

HMD/W60/70 Humidity and Temperature Transmitters for HVAC Applications



Vaisala HUMICAP® Humidity and Temperature Transmitters HMD/W60 and HMD/W70 are designed for use in air conditioning applications where accurate and stable control of relative humidity and temperature are required.

The duct and wall-mounted Vaisala HUMICAP® Humidity and Temperature Transmitters HMD/W60 and HMD/W70 are designed for monitoring relative humidity and temperature in building energy management systems. The combination of high accuracy, stability and reliable operation, make these products the ideal choice for demanding applications.

Resistant to chemicals and dust

The duct mount HMD60 and HMD70 transmitters can also be used in many industrial humidity monitoring applications, where their stability and resistance to chemicals and dust are of great value. A novel feature of these duct mount transmitters is the ability to remove the electronics without removing the unit from the duct.

Measures both humidity and temperature

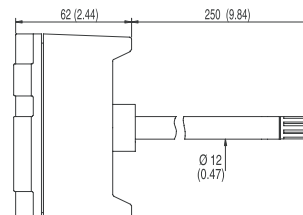
The HMD/W60 and HMD/W70 transmitters are available in three

models: U for humidity measurement-only, Y for humidity and temperature measurement, and T for temperature only.

Fast, on-site calibration

The accuracy of the transmitters is simple to check using either the Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70 or the Vaisala HUMICAP® Humidity Indicator HMI41. The calibration can be done in seconds with a single potentiometer without disturbing the operation, resulting in great savings both in maintenance time and costs.

Customized calibration and maintenance contracts are available on request.



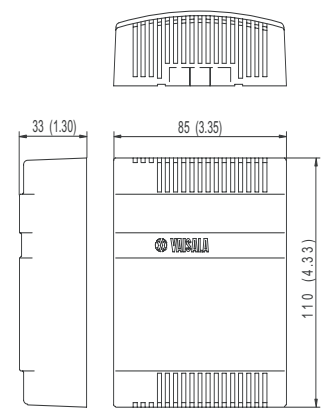
Features/Benefits

- Full 0...100 %RH measurement
- Accuracy up to ± 2 %RH
- True two-wire transmitters with 4...20 mA loop powered output (HMD60 and HMW60)
- Selectable signal output of 0...1 V, 0...5 V or 0...10 V (HMD70 and HMW70) with optional current module also 0...20 mA (HMD70)
- Vaisala HUMICAP® Sensor for excellent accuracy and long-term stability, negligible hysteresis and resistance to dust and most chemicals.
- Temperature compensated
- IP65 (NEMA 4) housing (duct unit only)
- Also available as temperature-only transmitters HMD/W 60T/70T
- NIST traceable (certificate included)
- Compatible with Vaisala HUMICAP® Hand-Held Humidity and Temperature Meter HM70

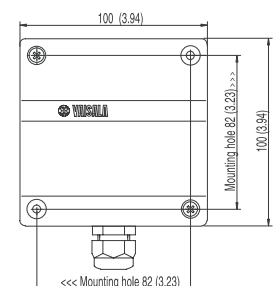
Dimensions

Dimensions in mm (inches)

HMW60/70



HMD60/70



Technical Data

60 series: 2-wire, 4 to 20 mA output

| | | |
|------------|---------|--------|
| Wall mount | RH only | HMW60U |
| | RH & T | HMW60Y |
| Duct mount | RH only | HMD60U |
| | RH&T | HMD60Y |

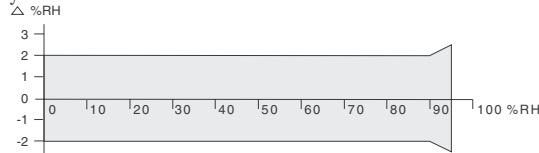
70 series: 3-wire, variable voltage output

| | | |
|------------|---------|--------|
| Wall mount | RH only | HMW70U |
| | RH & T | HMW70Y |
| Duct mount | RH only | HMD70U |
| | RH & T | HMD70Y |

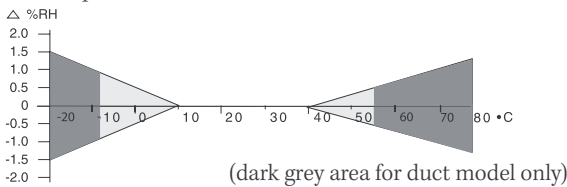
Relative humidity

| | |
|-------------------|--------------|
| Measurement range | |
| duct mount | 0...100 %RH* |
| wall mount | 0...95 %RH* |

