

HMT330 Series Humidity and Temperature Transmitters for demanding humidity measurement



The HMT330 transmitter family has the solution for demanding industrial humidity measurements.

Features/Benefits

- Six models for demanding industrial applications
- Full 0 ... 100 %RH measurement, temperature range up to +180 °C (+356 °F) (depending on model)
- Pressure tolerance up to 100 bar (depending on model)
- Next generation Vaisala HUMICAP® Sensor for excellent accuracy and stability
- Graphical display of measurement trends and over four-year history
- Multilingual user interface
- Excellent performance in harsh chemical concentrations
- Corrosion resistant IP65 housing
- NIST traceable (certificate included)
- Analog outputs, WLAN/LAN

The Vaisala HUMICAP® Humidity and Temperature Transmitter Series HMT330 is designed for demanding industrial applications where stable measurement and wide customization is important.


Vaisala HUMICAP® performance

The HMT330 series incorporates Vaisala's 30 years of experience in industrial humidity measurement. An updated, even more stable and chemical resistant HUMICAP® sensor is available, next to the proven reliable and accurate sensor.

Chemical purge minimizes effects of contaminants

In environments with high concentrations of chemicals and cleaning agents, chemical purge helps to maintain measurement accuracy between calibration intervals.

Chemical purge involves heating the sensor to remove harmful chemicals. The function can be initiated manually or programmed to occur at set intervals.



Graphical display of history and measurement trends

The HMT330 can be ordered with a large numerical and graphical display, which allows the user to clearly monitor operational data, measurement trends and 1-year measurement history. The optional data logger with real-time clock makes it possible to generate over four years of measured history, and zoom in on any desired time or time frame. The battery backup of the clock guarantees a reliable logging of measured data.

The display alarm allows tracking of any measured parameter, with a freely configurable low and high limit.

Data collection and (wireless) transfer to PC

The recorded measurement data can be viewed on the display or transferred to a PC with Microsoft Windows® software. The transmitter can also be connected to a network with an optional (W)LAN interface, which enables a (wireless) Ethernet connection. A USB-RJ45 cable makes it easy to connect the service port of the HMT330 to a PC.

Many ways to install and versatile outputs

Mains and DC power options, and several mounting accessories make the instrument easy to install.

The HMT330 can have up to three

analog outputs. Isolated galvanic power supply and analog outputs are also available. For serial interface the USB connection, RS232 and RS485 can be used.

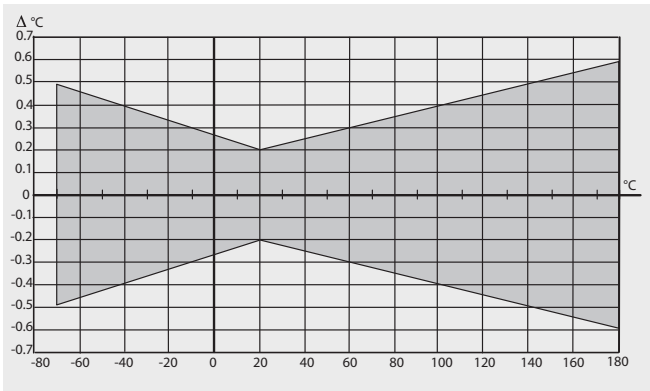
Flexible calibration

The HMT330 instruments are calibrated at six humidity points at the factory. A quick, one-point field calibration can be performed with the hand-held HM70 meter. A two-point calibration can be performed with the HMK15 salt bath calibrator in a controlled environment. The transmitter can be sent to Vaisala for recalibration. Accredited calibrations and maintenance contracts are also available.

Technical data

Performance

RELATIVE HUMIDITY	
Measurement range	0 ... 100 %RH
Accuracy (including non-linearity, hysteresis, and repeatability) with Vaisala HUMICAP® 180 or 180R for typical applications with Vaisala HUMICAP® 180C or 180RC for applications with chemical purge/warmed probe	± 1 %RH (0 ... 90 %) ± 1.7 %RH (90 ... 100 %RH) $\pm (1.0 + 0.008 \times \text{reading})$ %RH $\pm (1.5 + 0.015 \times \text{reading})$ %RH
at +15 ... +25 °C (59 ... +77 °F)	
at -20 ... +40 °C (-4 ... +104 °F)	
at -40 ... +180 °C (-40 ... +356 °F)	
Factory calibration uncertainty (+20 °C)	± 0.6 %RH (0 ... 40 %RH) ± 1.0 %RH (40 ... 97 %RH)
(Defined as ± 2 standard deviation limits. Small variations possible, see also calibration certificate.)	
Response time (90 %) at +20 °C (+68 °F) in still air	8 s / 17 s* with grid filter 20 s / 50 s* with grid + steel netting filter 40 s / 60 s* with sintered filter
* with HUMICAP® 180R or 180RC sensor	
TEMPERATURE	
Accuracy at +20 °C (+68 °F)	± 0.2 °C (± 0.36 °F)
Accuracy over temperature range (measurement range depends on model)	



