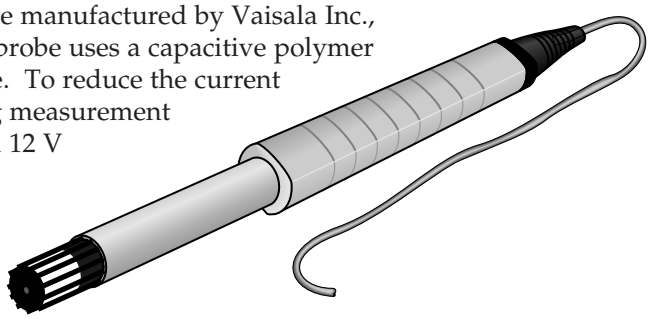
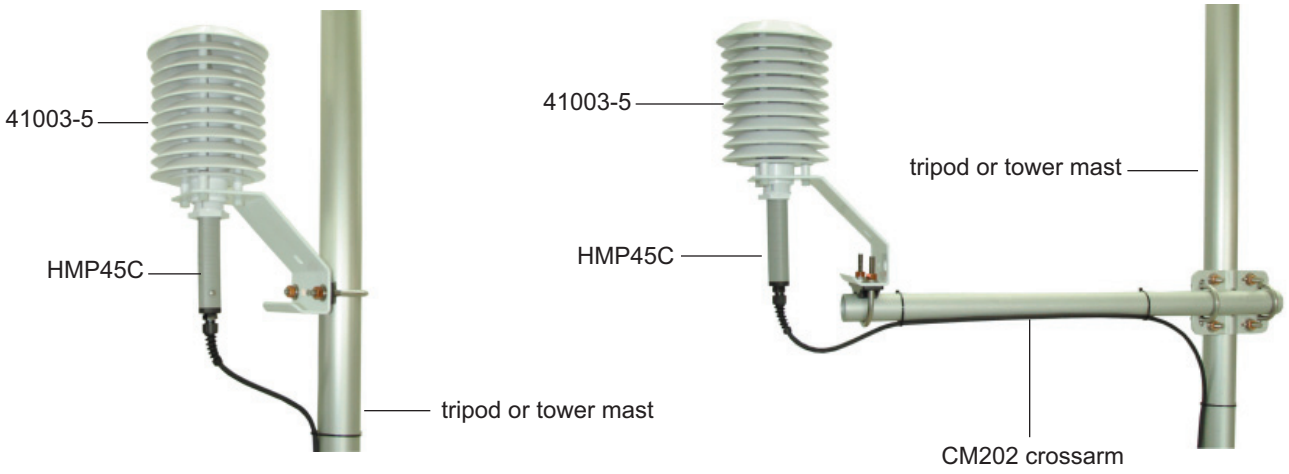
Temperature and Relative Humidity Probe
Models HMP45C

The HMP45C is a rugged, accurate temperature/RH probe manufactured by Vaisala Inc., that is ideal for long-term, unattended applications. The probe uses a capacitive polymer H chip to measure RH and a PRT to measure temperature. To reduce the current drain, power can be supplied to the HMP45C only during measurement when the sensor is connected to the datalogger's switched 12 V terminal. Dataloggers that do not have a switched 12 V terminal, such as the CR510 or CR7, can use the SW12V Switched 12 V device to switch power to the sensor only during measurement. For optimum results, the HMP45C should be recalibrated annually.



Sensor Mounts

The 41003-5 radiation shield should be used when the HMP45C is exposed to sunlight. The 41003-5 can attach to a CM202, CM204, or CM206 crossarm or directly to a mast or tower leg.



Ordering Information

HMP45C-L___	Temperature and RH sensor with user-specified lead length. Enter lead length, in feet, after the L. For example, the HMP45C-L6 has a six foot lead length. The maximum lead length is 1000 ft. Note: Each 100 ft of cable increases the apparent RH reading by approximately 0.56% RH and the temperature by 0.56°C.
SW12V	Switched 12 V device that uses a control port and a 12 V channel to switch power to the HMP45C instead of a switched 12 V terminal.
41003-5	10-Plate Gill Radiation Shield to house the HMP45C

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Manufacturer Specifications

Probe Dimensions: 10 inches (25.4 cm) length, 1 inch (2.5 cm) diameter

Filter: 0.2 µm Teflon® membrane

Filter Diameter: 0.75 inches (1.9 cm)

RELATIVE HUMIDITY

Sensor: HUMICAP® H-chip

Measurement Range: 0.8 to 100% RH, non-condensing

Output Signal Range: 0.008 to 1 Vdc

Accuracy at 20°C:
- against factory reference: ±1% RH
- field calibrated against references: ±2% RH (0-90% RH)
- field calibrated against references: ±3% RH (90-100% RH)

Temperature Dependence: ±0.05% RH/°C

Typical Long-Term Stability: Better than 1% RH per year

Response Time (at 20°C, 90% response): 15 s with membrane filter

Settling Time: 500 ms

Supply Voltage: 12 Vdc Nominal

Current Consumption: ≤4 mA (Active)

Operating Temperature: -40° to +60°C

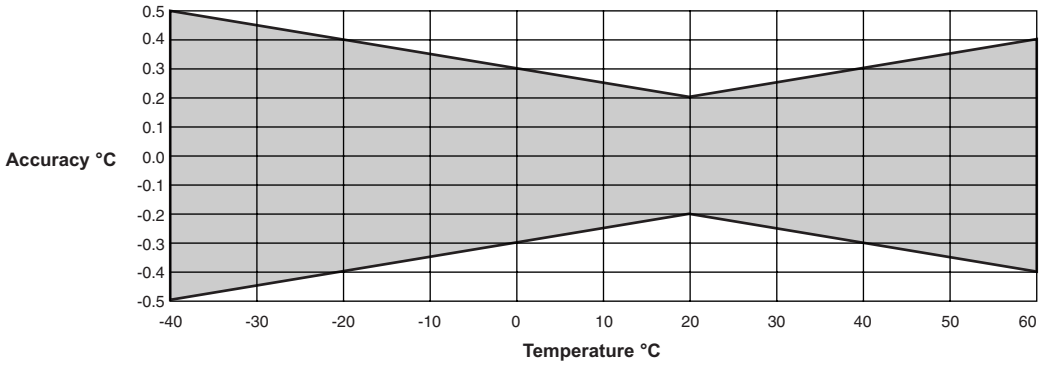
TEMPERATURE

Sensor: 1000 Ω PRT

Measurement Range: -39.2° to +60°C

Output signal range: 0.008 to 1.0 V

Accuracy:



The HMP45C is manufactured by Vaisala, Inc. (Woburn, MA) but cabled and modified by Campbell Scientific for use with our dataloggers.

NOTE: The black outer jacket of the cable is Santoprene® rubber. This compound was chosen for its resistance to temperature extremes, moisture, and UV degradation. However, this jacket will support combustion in air. It is rated as slow burning when tested according to U.L. 94 H.B. and will pass FMVSS302. Local fire codes may preclude its use inside buildings.

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