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.

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

**Performance**
The HMT120 and HMT130 transmitters incorporate Vaisala HUMICAP® sensor technology that measures relative humidity accurately and reliably. Vaisala HUMICAP® sensors are resistant to dust and most chemicals.
The HMT120 and HMT130 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, cabling can be done through the back wall of the transmitter.

**Interchangeable Probe**
The HMT120 and HMT130 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 handheld 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**
1) Including non-linearity, hysteresis, and repeatability.
2) With HUMICAP â"180V sensor, accuracy is specified only in operating temperature −20 ... +80 °C (−4 ... +176 °F).

- At 0 … +40 °C (+32 ... +104 °F)
  ±1.5 %RH (0 ... 90 %RH)
  ±2.5 %RH (90 ... 100 %RH)

- At −40 … 0 °C and +40 … +80 °C
  (−40 ... +32 °F and +104 ... +176 °F)
  ±3.0 %RH (0 ... 90 %RH)
  ±4.0 %RH (90 ... 100 %RH)

**Factory calibration uncertainty at +20 °C (+68 °F)**

- ±1.1 %RH (0 ... 90 %RH)
- ±1.8 %RH (90 ... 100 %RH)

#### Humidity sensor types

- Vaisala HUMICAP â"180R
- Vaisala HUMICAP â"180V

#### Stability

- ±2 %RH over 2 years
- Stability in typical HVAC applications ±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 +25 … +40 °C
  (+32 … +59 °F and +77 … +104 °F)
  ±0.15 °C (±0.27 °F)

- At −40 … +0 °C and +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 2-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 3-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
- 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 and 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

### Spare Parts and Accessories

- **Humidity and temperature probe** HMP110
- **Humidity and temperature replacement probe** HMP110R
- **Constant output probe** HMP110REF
- **Standard humidity sensor** HUMICAP180R
- **Catalytic humidity sensor for H2O2** HUMICAP180V
- **Probe mounting flange** Z26061
- **Probe mounting clamps, 10 pcs** Z26067
- **Probe cable 3 m (9.8 ft)** Z1T2500
- **Probe cable 5 m (16 ft)** Z1T2500
- **Probe cable 10 m (33 ft)** Z1T2500
- **Probe cable 20 m (66 ft)** Z1T22000
- **Radiation shield** DTR504A
- **Rain shield with installation kit** Z21509
- **Duct installation kit** Z215619
- **HM70 connection cable** Z21339
- **USB serial interface cable** Z29685

**HMP110 Sensor Protection**

- Plastic grid filter DW010522SP
- Plastic grid with membrane filter DW010525SP
- Stainless steel sintered filter HM46670SP
- Teflon sintered filter DW244938SP

1) See separate order form.
2) With HUMICAP â"180V sensor, accuracy is specified only in operating temperature −20 ... +80 °C (−4 ... +176 °F).