# VAISALA

# HMD42/53 Humidity and Temperature Transmitters for Ducts in Commercial HVAC Applications

The duct mounted Vaisala INTERCAP® Humidity and Temperature Transmitters HMD42 and HMD53 are designed for building automation applications. They combine reliable operation with excellent stability, providing low cost of ownership to the user.

## Flexibility in Humidity and Temperature Measurement

The HMD42/53 transmitters measure humidity with a ±3 %RH accuracy and temperature with a ±0.4 °C (±0.72 °F) accuracy. They feature various selectable analog output signals and they can be powered by either AC or DC voltage.

## Easy Maintenance

The HMD42/53 humidity transmitters use Vaisala INTERCAP® Sensor - the interchangeable capacitive humidity sensor. The transmitters require no recalibration if the sensor is changed. This means great savings in overall maintenance costs.

## Reliable Performance in Harsh Environments

The duct mount HMD42/53 transmitters can be installed in various measurement environments due to the robust IP65 (NEMA4) rated metal enclosure, which protects the sensor from dust and splashes of water. The wide measurement temperature range from -20 °C to +60 °C (-4 ... +140 °F) covers most HVAC applications.

## Typical Applications

- Office buildings

- Retail spaces

- Governmental buildings

- Educational facilities

- Sport and event complexes

- Hotels and conference centers

- Airports

- Metro stations

# Technical Data

## Relative Humidity

| | |
|---|---|
| Measurement range | 0 ... 100 %RH |
| Typical accuracy | |
| Temperature range | 0 ... +40 °C (+32 ... +104 °F) |
| 0 ... 90 %RH | ±3 %RH |
| 90 ... 100 %RH | ±5 %RH |
| Temperature range | -20 ... 0 °C, +40 ... +60 °C |
| | (-4 ... +32 °F, +104 ... +140 °F) |
| 0 ... 90 %RH | ±5 %RH |
| 90 ... 100 %RH | ±7 %RH |
| Humidity sensor | Vaisala INTERCAP® |
| Stability | ±2 %RH / 2 years |
| Response time at 20 °C (+68 °F), 90 % response | 15 s |

## Temperature

| | |
|---|---|
| Measurement range | -20 ... +60 °C (-4 ... +140 °F) |
| Output scale | -40 ... +60 °C (-40 ... +140 °F) |
| Accuracy | |
| 0 ... +40 °C (+32 ... +104 °F) | ±0.4 °C (±0.72 °F) |
| -20 ... 0 °C, +40 ... +60 °C | |
| (-4 ... +32 °F, +104 ... +140 °F) | ±0.6 °C (±1.1 °F) |
| Sensor | Pt1000 RTD Class F0.3 IEC 60751 |

## General - HMD42

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

## General - HMD53

Supply voltage range depends on the selected output signal

| | DC | AC |
|---|---|---|
| 0 … 1V | 10 … 35V | 9 … 24V |
| 0 … 5V | 14 … 35V | 12 … 24V |
| 0 … 10V | 19 … 35V | 16 … 24V |
| WITH OPTIONAL CURRENT MODULE | | |
| 0 ... 20 mA ($R_L$ = 0 ohm) | 10 … 35V | 11 … 24V |
| **0 … 20 mA ($R_L$ =500 ohm) | 20 … 35V | 17 … 24V |
| Power consumption @ 24VAC | | 12mA typical |

**Optional temperature scales are available on request.

## General

| | |
|---|---|
| Operating temperature range | |
| electronics | -5 ... +55 °C (+23 ... +131 °F) |
| probe | -20 ... +60 °C (-4 ... +140 °F) |
| Storage temperature range | -40 ... +60 °C (-40 ... +140 °F) |
| Maximum flow speed | 50 m/s |
| Housing material | |
| probe | stainless steel |
| electronics | cast aluminium |
| Housing classification | IP65 (NEMA 4) |
| Connections | screw terminal 0.5 ... 1.5 mm² |
| Cable thread-through bushing for 7 ... 10 mm | |
| (PG9) included | (18941HM) |
| Complies with EMC standard EN61326 and EN55022 | |

## Accessories

| | |
|---|---|
| Armoured cable gland | 10528HM |
| Current module (for HMD53) | 18945HM |

## Spare Parts

| | |
|---|---|
| Vaisala INTERCAP sensor, 1 piece | 15778HM |
| Vaisala INTERCAP sensor, 10 pcs | INTERCAPSET-10PCS |
| Membrane filter | DRW010525 |
| Sintered filter | HM46670SP |

## Dimensions

Dimensions in mm