



HMP155A-L

Temperature and Relative Humidity Probe



Accurate, Wide Temp Range

Higher-end sensor where higher accuracy is required

Overview

The HMP155A, manufactured by Vaisala, monitors relative humidity (RH) for the range of 0 to 100% RH and temperature for the range of -80° to +60°C. It can provide

reliable measurements for a wide range of applications, as part of a weather station system or as a single instrument. All Campbell Scientific dataloggers are compatible.

Benefits and Features

- › Well-suited for long-term, unattended applications
- › Accurate and rugged
- › Mounts to a mast, crossarm, or user-supplied pole
- › Compatible with most Campbell Scientific data loggers

Technical Description

The HMP155A uses a HUMICAP180R capacitive thin film polymer sensor to measure RH, and a PRT to measure temperature.

A warmed probe option ensures accurate measurements and better long-term stability in high-condensing environments, where required.

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.

Specifications

Electromagnetic Compatibility	Complies with EMC standard EN61326-1 Electromagnetic
Filter Description	Sintered PTFE
Housing Body Material	PC
Housing Classification	IP66
Voltage Output	0 to 1 Vdc
Average Current Consumption	≤ 3 mA (analog output mode)

Operating Voltage	7 to 28 Vdc
Settling Time	2 s (at power up)
Field-Replaceable Chip or Recalibrate	Recalibrate
Tip Diameter	1.2 cm (0.5 in.)
Length	27.9 cm (11 in.)
Head Height	4 cm (1.6 in.)



Body Height	2.4 cm (0.9 in.)
Body Width	2.0 cm (0.8 in.)

Relative Humidity

Sensing Element	HUMICAP 180R
Measurement Range	0 to 100% RH (non-condensing)
Response Time	<ul style="list-style-type: none"> › The response time for the RH specification is for the HUMICAP 180R at 20°C in still air with sintered PTFE filter and a 0 to 75% RH step change. › 60 s (90% step change) › 20 s (63% step change)
Factory Calibration Uncertainty	<ul style="list-style-type: none"> › The factory calibration uncertainty is defined as ± 2 standard deviation limits. Uncertainty is at +20°C. Small variations are possible; see also the calibration certificate. › $\pm 1.0\%$ RH 40 to 97% RH › $\pm 0.6\%$ RH 0 to 40% RH
Accuracy	<ul style="list-style-type: none"> › <i>-NOTE- Accuracy specifications include non-linearity, hysteresis, and repeatability.</i> › $\pm(1.0 + 0.008 \times \text{reading})$ % RH (at -20° to +40°C)

- › $\pm(1.2 + 0.012 \times \text{reading})$ % RH (at -40° to -20°C)
- › $\pm(1.4 + 0.032 \times \text{reading})$ % RH (at -60° to -40°C)
- › $\pm 1.7\%$ RH (at 15° to 25°C, 90 to 100% RH)
- › $\pm 1\%$ RH (at 15° to 25°C, 0 to 90% RH)
- › $\pm(1.2 + 0.012 \times \text{reading})$ % RH (at 40° to 60°C)

Air Temperature

Sensing Element	PT 100 RTD 1/3 class B IEC 751
Measurement Range	-80° to +60°C
Accuracy	<ul style="list-style-type: none"> › $\pm(0.055 + 0.0057 \times \text{temperature})$°C (+20° to +60°C) › $\pm(0.226 - 0.0028 \times \text{temperature})$°C (-80° to +20°C)
Accuracy (RS-485)	<ul style="list-style-type: none"> › $\pm(0.176 - 0.0028 \times \text{temperature})$°C (-80° to +20°C) › $\pm(0.07 + 0.0025 \times \text{temperature})$°C (+20° to +60°C)
Entire Temperature Range	Refer to graph in probe manual.

For comprehensive details, visit: www.campbellsci.eu/hmp155a 