HMD60 Series Humidity and Temperature Transmitters
For Demanding HVAC and Light Industrial Applications

**Features**

- Measurement accuracy up to ±1.5 %RH and ±0.1 °C (±0.18 °F)
- 4 ... 20 mA analog outputs: HMD62 (RH and T) and TMD62 (T-only)
- 0 ... 10 V analog outputs: HMD65 (RH and T)
- BACnet MS/TP and Modbus RTU: HMD65
- All common humidity parameters available, including RH, dew point, enthalpy, and wet bulb temperature
- Resistant to chemicals and dust
- IP66-rated body
- Traceable calibration certificate
- Easy field adjustment and output configuration with quick access to electronics also when installed
- Compatible with Vaisala Insight PC software

The duct mounted HMD60 series HUMICAP® transmitters HMD62, TMD62, and HMD65 are designed for light industrial applications and demanding HVAC applications such as museums, cleanrooms, and laboratories.

**Analog or Digital Output with 3 Transmitter Options**

HMD60 series transmitter options:
- HMD62: RH and T measurement, 4 ... 20 mA analog output
- TMD62: T-only transmitter, 4 ... 20 mA analog output
- HMD65: RH and T measurement, 0 ... 10 V analog output, Modbus RTU, and BACnet MS/TP

**Robust Design, Stability, and Reliability**

The all-metal body is suitable for building sites and industrial settings. HMD60 series transmitters provide state-of-the-art stability and environmental resistance, thanks to the Vaisala HUMICAP® R2 sensor.

For applications where hydrogen peroxide disinfection is used, the HUMICAP® 180V catalytic sensor option provides improved stability during H₂O₂ exposure.

**Traceable Accuracy**

HMD60 series transmitters are always delivered with a traceable (ISO9001) calibration certificate. Upon request, accredited (ISO17025) calibration certificates can also be provided.

**Field Configurable Outputs**

The analog HMD62 and TMD62 transmitter models use floating 4 ... 20 mA loop powered outputs. The HMD65 model has two 0 ... 10 V outputs in addition to BACnet MS/TP and Modbus RTU interfaces (RS-485). The analog outputs are field configurable with easy humidity parameter selection using DIP switches.

For special scaling and other additional configuration and adjustment options, you can use the convenient Vaisala Insight PC software for Windows® (see www.vaisala.com/insight). When required, HMD60 series transmitters can also be intuitively field adjusted using trimmers or with the Vaisala HM70 handheld meter.
Relative Humidity Measurement Performance

### Humidity Sensor Options

**HUMICAP® R2**
- Latest generation industrial sensor with improved corrosion resistance

**HUMICAP® 180V**
- Humidity sensor with a catalytic surface for processes with H₂O₂

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- Humidity sensor with a catalytic surface for processes with H₂O₂

**Measurement range**
- 0 ... 100 %RH

**Stability**
- ±0.5 %RH/year in typical HVAC applications

**Accuracy at 0 ... +40 °C (+32 ... +104 °F)**
- 0 ... 90 %RH ±1.5 %RH
- 90 ... 100 %RH ±2.5 %RH

**Accuracy at +40 ... +80 °C (+140 ... +176 °F) and -40 ... 0 °C (-40 ... +32 °F)**
- 0 ... 90 %RH ±2.5 %RH
- 90 ... 100 %RH ±3.5 %RH

**Factory calibration uncertainty**
- ±1.0 %RH

**Start-up and Response Time**

- **Start-up time at +20 °C (+68 °F)**: 8 s
- **Response time (T63) at +20 °C (+68 °F)**: 15 s

**Calculated Humidity Parameters (Default Analog Output Scale)**

- **Dew point**
  - -40 ... +80 °C (-40 ... +176 °F)

- **Dew point / frost point**
  - -40 ... +80 °C (-40 ... +176 °F)

- **Absolute humidity**
  - 0 ... 500 g/m³ (0 ... 131.1 gr/ft³)

- **Enthalpy**
  - -40 ... +1600 kJ/kg (-9.5 ... +695.6 Btu/lb)

- **Mixing ratio**
  - 0 ... 600 g/kg (0 ... 4200 gr/lb)

**Accuracy at +20 °C (68 °F):**
- ±0.01 mA (HMD62 and TMD62)
- ±5 mV (HMD65)

**Temperature dependence:**
- ±0.0008 mA/°C (HMD62 and TMD62)
- ±0.002 mV/°C (HMD65)

### Temperature Measurement Performance

**Temperature sensor**
- Pt1000 RTD Class F 0.1 IEC 60751

**Measurement range**
- -40 ... +80 °C (-40 ... +176 °F)

**Accuracy at +20 °C (+68 °F)**
- ±0.1 °C (0.18 °F)

**Temperature dependence**
- ±0.005 °C/°C

**Factory calibration uncertainty**
- ±0.1 °C (0.18 °F)

**Response time (T63) with free convection**
- 8 min

### Analog Output Performance

**Accuracy at +20 °C (68 °F):**
- ±0.01 mA (HMD62 and TMD62)
- ±5 mV (HMD65)

**Temperature dependence:**
- ±0.0008 mA/°C (HMD62 and TMD62)
- ±0.002 mV/°C (HMD65)

### Operating Environment

- **Operating temperature, electronics**
  - -40 ... +60 °C (-40 ... +140 °F)

- **Operating temperature, probe**
  - -40 ... +80 °C (-40 ... +176 °F)

- **Storage temperature range**
  - -40 ... +60 °C (-40 ... +140 °F)

- **Maximum flow speed**
  - 50 m/s with sintered filter

- **Electromagnetic compatibility**
  - EN61326-1, Industrial Environment

### Inputs and Outputs

#### Power supply input
- HMD62 and TMD62: 10 ... 35 VDC (RL = 0 Ω)
- 20 ... 35 VDC (RL = 600 Ω)

#### Power consumption (HMD65)
- 1.0 W (typical, for both AC and DC)

#### Analog outputs
- TMD62: 1 × T output 4 ... 20 mA
- HMD62: 1 × RH output 4 ... 20 mA, 1 × T output 4 ... 20 mA

#### Digital output (RS-485)
- HMD65: Isolated, supports Modbus RTU and BACnet MS/TP protocols

#### BACnet MS/TP
- Address range: 0 ... 127 (master mode only)

#### Modbus RTU
- Address range: 1 ... 247

#### Service port
- MB 4-pin male connector:
  - M170 handheld indicator (requires cable 219980SP)
  - Vaisala Insight PC software (requires USB cable 219690)

#### Screw terminal wire size
- 0.5 ... 2.5 mm²

### Spare Parts and Accessories

- **USB cable for PC operation (Vaisala Insight software)**: 219690
- **Connection cable for HM70 (M170) handheld meter**: 219980SP
- **Membrane filter**: ASM212652SP
- **Sintered filter**: HM46670SP
- **Sintered teflon filter**: DRW244938SP
- **Conduit fitting and O-ring (M16×1.5 / NPT/2")**: 210675SP

### Mechanical Specification

- **Housing material**: Cast aluminum
- **Probe material**: Stainless steel
- **IP rating**: IP66 (NEMA 4X)
- **Weight**: 511 g (18 oz)

### HMD60 Dimensions (Long and Short Probe Options)
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