

HMP155A

Vaisala Temperature and Relative Humidity Probe

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.

Sensor Mounts

The 41005-5 14-plate Gill 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.

Ordering Information

Air Temperature and Relative Humidity Probe

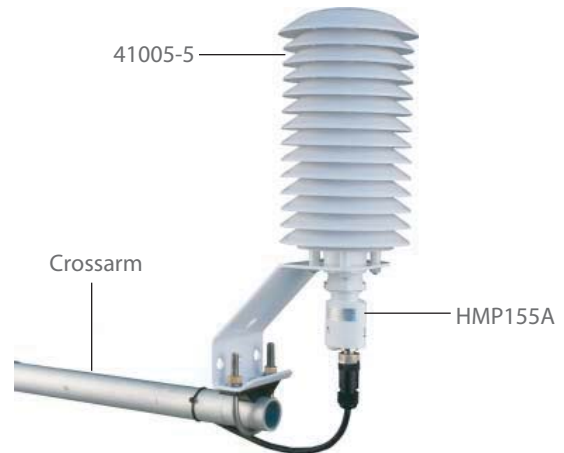
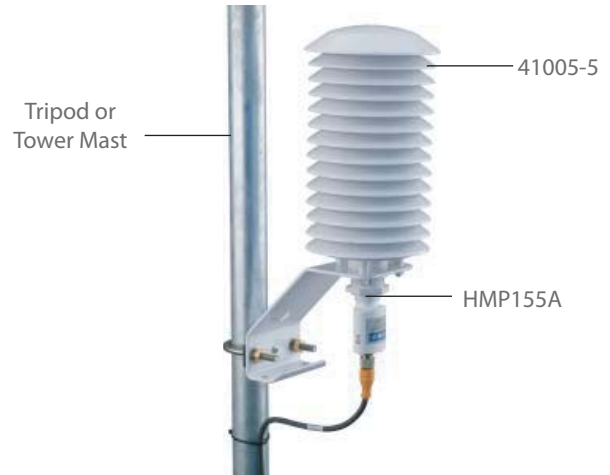
HMP155A-L Vaisala Temperature/RH Probe with user-specified cable length. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

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



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 |
| 9 ft | 11 ft | 11 ft | 14 ft | 14 ft | 14 ft | 19 ft | 24 ft | 14 ft | 24 ft | 37 ft |

Note: Add two feet to the cable length if mounting the enclosure to the leg base of a CM106, CM110, CM115, or CM120 tripod.

Specifications

| | |
|---------------------------------------|--------------------------------------|
| Temperature Range | |
| Operating: | -80° to +60°C |
| Storage: | -80° to +60°C |
| Electromagnetic Compatibility: | Complies with EMC standard EN61326-1 |
| Filter: | Sintered PTFE |
| Housing | |
| Material: | PC |
| Classification: | IP66 |
| Weight: | 3 oz (86 g) |
| Voltage Output: | 0 to 1 Vdc |
| Average Current Consumption: | ≤3 mA (analog output mode) |
| Operating Voltage: | 7 to 28 VDC |
| Settling Time at Power Up: | 2 seconds |

Relative Humidity (RH)

| | |
|--------------------------------------------------|--------------------------------|
| Sensor: | HUMICAP®180R |
| Measurement Range: | 0.8 to 100% RH, non-condensing |
| Response Time*: | 20 s (63% RH), 60 s (90% RH) |
| Factory Calibration Uncertainty (+20°C)** | |
| 0 to 40% RH: | ±0.6% RH |
| 40 to 97% RH: | ±1.0% RH |

Accuracy (including non-linearity, hysteresis & 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 × reading) % RH |
| -40° to -20°C: | ±(1.2 + 0.012 × reading) % RH |
| -20° to +40°C: | ±(1.0 + 0.008 × reading) % RH |
| +40° to +60°C: | ±(1.2 + 0.012 × reading) % RH |

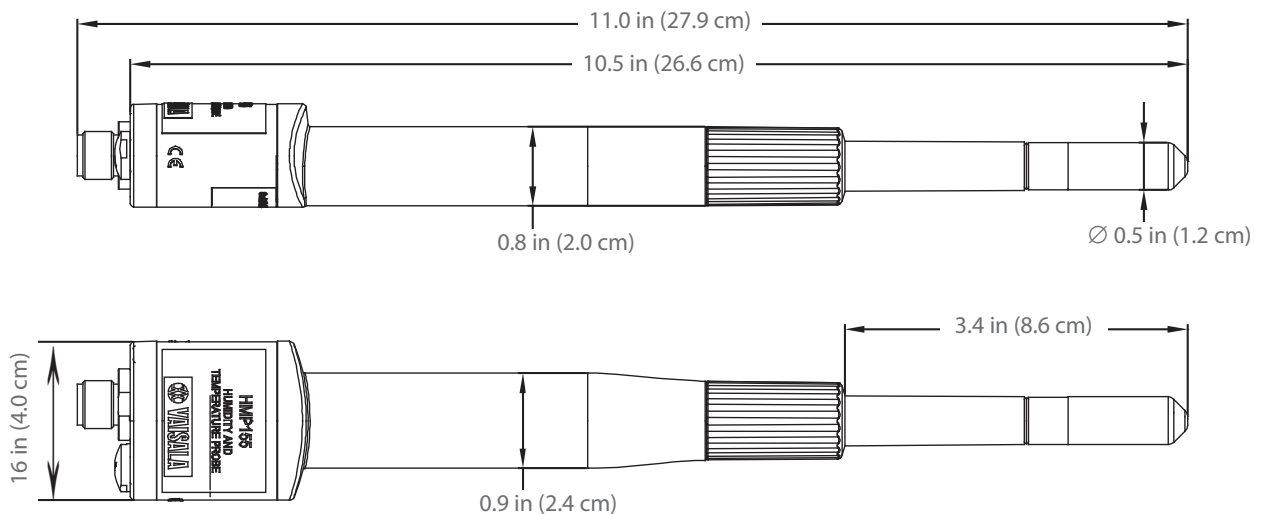
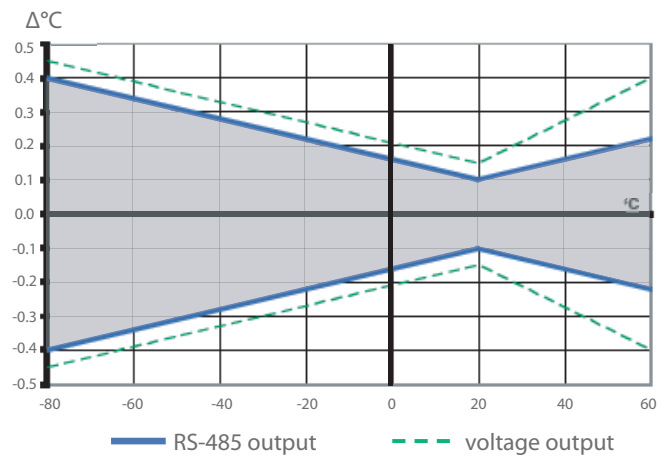
Air Temperature

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 × temperature)°C |
| +20° to +60°C: | ±(0.055 - 0.0057 × temperature)°C |
| Entire Temperature Range: | see graph below |



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

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

