



HMP155A

Vaisala Temperature and Relative Humidity Probe

Accurate, Wide Temperature Range

Higher end sensor where higher accuracy is required



Overview

The HMP155A provides reliable relative humidity (RH) and temperature measurements for a wide range of applications. It uses a HUMICAP®180R capacitive thin film polymer sensor to measure RH over the 0 to 100% RH range. A PRT measures temperature over the -80° to +60°C range. This rugged, accurate temperature/RH probe is manufactured by Vaisala.

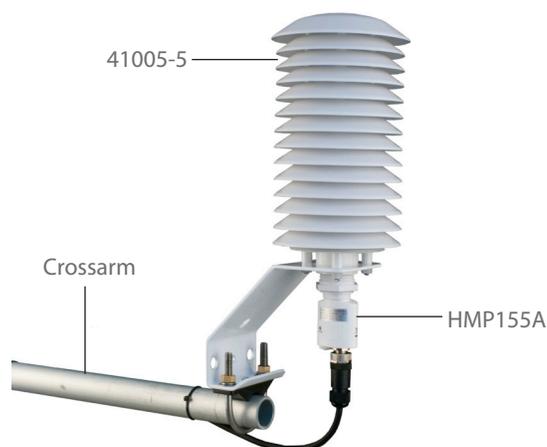
To reduce the current drain, power can be supplied to the HMP155A only during measurement when the sensor is connected to the datalogger's switched 12 V terminal. Dataloggers that do not have a switched 12 V terminal, such as the CR510 or CR7, can use the SW12V switched 12 V device to switch power to the sensor only during measurement.

Benefits and Features

- ▶ Well-suited for long-term, unattended applications
- ▶ Accurate and rugged
- ▶ Mounts to a mast, crossarm, or user-supplied pole
- ▶ Compatible with all Campbell Scientific dataloggers (including the CR200(X) series)

Sensor Mounts

The 41005-5 14-plate Radiation Shield should be used when the HMP155A is exposed to sunlight. The 41005-5 can attach directly to a mast or tower leg or to a CM202, CM204, or CM206 crossarm.



Recommended Cable Lengths

| 2-m Height | | Atop a tripod or tower via a 2-ft crossarm such as the CM202 | | | | | | | | |
|-----------------|------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| Mast/Leg | CM202 | CM6 | CM106 | CM10 | CM110 | CM115 | CM120 | UT10 | UT20 | UT30 |
| 2.7 m (9 ft) | 3.3 m (11 ft) | 3.3 m (11 ft) | 4.3 m (14 ft) | 4.3 m (14 ft) | 4.3 m (14 ft) | 5.8 m (19 ft) | 7.3 m (24 ft) | 4.3 m (14 ft) | 7.3 m (24 ft) | 11.3 m (37 ft) |

Note: Add 1 m (2 ft) to the cable length if mounting the enclosure to the leg base of a CM106, CM110, CM115, or CM120 tripod.

questions & quotes: 435.227.9000

www.campbellsci.com/hmp155a



Ordering Information

Air Temperature and Relative Humidity Probe

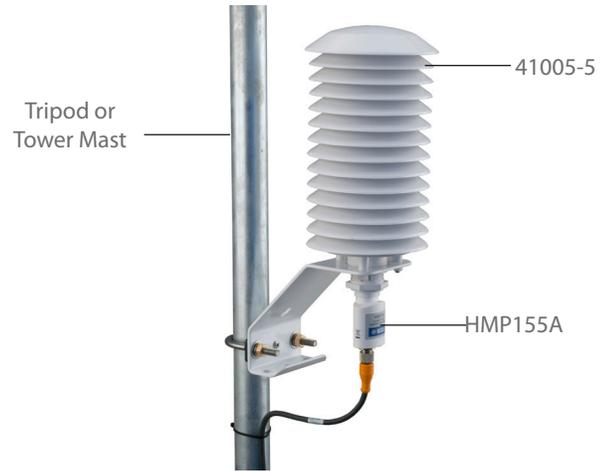
HMP155A-L Vaisala Temperature/RH Probe with user-specified cable length. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

