



## HMP155A-L

Air Temperature and Relative Humidity Sensor



## Accurate, Wide Temp 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<sup>®</sup> 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.

### 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

### Detailed Description

To reduce the current drain, power can be supplied to the HMP155A only during measurement when the sensor is connected to the data logger's switched 12 V terminal. Data

loggers 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"> <li>› 60 s (90% step change)</li> <li>› 20 s (63% step change)</li> <li>› 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.</li> </ul>
Factory Calibration Uncertainty	<ul style="list-style-type: none"> <li>› The factory calibration uncertainty is defined as <math>\pm 2</math> standard deviation limits. Uncertainty is at +20°C. Small variations are possible; see also the calibration certificate.</li> <li>› <math>\pm 1.0\%</math> RH 40 to 97% RH</li> <li>› <math>\pm 0.6\%</math> RH 0 to 40% RH</li> </ul>

Accuracy	<ul style="list-style-type: none"> <li>› <math>\pm (1.2 + 0.012 \times \text{reading})</math> % RH (at 40° to 60°C)</li> <li>› <math>\pm 1\%</math> RH (at 15° to 25°C, 0 to 90% RH)</li> <li>› <i>-NOTE- Accuracy specifications include non-linearity, hysteresis, and repeatability.</i></li> <li>› <math>\pm 1.7\%</math> RH (at 15° to 25°C, 90 to 100% RH)</li> <li>› <math>\pm (1.0 + 0.008 \times \text{reading})</math> % RH (at -20° to +40°C)</li> <li>› <math>\pm (1.2 + 0.012 \times \text{reading})</math> % RH (at -40° to -20°C)</li> <li>› <math>\pm (1.4 + 0.032 \times \text{reading})</math> % RH (at -60° to -40°C)</li> </ul>
----------	---

### 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"> <li>› <math>\pm (0.226 - 0.0028 \times \text{temperature})</math> °C (-80° to +20°C)</li> <li>› <math>\pm (0.055 + 0.0057 \times \text{temperature})</math> °C (+20° to +60°C)</li> </ul>
Entire Temperature Range	Refer to graph in probe manual.

For comprehensive details, visit: [www.campbellsci.com/hmp155a](http://www.campbellsci.com/hmp155a) 

