The HMP45A and HMP45D humidity and temperature probes are excellent for measuring humidity in weather stations.

**Versatile probes**

The Vaisala HUMICAP® Humidity and Temperature Probes HMP45A and HMP45D are designed for a wide range of instrumentation (e.g. recorders, data loggers, laboratory equipment and weather stations.)

The probes interface easily, are simple to service, operate from a wide range of supply voltages and consume little power.

The HMP45A/D is an excellent solution for measuring humidity in weather stations. However, the Vaisala HUMICAP® Humidity and Temperature Transmitter HMP337, with warmed sensor head, is a better solution if condensation continuously disturbs measurement.

**Vaisala HUMICAP® Sensor**

The combined performance of the Vaisala HUMICAP® Sensor and IP65 (NEMA 4) protected probe provides accurate and repeatable humidity and temperature measurements in high humidity.

**Easy field maintenance**

Field calibration is easy. The probe head containing the sensor and electronics can be quickly removed from the probe body, a replacement installed and the measurements continued while the other sensor head is calibrated in a laboratory.

**On-site, one-point calibration**

One-point calibration of relative humidity and temperature can be done in the field using Vaisala HUMICAP® Humidity Indicator HM41.

**Shield protects sensor**

Vaisala Radiation Shield DTR503A is a naturally ventilated, maintenance-free, 12 plate plastic shield that protects the humidity and temperature sensors from both scattered and direct solar radiation, and precipitation. The plastic material in the plates offers excellent thermal characteristics and UV stabilized construction. The white outer surface reflects radiation, while the black inside absorbs accumulated heat.

The shield is easy to install and is suitable for a wide range of applications. It can be installed on a vertical pole, horizontal beam, or flat surface.

**Features/Benefits**

- Vaisala HUMICAP® Humidity and Temperature Probes HMP45A/D provide up to 100 %RH with high accuracy
- Vaisala HUMICAP® Sensor for excellent accuracy, negligible hysteresis and long-term stability in high humidities, and is resistance to dust and most chemicals.
- Easy field calibration
- Vaisala Solar Radiation Shield DTR503A
- IP65 (NEMA 4) housing protects against dust, water spray, and electromagnetic interference.
- NIST traceable (certificate included)

**Dimensions**

Dimensions in mm.

DTR503A for the HMP45A/D

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>(233)</th>
<th>(427)</th>
<th>(0105)</th>
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<tbody>
<tr>
<td>DTR503A pole mast installation.</td>
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DTR503A horizontal beam installation.

Vaisala Product Catalog 2005

Ref. B210435en rev. A
## Technical Data

### General
- **Operating temperature range**: -40...+60 °C (-40...+140 °F)
- **Storage temperature range**: -40...+80 °C (-40...+176 °F)
- **Supply voltage**: 7...35 VDC
- **Settling time**: 500 ms
- **Power consumption**: <4 mA
- **Output load**: >10kohm (to ground)
- **Weight**: 350 g (incl. package)
- **Cable length**: 3.5 m
- **Housing material**: ABS plastic
- **Housing classification (electronics)**: IP65
- **Sensor protection**: standard: membrane filter part no.2787HM
  optional: grid part no. 6597

### Relative humidity

#### HMP45A & HMP45D
- **Measuring range**: 0.8 to 100 %RH
- **Output scale**: 0...100 %RH equals 0...1 VDC
- **Accuracy at +20 °C (+68 °F)**
  - against factory references ±1 %RH
  - field calibration against references ±2 %RH (0...90 %RH)
  - ±3 %RH (90...100 %RH)
- **Typical long-term stability**: ±1 %RH / year
- **Response time (90% at +20 °C)**: 10 s with membrane filter
- **Humidity sensor**: HUMICAP® 180

#### Temperature

##### HMP45A
- **Measurement range**: -39.2...+60 °C (-39.2...+140°F)
- **Output scale**: -40...+60 °C (-40...+140 °F) equals 0...1 VDC
- **Accuracy at +68 °F (+20 °C)**: ±0.2 °C (±0.36 °F)

##### HMP45D
- **Measurement range**: -40...+60 °C (-40...+140 °F)
- **Output signal**: resistive four wire connection
- **Temperature sensor**: Pt 100 IEC 751 1/3 Class B


### Dimensions

Dimensions in mm.

### HMP45A/D connections

![HMP45A/D connections diagram]

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Specifications subject to change without prior notice.

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