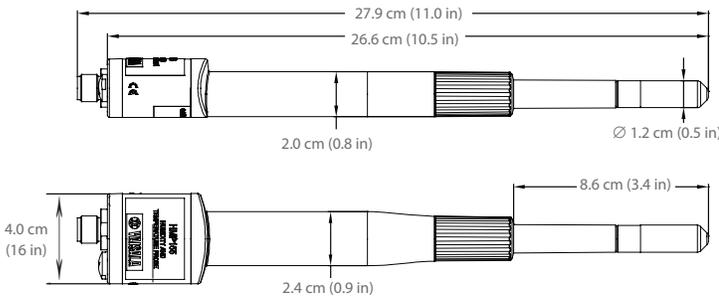
- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure.

Accessories

- SW12V** Switched 12 V device that uses a control port and a 12 V channel to switch power to the HMP155A instead of a switched 12 V terminal.
- 41005-5** 14-Plate Gill Radiation Shield to house the HMP155A



Specifications



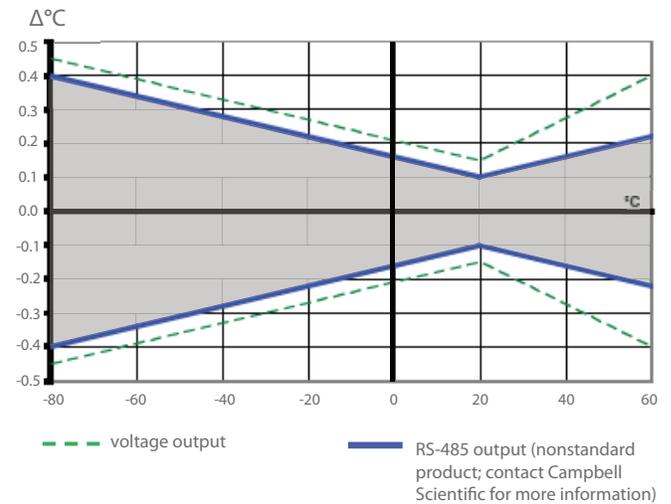
- Electromagnetic Compatibility: Complies with EMC standard EN61326-1 Electromagne
- Filter: Sintered PTFE
- Housing Material: PC
- Housing Classification: IP66
- Operating Humidity Range: 0 to 100%
- Voltage Output Range: 0 to 1 Vdc
- Average Current Consumption: ≤3 mA (analog output mode)
- Operating Voltage: 7 to 28 Vdc
- Settling Time at Power Up: 2 s

Air Temperature

- Temperature Sensor: Pt 100 RTD 1/3 class B IEC 751
- Measurement Range: -80° to +60°C
- Accuracy with Voltage Output
 - 80° to +20°C: ±(0.226 - 0.0028 x temperature)°C
 - +20° to +60°C: ±(0.055 + 0.0057 x temperature)°C
- Entire Temperature Range: see graph at right

Relative Humidity (RH)

- Sensor: HUMICAP®180R
- Measurement Range: 0.8 to 100% RH, non-condensing
- Response Time^a: 20 s (63% RH); 60 s (90% RH)
- Factory Calibration Uncertainty (+20°C)^b
 - 0 to 40% RH: ±0.6% RH
 - 40 to 97% RH: ±1.0% RH
- Accuracy (including non-linearity, hysteresis and repeatability)
 - +15° to +25°C: ±1% RH (0 to 90% RH); ±1.7% RH (90 to 100% RH)
 - 60° to -40°C: ± (1.4 + 0.032 x reading) % RH
 - 40° to -20°C: ± (1.2 + 0.012 x reading) % RH
 - 20° to +40°C: ± (1.0 + 0.008 x reading) % RH
 - +40° to +60°C: ± (1.2 + 0.012 x reading) % RH



^aThe response time for the RH specification is for the HUMICAP®180R© at 20°C in still air with sintered PTFE filter.

^bThe factory calibration uncertainty is defined as ±2 standard deviation limits. Small variations possible; see also calibration certificate.