Temperature sensor PT 100 RTD 1/3 Class B IEC 751

Other variables available (depends on model)

dewpoint temperature, mixing ratio, absolute humidity, wet bulb temperature, enthalpy, water vapor pressure

Inputs and outputs

Operating voltage	10 ... 35 VDC, 24 VAC
with optional power supply module	100 ... 240 VAC, 50/60 HZ
Power consumption at +20 °C (U_{in} 24 VDC)	
RS-232	max. 25 mA
U_{out} 2 x 0 ... 1 V/0 ... 5 V/0 ... 10 V	max. 25 mA
I_{out} 2 x 0 ... 20 mA	max. 60 mA
display and backlight	+ 20 mA
during chemical purge	max. 110 mA
during probe heating (HMT337)	+ 120 mA
Analog outputs (2 standard, 3rd optional)	
current output	0 ... 20 mA, 4 ... 20 mA
voltage output	0... 1 V, 0... 5 V, 0... 10 V
Accuracy of analog outputs at +20 °C	$\pm 0.05\%$ full scale
Temperature dependence of the analog outputs	$\pm 0.005\%/^{\circ}\text{C}$ full scale
External loads	
current outputs	$R_L < 500$ ohm
0 ... 1 V output	$R_L > 2$ kohm
0 ... 5 V and 0 ... 10 V outputs	$R_L > 10$ kohm
Max. wire size	0.5 mm ² (AWG 20)
	stranded wires recommended
Digital outputs	RS-232, RS-485 (optional)
Service connection	RS-232, USB
Relay outputs (optional)	0.5 A, 250 VAC
Ethernet interface (optional)	
Supported standards	10/100Base-T
Connector	RJ45
Protocols	Telnet
Software support	Vaisala MI70 link
WLAN interface (optional)	
Supported standards	802.11b
Antenna connector type	RP-SMA
Protocols	Telnet
Security	WEP 64/128, WPA
Software support	Vaisala MI70 link
Authentication / Encryption (WLAN)	
Open / no encryption	
Open / WEP	
WPA Pre shared key / TKIP	
WPA Pre shared key / CCMP (a.k.a. WPA2)	
Optional data logger with real-time clock	
Logged parameters	max. three with trend/min/max values
Logging interval	10 sec (fixed)
Max. logging period	4 years 5 months
Logged points	13.7 million points per parameter
Battery lifetime	min. 5 years
Display	LCD with backlight, graphic trend display of any parameter
Menu languages	English, Chinese, Japanese, Spanish, German, French, Swedish, Russian, Finnish

Mechanics

Cable bushing	M20 x 1.5 for cable diameter
Measurement range	8 ... 11 mm/0.31 ... 0.43"
Conduit fitting	1/2" NPT
User cable connector (optional)	M12 series 8-pin (male)
option 1	female plug with 5 m (16.4 ft) black cable
option 2	female plug with screw terminals
Probe cable diameter	
HMT333 (+80 °C)	6.0 mm
other probes	5.5 mm
Housing material	G-ALSi 10 Mg (DIN1725)
Housing classification	IP 65 (NEMA4)

Operating environment

Operating temperature	
for probe	same as measurement range
for transmitter body	-40 ... +60 °C (-40 ... 140 °F)
with display	0 ... +60 °C (32 ... 140 °F)
Electromagnetic compatibility	Complies with EMC standard EN61326-1, Industrial Environment

Mounting options



Mounting with Wall Mounting Kit



Mounting with DIN Rail Installation Kit



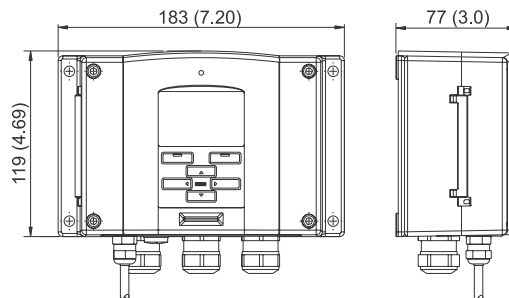
Pole Installation with Installation Kit for Pole or Pipeline



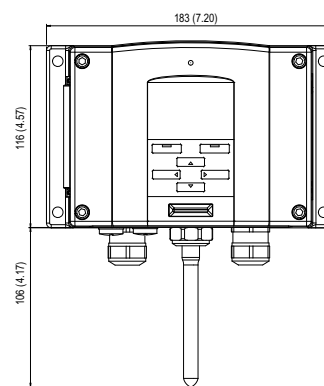
Mounting Rain Shield with Installation Kit

Dimensions

Dimensions in mm (inches)



Transmitter with WLAN antenna



VAISALA

For more information, visit www.vaisala.com or contact us at sales@vaisala.com

Ref. B210951EN-A ©Vaisala 2010

This material is subject to copyright protection, with all copyrights retained by Vaisala and its individual partners. All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. The reproduction, transfer, distribution or storage of information contained in this brochure in any form without the prior written consent of Vaisala is strictly prohibited. All specifications — technical included — are subject to change without notice.



TYPE APPROVED PRODUCT
CERTIFICATE NO.: A-11440

