Vaisala HUMICAP® Humidity and Temperature Transmitters HMT120 and HMT130 are designed for humidity and temperature monitoring in cleanrooms and are also suitable for demanding HVAC and light industrial applications.

**Options**
- Humidity parameter options: relative humidity, dew point/frost point, wet bulb temperature, enthalpy, absolute humidity, mixing ratio, vapor pressure, and saturation vapor pressure
- 2-wire loop-powered or 3-wire voltage output configurations
- Optional LCD display
- USB cable available for a PC connection for maintenance
- Wall-mounted or with a remote probe
- Constant output probe available
- Can be mounted outdoors using a Vaisala installation kit and the Vaisala Radiation Shield DTR504A

**Features**
- Vaisala HUMICAP® technology with humidity sensor HUMICAP® 180R
- Interchangeable probe (easy field calibration)
- Accurate and reliable
- Resistant to dust and most chemicals
- Enclosure IP65
- 3-point traceable calibration (certificate included)
- Suitable for cleanrooms and demanding HVAC and light industrial applications

**Performance**
HMT120/130 incorporates Vaisala HUMICAP® technology that measures relative humidity accurately and reliably. Vaisala HUMICAP® is resistant to dust and most chemicals.

The transmitter enclosure is optimized for use in cleanrooms. The smooth surface of the enclosure makes it easy to clean and the enclosure material is chosen to tolerate purifying agents. Furthermore, the cabling can be done through the back wall of the transmitter.

**Interchangeable Probe**
The HMT120/130 transmitters use a fully interchangeable relative humidity probe. The probe can be easily removed and replaced with a new one without having to adjust the transmitter, which allows for easy and quick recalibration of the transmitter. The probe can be adjusted using one of Vaisala’s portable meters as a reference.

Also available is a constant output probe with fixed RH and T output for convenient inspection of the monitoring system and signal transfer line.

**Available Options**
The HMT120 and HMT130 transmitters are available as wall mounted or with a remote probe. For high temperature applications or where space is limited, the remote probe is ideal. The optional LCD display shows the measurement results of selected parameters in selected units. The parameters are displayed simultaneously at two separate rows on the display.
Technical Data

**Measurement Performance**

**Relative Humidity**

- **Measurement range**: 0 … 100 %RH
- **Accuracy (including non-linearity, hysteresis, and repeatability)** at 0 … +40 °C (+32 … +104 °F):
  - 0 … 90 %RH
  - 90 … 100 %RH
  - ±1.5 %RH
  - ±2.5 %RH
- **Accuracy (including non-linearity, hysteresis, and repeatability)** at -40 … +80 °C (-40 … +176 °F):
  - 0 … 90 %RH
  - 90 … 100 %RH
  - ±3.0 %RH
  - ±4.0 %RH
- **Factory calibration uncertainty at +20 °C (+68 °F)**:
  - 0 … 90 %RH
  - 90 … 100 %RH
  - ±1.1 %RH
  - ±1.8 %RH

**Humidity sensor**

Vaisala HUMICAP 180R

**Stability**

- ±2 %RH over 2 years
- ±0.5 %RH per year

**Temperature**

- **Measurement range**: -40 … +80 °C (-40 … 176 °F)
- **Accuracy over Temperature Range**:
  - At +15 … +25 °C (+59 … +77 °F) ±0.1 °C (±0.18 °F)
  - At 0 … +15 °C and at +25 … +40 °C (±32 … +59 °F and +77 … +104 °F) ±0.15 °C (±0.27 °F)
  - At -40 … +10 °C and at -40 … +80 °C (-40 … +32 °F and +104 … +176 °F) ±0.4 °C (±0.72 °F)

**Temperature sensor**

Pt1000 RTD Class F0.1 IEC 60751

**Other Variables (Optional)**

- Dew point/frost point, wet bulb temperature, enthalpy, absolute humidity, mixing ratio, vapor pressure, and saturation vapor pressure

**Inputs and Outputs**

**HMT120 Two-wire Transmitter (Loop Powered)**

- Current output signals: 4 … 20 mA
- External loop voltage:
  - 10 … 30 VDC (RL = 0 Ω)
  - 20 … 30 VDC (RL < 500 Ω)

**HMT130 Three-wire Transmitter**

- Voltage output signals:
  - 0 ... 1 V, 0 ... 5 V, 0 ... 10 V or user defined between 0 ... 10 V
- Min. output resistance: 1 kΩ
- Serial output: RS-485, non-isolated
- Relay output: 1 relay (max. 50 VDC, 200 mA)
- Supply voltage:
  - 10 ... 35 VDC
  - 15 ... 35 VDC (when output 0 ... 10 V)
  - 24 VAC (±20 %)
- Current consumption at 24 VDC: 8 mA, if relay closed 15 mA
- Max. additional error caused by the analog outputs after calibration at +20 °C (+68 °F) ambient temperature: ±0.1 % of FS output signal
- Temperature dependence of the analog outputs: ±0.005 % of FS output signal

**Operating Environment**

- Operating temperature of transmitter body, no display: -40 … +60 °C (-40 … +140 °F)
- Operating temperature of transmitter body with display: -20 … +60 °C (-4 … +140 °F)
- Operating temperature, HMP110 probe: -40 … +80 °C (-40 … +176 °F)
- Storage temperature: -50 … 70 °C (-58 … +158 °F)
- EMC compliance: EN 61326-1 and EN 55022

**Mechanical Specifications**

- **IP rating**: IP65
- **Weight**: 270 g (9.5 oz)
- **Probe cable lengths**: 3 m, 5 m, 10 m - up to 50 m (9.8 ft, 16 ft, 33 ft - up to 164 ft)
- **Display (optional)**: 128 x 64 resolution full graphics B&W display without backlight

**Material**

- Transmitter housing: PBT plastic
- Display window: PC plastic
- Probe body: Stainless steel (AISI 316)
- Probe grid filter: Chrome coated ABS plastic

**Connections**

- Inputs and outputs: Screw terminals 0.5 ... 1.5 mm² (AWG 20 ... AWG 15)
- Probe interface: 4-pin M8 female panel connector

**Spare Parts and Accessories**

- Humidity and temperature probe: HMP110
- Humidity and temperature replacement probe: HMP110R
- Constant output probe: HMP110REF
- Standard humidity sensor: HUMICAP18OR
- Catalytic humidity sensor for H₂O: HUMICAP180V
- Probe mounting flange: 226061
- Probe mounting clamps, 10 pcs: 226067
- Probe cable 3 m (9.8 ft): HMT120Z300
- Probe cable 5 m (16 ft): HMT120Z500
- Probe cable 10 m (33 ft): HMT120Z1000
- Probe cable 20 m (66 ft): HMT120Z2000
- Radiation shield: DTR504A
- Rain shield with installation kit: 215109
- Duct installation kit: 215619
- HM70 connection cable: 211339
- USB serial interface cable: 219685
- HMP110 Sensor Protection
  - Plastic grid filter: DRW010522SP
  - Plastic grid with membrane filter: DRW010525SP
  - Stainless steel sintered filter: HM46670SP
  - Teflon sintered filter: DRW244938SP

*See separate order form*
Transmitter dimensions in mm (inches)

Remote probe dimensions in mm (inches)