Accuracy at +20 °C



Temperature dependence



Response time at +20 °C (+68 °F),

| | |
|--------------|-----------------------------|
| 90% response | 15 s (with membrane filter) |
| Sensor | HUMICAP® 180 |

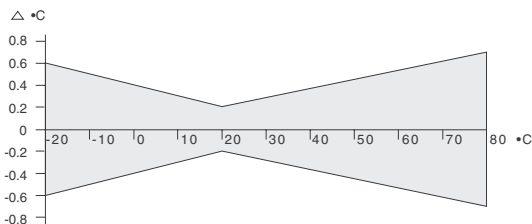
* Output signal corresponds to 0...100 %RH

Temperature (Y-models only)

| | |
|-----------|-------------------------|
| Linearity | better than 0.1 °C |
| Sensor | Pt 1000 IEC 751 class B |

HMD60Y and HMD70Y

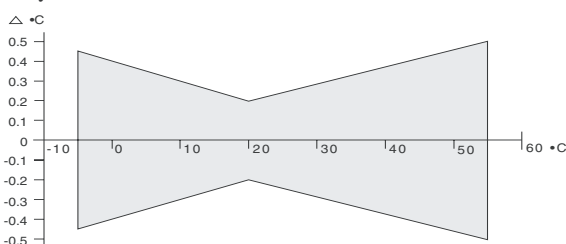
| | |
|-------------------|-------------------------------|
| Measurement range | -20...+80 °C (-4...176 °F) ** |
| Accuracy | |



HMW60Y and HMW70Y

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

Accuracy



** Optional temperature scales are available on request.

General - 60 series

| | |
|----------------|----------------------------|
| Supply voltage | 10...35 VDC (RL = 0 ohm) |
| | 20...35 VDC (RL = 500 ohm) |
| Output signal | 4...20 mA |

General - 70 series

| | | |
|--|-----------|---------------|
| Supply voltage range depends on the selected output signal | | |
| | DC | AC |
| 0...1V | 10...35 V | 9...24 V |
| 0...5 V | 14...35 V | 12...24 V |
| 0...10 V | 19...35 V | 16...24 V |
| **0...20 mA (RL = 0 ohm) | 10...35 V | 11...24 V |
| **0...20 mA (RL = 500 ohm) | 20...35 V | 17...24 V |
| ** HMD models only. | | |
| Power consumption @ 24 VAC | | |
| HMD/W70U | | 10 mA typical |
| HMD/W70Y | | 12 mA typical |

General

| | |
|---|--|
| Operating temperature range | |
| electronics | -5...+55 °C (+23...+131 °F) |
| sensor head (duct mount) | -20...+80 °C (-4...+176 °F) |
| Storage temperature range | -40...+80 °C (-40...+176 °F) |
| Long-term humidity range for electronics (wall mount) | 0...85 %RH |
| Housing | |
| sensor head (duct mount) | stainless steel |
| electronics (duct mount) | cast aluminum |
| electronics (wall mount) | ABS plastic |
| Connections | screw terminals 0.5...1.5 mm ² |
| Sensor protection (duct mount) | |
| standard | membrane filter (part no. DRW010525) |
| option | stainless steel sintered filter (part no. HM46670) |

For duct mount units:

| | |
|------------------------------|------------------|
| Cable thread-through | |
| bushing for 7...10 mm (PG9) | |
| cable housing IP65 (NEMA 4) | part no. 18941HM |
| or | |
| armoured cable glands | part no. 10528HM |
| (must be ordered separately) | |

For field check

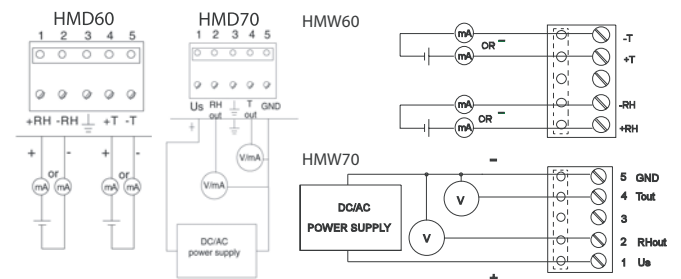
HM70 hand-held humidity and temperature meter or HMI41 humidity indicator

Complies with EMC standard EN61326-1:1997 + Am1:1998 + Am2:2001; Generic Environment.

Wiring

HMD60/70 wiring diagram

HMW60/70 wiring diagram



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