

## HMP45A & HMP45D Relative Humidity and Temperature Probes; Solar Radiation Shield

### VERSATILE PROBES

The HMP45A and HMP45D humidity and temperature probes are designed for a wide range of instrumentation e.g. recorders, data loggers, laboratory equipment and weather stations.\* They interface easily and are simple to service.

### RELIABLE PERFORMANCE IN DEMANDING ENVIRONMENTS

The HMP45A and HMP45D provide up to 100% RH measurement with high accuracy. Both feature Vaisala's HUMICAP®180 sensor, one of the most reliable sensors on the market. The sensor can be used in a wide range of environments, has high accuracy, negligible hysteresis and excellent long-term stability - even in very high humidities. It is insensitive to dust and tolerant to most chemicals.

### 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. If necessary, the humidity and temperature readings in the HMP45A can be checked with Vaisala's HMI41 humidity indicator on site. Routine checks and calibrations can be made without interrupting measurements for long periods of time.

The combined performance of the HUMICAP®180 sensor and improved NEMA 4 protected probe enables you to make accurate and repeatable humidity and temperature measurements with confidence. These probes can be operated from a wide range of supply voltages and have low power consumption. Combine these features with the probes' wide temperature range, temperature compensation and full-scale humidity range and you have a versatile solution for many applications.

### SHIELD PROVIDES SENSOR PROTECTION

Vaisala also offers the 2212HM shield to protect the humidity and temperature sensors from solar radiation and precipitation. It provides excellent ventilation while blocking direct and reflected solar radiation. The 2212HM's flexible fastening system makes probe installation simple, and an offset U-bolt makes mounting equally as easy.

\*The HMP45A/D is an excellent solution for measuring humidity in weather stations. However, the HMP 243, with warmed sensor head, is a better solution if condensation continuously disturbs measurement.



*HMP45A & HMP45D humidity and temperature probes for meteorological applications provide EMI/RF protection.*



*2212HM shield provides protection from solar radiation and precipitation.*

## TECHNICAL DATA - HMP45A, HMP45D, 2212 HM

### General

Operating temperature range	-40...+140 °F (-40...+60 °C)
Storage temperature range	-40...+176 °F (-40...+80 °C)
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)	NEMA 4 (IP 65)
Sensor protection	standard
option	membrane filter part no.2787HM sintered filter 37 µm part no. 6685 sintered filter 216 µm part no. 6686 grid, part no. 6597

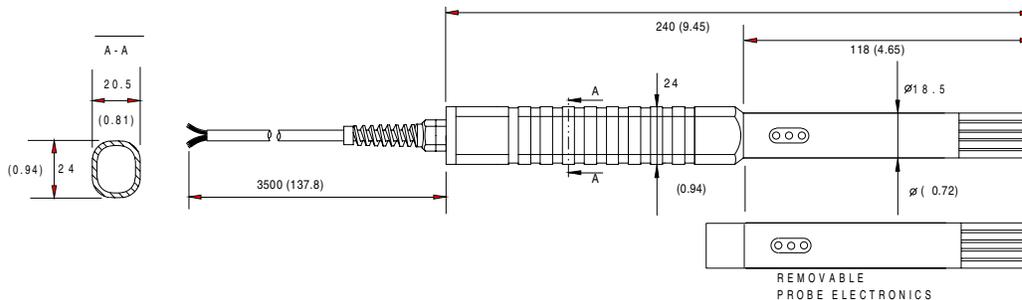
### Relative Humidity

#### HMP45A & HMP45D

Measuring range:	0.8 to 100% RH
Output scale	0...100% RH equals 0...1 VDC
Accuracy at +68 °F (+20 °C) (incl. nonlinearity and hysteresis) 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
Temperature dependence	±0.03% RH/°F (±0.05% RH/ °C)
Response time (90% at +68 °F (+20 °C))	10 s with membrane filter
Humidity sensor	HUMICAP® 180

### HMP45A/D

Dimensions in mm (inches)

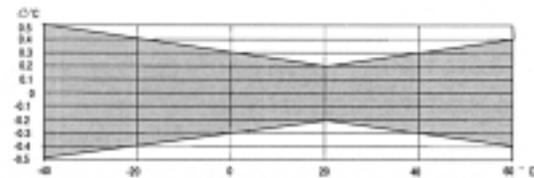


### Temperature

#### HMP45A

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

Accuracy over measurement range:



Temperature sensor	Pt 1000 IEC 751 1/3 Class B
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#### HMP45D

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

Specifications subject to change without prior notice.

