Temperature Meter HM70 or the Vaisala HUMICAP® Humidity Indicator HMI41.

The accuracy of the instrument can also be checked using the Vaisala Humidity Calibrator HMK15, which is based on saturated salt solutions.

The Vaisala HUMICAP® Humidity and Temperature Transmitter Series HMT100 measure relative humidity or dewpoint, and temperature accurately in humid and wet environments.

Technical Data

Performance

Relative humidity

Measurement range	0 ... 100 %RH

Accuracy against factory standards including non-linearity, hysteresis, and repeatability

at +15 ... +25 °C	±1.7 %RH (0 ... 90 %RH)
	±2.5 %RH (90 ... 100 %RH)
at ±0 °C ... +40 °C	±(1.7+0.015 reading) %RH
at -40 ... ±0 °C, +40 ... +80 °C	±(2.0+0.025 reading) %RH
Factory calibration uncertainty at +20 °C (+68 °F)	±1.0 %RH (0 ... 15 %RH)
	±1.5 %RH (15 ... 78 %RH
Response time (90 %) at 20 °C in still air	8 s with plastic grid
	20 s with membrane filter
	40 s with sintered filter
Humidity sensor	Vaisala HUMICAP® 180

Temperature

Measurement range	-40 ... +80 °C (-40 ... 176 °F)
Accuracy at +20 °C (+68 °F)	±0.2 °C (±0.36 °F)

Accuracy over temperature range
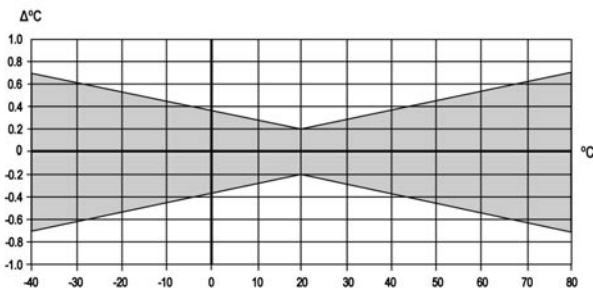
Temperature sensor	Pt1000 IEC 751 1/3 class B

Dewpoint temperature (calculated)

Measuring range	-20 ... +80 °C (-4 ... +176 °F)

Operating Environment

Operating temperature range	
transmitter body, no display	-40 ... +60 °C (-40 ... +140 °F)
transmitter body, with display	-30 ... +60 °C (-22 ... +140 °F)
sensor head (remote probe only)	-40 ... +80 °C (-40 ... +176 °F)
Storage temperature range	-40 ... +60 °C (-40 ... +140 °F)
Electromagnetic compatibility	EN61326-1:1197+Am1:1998;
	+ Am2:2001 Generic
	Environment

Inputs and Outputs

Two-wire output signal

	4 ... 20 mA
external loop load	10 ... 35 VDC (R_L = 0 ohms)
	20 ... 35 VDC (R_L = 500 ohms)

Voltage output signals

	0 ... 1 V, 0 ... 5 V, 0 ... 10 V
	(0 ... X V see order form)
supply voltage	10 ... 35 VDC/24 VAC
current consumption, 35 VDC/24 VAC	max. 12 mA
external load	R_L min. 10 kΩ

Mechanics

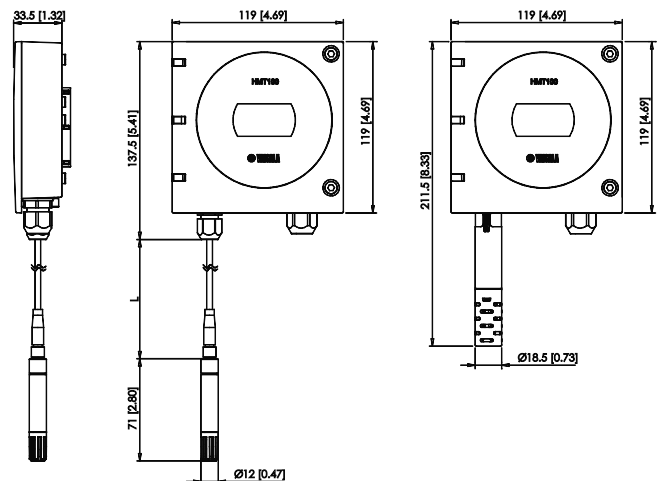|	
Material	
Housing	ABS/PC plastic
Probe	chrome coated aluminum
Mounting plate GM45160	ABS plastic
Housing classification	IP65 (NEMA 4)
Sensor protection	
Plastic grid	DRW010522
Plastic grid with membrane filter	DRW010525
Sintered stainless steel filter	HM46670SP
Connections	screw terminals 0.5 ... 1.5 mm²
Probe cable lengths	3 m, 5 m, 10 m
Calibration	with HM70, HMI41 with
	11 %RH & 75 %RH buttons or
	with up and down buttons
Display option	
One line, changing variable or fixed variables when two variables are ordered.	

Options and accessories

Spare probe	HMP100
Accessories	
Radiation shield	DTR502B
Rain shield with installation kit	215109
Installation plate	DRW010712
Duct installation kit	215619
Connection cable for HM70	HMA6070

Dimensions

Wiring Diagram

HMT100 Wiring

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Specifications are subject to change without prior notice.
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