



# HMS110 Series Humidity and Temperature Transmitters

for High-Accuracy Outdoor Measurements in Building Automation Applications



## Features

- Reliable outdoor transmitters with integrated radiation shields
- $\pm 2$  %RH accuracy
- Proven HUMICAP® 180R sensor for long-lasting accuracy
- 3-point traceable calibration (certificate included)
- Default output parameters are relative humidity and temperature. Dew point temperature, wet bulb temperature, and enthalpy outputs selectable with a PC connection
- Current output (4 ... 20 mA)
- On-site calibration with HM70 Hand-Held Meter or PC connection
- Ingress protection IP65

Vaisala HMS110 Series HUMICAP® Humidity and Temperature Transmitters are designed for demanding outdoor measurements in building automation applications. These  $\pm 2$  % transmitters include an integrated radiation shield to reduce the influence of solar radiation on temperature and humidity measurements.

### Proven Vaisala HUMICAP® Performance for Outdoor Measurements

HMS110 transmitters are equipped with the trusted HUMICAP® 180R – a robust, general-purpose humidity sensor that functions well in high humidity. The sensor's superior stability ensures long-lasting accuracy and minimal maintenance throughout the transmitter's lifetime.

The integrated radiation shield allows unrivaled measurement performance, reducing the impact of sunshine on temperature and humidity measurements and ensuring measurement accuracy in outdoor conditions.

### Easy Installation and Maintenance

HMS110 transmitters are easy to install. They can be mounted directly onto a wall or pole without any extra accessories. There are no loose parts, screws are retained in the enclosure, all connectors are clearly labeled, and the connectors are within easy reach.

The HUMICAP® sensor's excellent long-term stability and high-quality materials ensure minimal need for maintenance. If necessary, the transmitter can be field-calibrated using either HM70 Hand-Held Humidity and Temperature Meter, or a PC connection.

# Technical Data

## Models

Model	Type	Output	IP Rating
HMS110	Outdoor, RH+T	2-wire, current output	IP65
HMS112	Outdoor, RH+T	2-wire, current output	IP65

HMS110 is delivered with customer specific output settings, including calculated humidity parameters and special scaling of outputs.

## Measurement Performance

### Relative Humidity

Measurement range	0 ... 100 %RH
Stability in typical HVAC applications	±0.5 %RH/year
Humidity sensor	Vaisala HUMICAP® 180R

Accuracy at temperature range +10 ... +30 °C (+50 ... +86 °F):

0 ... 90 %RH	±2 %RH
90 ... 100 %RH	±3 %RH

Accuracy at temperature range -20 ... +10 °C, +30 ... +60 °C (-4 ... +50 °F, +86 ... +140 °F):

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

Accuracy at temperature range -40 ... -20 °C (-40 ... -4 °F):

0 ... 100%RH	±4 %RH
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### Temperature

Measurement range	-40 ... +60 °C (-40 ... +140 °F)
Accuracy at +20 °C (+68 °F)	±0.2 °C (±0.36 °F)
Temperature dependence	±0.01 °C/°C
Temperature sensor	Pt1000 RTD Class F0.1 IEC 60751

### Calculated Parameters

Factory calibration uncertainty at 20 °C (+68 °F)	±1.5 %RH/±0.2 °C
Measurement range for dew point temperature and wet bulb temperature	-40 ... +60 °C (-40 ... +140 °F)
Measurement range for enthalpy	-40 ... 460 kJ/kg (-10 ... +190 BTU/lb)
Accuracy of the calculated parameters should be calculated at the actual condition based on the RH and temperaturespecification.	
Accuracy at 20 °C (68 °F) and 80 %RH:	
Dew point	±0.7 °C (1.2 °F)
Wet bulb temperature	±0.5 °C (0.9 °F)
Enthalpy	±1.6 kJ/kg (0.7 BTU/lb)

## Operating Environment

Operating temperature	-40 ... +60 °C (-40 ... +140 °F)
Operating humidity	0 ... 100 %RH
Maximum wind/flow speed	30 m/s (67 mph)
Storage temperature	-40 ... +60 °C (-40 ... +140 °F)
EMC compliance	EN61326-1, Industrial Environment

## Inputs and Outputs

Analog outputs	4 ... 20 mA, loop powered
Loop resistance	0 ... 600 Ω
Supply voltage	20 ... 28VDC at 600 Ω load 10 ... 28VDC at 0 Ω load
Data input for RDP100 Remote Panel Display	RS-485 Vaisala proprietary protocol

## Mechanical Specifications

Max. wire size	1.5 mm <sup>2</sup> (AWG 16)
Standard housing color	White (RAL9003)
Housing material	PC + 10 %GF (UL-V0 approved)

## Spare Parts and Accessories

Remote Panel Display	RDP100
Conduit fitting + O-ring (M16 × 1.5 / NPT1/2 Inch)	210675SP
Conduit fitting + O-ring (M16 × 1.5 / PG9, RE-MS)	210674SP
Fastening set HMS110	237805
Membrane Filter	ASM210856SP
Terminal Block, Blue	236620SP
USB cable for PC connection	219690
Connection cable for HM70 hand-held meter	219980SP
HUMICAP® 180R sensor	HUMICAP180R

