



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® 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"> › 60 s (90% step change) › 20 s (63% step change) › 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.
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"> › $\pm (1.2 + 0.012 \times \text{reading}) \% \text{ RH}$ (at 40° to 60°C) › $\pm 1\% \text{ RH}$ (at 15° to 25°C, 0 to 90% RH) › <i>-NOTE- Accuracy specifications include non-linearity, hysteresis, and repeatability.</i> › $\pm 1.7\% \text{ RH}$ (at 15° to 25°C, 90 to 100% RH) › $\pm (1.0 + 0.008 \times \text{reading}) \% \text{ RH}$ (at -20° to +40°C) › $\pm (1.2 + 0.012 \times \text{reading}) \% \text{ RH}$ (at -40° to -20°C) › $\pm (1.4 + 0.032 \times \text{reading}) \% \text{ RH}$ (at -60° to -40°C)
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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"> › $\pm (0.226 - 0.0028 \times \text{temperature}) ^\circ \text{C}$ (-80° to +20°C) › $\pm (0.055 + 0.0057 \times \text{temperature}) ^\circ \text{C}$ (+20° to +60°C)



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