The demand for smaller, faster, more accurate and energy efficient sensors which provide better analysis of moisture control, is on the rise. From refrigerators to respirators, HVAC systems to cabin comfort in vehicles, there is an increasing trend for humidity sensing technology. To compete in today’s ever-increasing competitive market, sensors must be more efficient and cost-effective, characterized by smaller size and precision measurement. TE Connectivity’s HTU31 humidity & temperature sensor is one of the smallest and most accurate humidity sensors on the market. The HTU31 provides fast response time, precision measurement, low hysteresis and sustained performance, even in the most harshest environments.

- HVAC
- REFRIGERATORS, FREEZERS
- RESPIRATORS, VENTILATORS
- PRINTERS
- WASHING MACHINES, DRYERS

DESIGN QUESTIONS?
• What is the lag in response time or how long does it take for the sensor to return to its normal operating state?
• What is the measurement range for the humidity sensor?
• What is the measurement range for the temperature sensing?
• What is the response time?
**CHOOSE SENSORS ACCORDING TO YOUR APPLICATION**

<table>
<thead>
<tr>
<th></th>
<th>HTU31D</th>
<th>HTU31V</th>
<th>HTU21D</th>
<th>HTU21DF</th>
<th>HTU21P</th>
<th>HTU20D</th>
<th>HTU20DF</th>
<th>HTU20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>Digital I²C</td>
<td>Analog Direct Voltage</td>
<td>Digital I²C</td>
<td>Digital I²C</td>
<td>Analog PWM</td>
<td>Digital I²C</td>
<td>Digital I²C</td>
<td>Analog PWM</td>
</tr>
<tr>
<td>Filter</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>RH Accuracy</td>
<td>±2%RH Typ / ±2.5%RH Max Fully calibrated</td>
<td>±2.5%RH Typ / ±3%RH Max Fully calibrated</td>
<td>±3%RH Typ / ±5%RH Max Fully calibrated</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>DFN Package</td>
<td>2.5x2.5x0.9</td>
<td>3.0x3.0x0.9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Size (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>3 – 5.5</td>
<td>1.5 – 3.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(V)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
| Operating     | Relative Humidity: 0 -100%RH  
Temperature: -40°C / 125°C  
Maximum Humidity of 250g/Kg |
| Range         |        |        |        |        |        |        |        |        |
| T° Accuracy   | ±0.2°C Typ / ±0.3°C Max | ±0.3°C Typ / ±0.4°C Max Fully calibrated |
| 5°C – 60°C    |        |        |        |        |        |        |        |        |

**PRECISE ENGINEERING**
- Strict linear response curve through humidity (0-100%) and temperature (-40 to 125°C) respectively
- Specific polymer combined with calibration slope and offset skills

**FAST RESPONSE TIME**
- Industry leading response time (t63% in 5 sec)
- Even after condensation the response time is 63% in 10 sec, enabling sustained system performance
- An optional filter membrane is specially designed to support harsh environments

**HIGH PERFORMANCE**
- Specific die structure and IP67 rated sealing with filter options
- Even after high humidity and temperature exposure or condensation events

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