





# Air Temperature and Relative Humidity Sensors

Typically capacitive RH chips and PRTs



Air temperature and relative humidity sensors typically consist of two separate sensors packaged in the same housing. Often relative humidity is measured with a capacitive RH sensor, while air temperature is measured by a PRT.

	Sensing Element	Measurement Range	Accuracy	Field-Replaceable Chip or Recalibrate
<p><b>HygroVUE10</b> Digital Temperature and Relative Humidity Sensor with M12 Connector</p> <p><b>Popular</b></p> 	SHT35 modified by Campbell Scientific	<ul style="list-style-type: none"> <li>➤ Air Temperature: -40°C to +70°C</li> <li>➤ Relative Humidity: 0 to 100% RH</li> </ul>	<ul style="list-style-type: none"> <li>➤ Air Temperature: ±0.1°C (over the range -20 to +60°C)</li> <li>➤ Relative Humidity: ±1.5% (at 25°C, over the range 0 to 80% RH)</li> <li>➤ Relative Humidity: ±2% (at 25°C, over the range 80 to 100% RH)</li> <li>➤ Relative Humidity: -NOTE- The accuracy figures quoted are the 95% confidence limits relative to factory standards.</li> <li>➤ Air Temperature: ±0.2°C (over the range -40 to +70°C)</li> </ul>	Field-replaceable chip


	<i>Sensing Element</i>	<i>Measurement Range</i>	<i>Accuracy</i>	<i>Field-Replaceable Chip or Recalibrate</i>
<p><b>HygroVUE5</b> Digital Temperature and Relative Humidity Sensor</p>  <p>Popular</p>	SHT35 derivative (specially coated for reliability)	<ul style="list-style-type: none"> <li>➤ Relative Humidity: 0 to 100% RH</li> <li>➤ Air Temperature: -40 to +70°C</li> </ul>	<ul style="list-style-type: none"> <li>➤ Air Temperature: ±0.3°C (over the range -20 to +60°C)</li> <li>➤ Relative Humidity: ±3% (at 25°C, over the range 80 to 100% RH)</li> <li>➤ Air Temperature: ±0.4°C (over the range -40 to +70°C)</li> <li>➤ Relative Humidity: ±1.8% (at 25°C, over the range 0 to 80% RH)</li> </ul>	Field-replaceable chip


**EE181-L**  
Air Temperature and  
Relative Humidity Sensor

Popular



	<i>Sensing Element</i>	<i>Measurement Range</i>	<i>Accuracy</i>	<i>Field-Replaceable Chip or Recalibrate</i>
	<ul style="list-style-type: none"> <li>➤ Relative Humidity: Capacitance</li> <li>➤ Air Temperature: 1000 Ω Platinum Resistance Thermometer (PRT)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Air Temperature: -40° to +60°C</li> <li>➤ Relative Humidity: 0 to 100% RH (non-condensing)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Relative Humidity: <i>-NOTE- Accuracy specifications include hysteresis, non-linearity, and repeatability.</i></li> <li>➤ Air Temperature: ±0.2°C (at +23°C)</li> <li>➤ Relative Humidity: ± 2.3% RH (at -15° to +40°C, 90 to 100% RH)</li> <li>➤ Relative Humidity: ±(1.3 + 0.003 • RH reading) % RH (at -15° to +40°C, 0 to 90% RH)</li> <li>➤ Relative Humidity: ± (1.4 + 0.01 • RH reading) % RH (at -25° to +60°C)</li> <li>➤ Relative Humidity: ± (1.5 + 0.015 • RH reading) % RH (at -40° to +60°C)</li> </ul>	—

		<i>Sensing Element</i>	<i>Measurement Range</i>	<i>Accuracy</i>	<i>Field-Replaceable Chip or Recalibrate</i>
<p><b>HMP155A-L</b> Air Temperature and Relative Humidity Sensor</p> 	<ul style="list-style-type: none"> <li>➤ Relative Humidity: HUMICAP 180R</li> <li>➤ Air Temperature: PT 100 RTD 1/3 class B IEC 751</li> </ul>	<ul style="list-style-type: none"> <li>➤ Air Temperature: -80° to +60°C</li> <li>➤ Relative Humidity: 0 to 100% RH (non-condensing)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Relative Humidity: <math>\pm(1.0 + 0.008 \times \text{reading})</math> % RH (at -20° to +40°C)</li> <li>➤ Relative Humidity: <i>-NOTE- Accuracy specifications include non-linearity, hysteresis, and repeatability.</i></li> <li>➤ Relative Humidity: <math>\pm(1.2 + 0.012 \times \text{reading})</math> % RH (at -40° to -20°C)</li> <li>➤ Relative Humidity: <math>\pm 1\%</math> RH (at 15° to 25°C, 0 to 90% RH)</li> <li>➤ Relative Humidity: <math>\pm(1.4 + 0.032 \times \text{reading})</math> % RH (at -60° to -40°C)</li> <li>➤ Relative Humidity: <math>\pm (1.2 + 0.012 \times \text{reading})</math> % RH (at 40° to 60°C)</li> <li>➤ Relative Humidity: <math>\pm 1.7\%</math> RH (at 15° to 25°C, 90 to 100% RH)</li> <li>➤ Air Temperature: <math>\pm(0.055 + 0.0057 \times \text{temperature})^\circ\text{C}</math> (+20° to +60°C)</li> <li>➤ Air Temperature: <math>\pm(0.226 - 0.0028 \times \text{temperature})^\circ\text{C}</math> (-80° to +20°C)</li> </ul>	Recalibrate	

	<i>Sensing Element</i>	<i>Measurement Range</i>	<i>Accuracy</i>	<i>Field-Replaceable Chip or Recalibrate</i>
<b>HMP60-L</b> Air Temperature and Relative Humidity Sensor 	<ul style="list-style-type: none"> <li>➤ Relative Humidity: Vaisala's INTERCAP capacitive chip</li> <li>➤ Air Temperature: 1000 ohm Platinum Resistance Thermometer (PRT)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Relative Humidity: 0 to 100% RH (non-condensing)</li> <li>➤ Air Temperature: -40° to +60°C</li> </ul>	Air Temperature: ±0.6°C	Field-replaceable chip (RH only)

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

