

HMW90 Series Analog Humidity and Temperature Transmitters for High Performance HVAC Applications



The HMW90 Series Humidity and Temperature Transmitters are designed for demanding HVAC applications.

The wall-mounted Vaisala HMW90 Series HUMICAP® Humidity and Temperature Transmitters measure relative humidity and temperature in indoor environments, where high accuracy, stability, and reliable operation are required.

The flexible HMW90 series offers a variety of options and features. Transmitters include a display and a sliding cover with either a display opening or a solid front. Output options include special scalings and the following calculated parameters: dew point, mixing ratio, enthalpy, wet bulb temperature, dew point depression, and absolute humidity.



The sliding cover exposes offset trimmers and service port for calibration.

Install with Ease and Speed

The HMW90 series transmitters are quick and easy to install. The wiring is connected through the back plate and the electronics with the sensors can then be easily snapped on after wiring is completed.

Dip switches for transmitter configuration can be accessed when the enclosure is open. In the standard models the most common settings, such as metric/non-metric units, humidity/dew point parameter, and relay set-point, can be easily changed without special tools.

Choose from a Wide Variety of Calibration Options

On-site calibration and adjustment is exceptionally easy. The sliding lid exposes offset trimmers for 1-point calibration of both humidity and temperature parameters without disturbing the measurement. The included display makes adjustment clear and convenient by instantly indicating

Features/Benefits

- Easy installation, configuration, and field adjustment
- Vaisala HUMICAP® 180R Sensor with superior long-term stability
- Humidity parameter options: relative humidity, dew point, mixing ratio, enthalpy, wet bulb temperature, dew point depression, and absolute humidity
- Full 0 ... 100 %RH measurement range
- Up to ±1.7 %RH accuracy
- Special output scaling available
- One relay (voltage output models only)
- UL V0 materials
- User exchangeable humidity and temperature module
- NIST traceable calibration (certificate included)

Typical applications:

- Museums and archive facilities
- Production and warehouse facilities
- Data centers
- Laboratories
- Testing environments

the effects of changes. A service port enables 2-point calibration, using either a PC or the Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70. The HMW90 series transmitters include a user exchangeable measurement module, which can be ordered as a spare part. The module is delivered with a calibration certificate.

Calibration services are available through all Vaisala Service Centers.

Technical Data

Models

TMW92	Tonly	2-wire, current output
TMW93	Tonly	3-wire, voltage output
TMW90	Tonly	configurable model
HMW92	RH+T	2-wire, current output
HMW92D	RH+T	2-wire, current output with display
HMW93	RH+T	3-wire, voltage output
HMW93D	RH+T	3-wire, voltage output with display
HMW90	RH+T	configurable model

Performance

RELATIVE HUMIDITY

Measurement range 0 ... 100 %RH

Accuracy

Temperature range +10 ... +40 °C (+50 ... +104 °F)
 0 ... 90 %RH ±1.7 %RH
 90 ... 100 %RH ±2.5 %RH

Temperature range -5 ... +10 °C, +40 ... +55 °C
 (+23 ... +50 °F, +104 ... +131 °F)

0 ... 90 %RH ±3 %RH
 90 ... 100 %RH ±4 %RH

Stability in typical HVAC applications ±0.5 %RH/year

Humidity sensor Vaisala HUMICAP® 180R

TEMPERATURE

Measurement range -5 ... +55 °C (+23 ... +131 °F)

Accuracy

+20 ... +30 °C (+68 ... +86 °F) ±0.2 °C (± 0.36 °F)

+10 ... +20 °C, +30 ... +40 °C
 (+50 ... +68 °F, +86 ... +104 °F) ±0.3 °C (± 0.54 °F)

-5 ... +10 °C, +40 ... +55 °C
 (+23 ... +50 °F, +104 ... +131 °F) ±0.5 °C (± 0.90 °F)

Temperature sensor Digital temperature sensor

Operating Environment

Operating temperature range -5 ... +55 °C (+23 ... +131 °F)

Storage temperature range -30 ... +60 °C (-22 ... +140 °F)

Electromagnetic compliance Complies with EMC standard EN61326-1, Industrial Environment

Spare Parts and Accessories

Humidity and Temperature Module HTM10SP

Temperature Module (for Tonly models) TM10SP

Connection cable for HM70 hand-held meter 219980

USB cable for pc connection 219690

Mechanics

IP class IP30

Standard housing color White (RAL9003*)

Optional housing colors Black (RAL9005*)

(configurable models only) Grey (RAL7035*)

Light Ivory (RAL1015*)

Housing material ABS/PC, UL-V0 approved

Output connector Screw terminals

max. wire size 2 mm² (AWG14)

Service port connector 4-pin M8

Weight 155 g

*RAL code is only indicative with potential small variations in color shade

Inputs and Outputs

Current output models

Outputs 2 x 4 ... 20 mA, loop powered

Loop resistance 0 ... 600 Ω

Supply voltage 20 ... 28VDC at 500 Ω load

10 ... 28VDC at 0 Ω load

Isolation between output channels 500VDC

Voltage output models

Outputs 2 x 0...5V or 2 x 0...10V

Load resistance 10 kΩ min.

Supply voltage 18 ... 35VDC

24 VAC ±20 % 50/60 Hz

Max. current consumption 12 mA

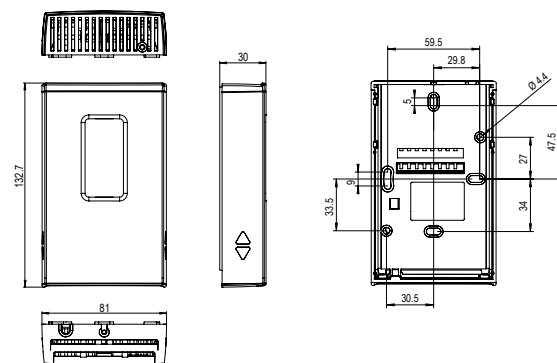
max. with relay 25 mA

Relay 1 pcs (max. 50VDC, 500 mA)

Service port RS-485 line for temporary service use

Dimensions

Dimensions in mm.



VAISALA



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