Sensors are an integral part of most heating, ventilation, air-conditioning, and refrigeration systems (HVAC) — helping to not only maintain a comfortable indoor climate but also to enable the system to perform properly. Sensors enable diagnostics that help identify system or equipment issues that could reduce efficiencies or cause major breakdowns to occur. Sensor technologies help reduce downtime, improve productivity, and lower maintenance costs. Within the last 30 years, there has been a push for HVAC systems with higher efficiencies and improved temperature control as well as the need to monitor and regulate other physical parameters like humidity, air quality and more. TE Connectivity (TE) manufactures a wide range of rugged and reliable sensors for HVAC applications including pressure, temperature, humidity, vibration, position and force. These sensors play a critical role in improving the efficiency, performance and reliability of HVAC systems.

**TE CONNECTIVITY ADVANTAGES**

- Customization Capability
- Engineering Expertise
- Industry Experience
- Manufacturing Scale
- Portfolio Breadth
<table>
<thead>
<tr>
<th>Sensor Model</th>
<th>Application</th>
<th>Key Product Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3200</td>
<td>• Compressors • Pumps • Refrigeration systems</td>
<td>• Sealed design • Analog and digital outputs • High accuracy</td>
<td>• Low cost • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>MS100/US200/DS100</td>
<td>• Compressors • Pumps • Refrigeration systems</td>
<td>• Sealed design • Many configurations • High accuracy</td>
<td>• Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>MS4515DO/MS4525DO</td>
<td>• Blocked filter detection • Fire suppression systems • Air movement</td>
<td>• Low pressures • PCB mountable • Digital output • Accurate</td>
<td>• Low cost • High performance sensing in clean, dry air</td>
</tr>
<tr>
<td>M7100/U7100</td>
<td>• Compressors • Pumps • Refrigeration systems</td>
<td>• Sealed design • Analog and digital outputs • High accuracy</td>
<td>• Lower cost • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>MS8607</td>
<td>• Barometric pressure compensation • Weather stations • Multi-sensor</td>
<td>• High resolution • Baro pressure • Temperature and humidity sensing • 24-bits</td>
<td>• Multi-sensing • Low cost • Accurate and reliable</td>
</tr>
<tr>
<td>85BSD/86BSD</td>
<td>• Diagnostic tools • Test systems • Electronic expansion valves</td>
<td>• Calibrated • Digital output • High accuracy • Variety of fittings</td>
<td>• High performance • Low power • Durable in corrosive environments</td>
</tr>
<tr>
<td>89BSD</td>
<td>• Diagnostic tools • Test systems • Electronic expansion valves</td>
<td>• Calibrated • Digital output • High accuracy • Variety of fittings</td>
<td>• High performance • Low power • Durable in corrosive environments</td>
</tr>
<tr>
<td>MS600/U5600</td>
<td>• Compressors • Pumps • Refrigeration systems</td>
<td>• Sealed design • Wireless • 24-bits • Digital</td>
<td>• Reliable • Accurate sensing • High performance sensing in harsh environments</td>
</tr>
<tr>
<td>MSP100</td>
<td>• Water pressure • Flow monitoring • Tank level • Manifold pressure</td>
<td>• Single piece design • Analog or digital</td>
<td>• Low cost • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>SM7000</td>
<td>• VAV controls • Filter blockage • Zoning systems • Level and flow sensing</td>
<td>• Excellent accuracy • Very low pressures • Digital and analog</td>
<td>• High performance • Low power • Reliable</td>
</tr>
<tr>
<td>SM9000</td>
<td>• VAV controls • Filter blockage • Zoning systems • Level and flow sensing</td>
<td>• Excellent accuracy • Very low pressures • Digital and analog</td>
<td>• High performance • Low power • Reliable</td>
</tr>
<tr>
<td>Radial Leaded Thermistors</td>
<td>• Probes and assemblies; all HVAC control and monitoring systems</td>
<td>• Range of accuracies and curves • Stable and repeatable</td>
<td>• Low cost • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>Axial Thermistors</td>
<td>• Probes and assemblies; all HVAC control and monitoring systems</td>
<td>• Range of accuracies and curves • Stable and repeatable</td>
<td>• Lower cost • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>Platinum Thin Film Elements</td>
<td>• Probes and assemblies; all HVAC control and monitoring systems</td>
<td>• Range of accuracies and curves • Stable and repeatable</td>
<td>• Affordable • Reliable • Accurate sensing in harsh environments</td>
</tr>
<tr>
<td>TSYS Series</td>
<td>• Air temperature monitoring • Thermostats • Zoning systems</td>
<td>• Small size • Low power • Digital • Range of accuracies and costs</td>
<td>• Strong value • Easy to integrate • Accurate and reliable</td>
</tr>
<tr>
<td>TSD Series</td>
<td>• Room occupancy • Fire detection • Remote temperature monitoring</td>
<td>• Small size • High accuracy • Digital interface • Wide temperature range</td>
<td>• Easy to integrate • Complete package • Reliable</td>
</tr>
<tr>
<td>HTU21D</td>
<td>• Room environmental monitoring • Thermostats • Humidification/dehumidification</td>
<td>• Fully calibrated • Reflow solderable • Fast response • Low power</td>
<td>• Dual sensing • Accurate • Repeatable and reliable</td>
</tr>
</tbody>
</table>
## SENSORS FOR HVAC

<table>
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<tr>
<th>Sensor Model</th>
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<th>Benefits</th>
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</table>
| HTU31        | • Room environmental monitoring  
• Thermostats  
• Humidification/dehumidification | • Fully calibrated  
• Wide voltage range  
• Configurable  
• Low power | • Dual sensing  
• Low cost  
• Accurate  
• Repeatable and reliable |
| HTU3500      | • Room environmental monitoring  
• Humidification/dehumidification | • Fully calibrated  
• Reliable  
• Fast response  
• Humidity and temperature sensing | • Dual sensing  
• Compact  
• Accurate  
• Repeatable and reliable |
| HS101LF      | • Room environmental monitoring  
• Humidification/dehumidification | • Fully calibrated  
• Fast response | • Accurate  
• Repeatable and reliable |
| HTG3500      | • Room environmental monitoring  
• Humidification/dehumidification | • Fully calibrated  
• Fast response  
• Humidity and temperature sensing | • Dual sensing  
• Compact  
• Accurate  
• Repeatable and reliable |
| HTF3000LF    | • Room environmental monitoring  
• Humidification/dehumidification | • Fully calibrated module  
• Fast response  
• Humidity and temperature sensing | • Dual sensing  
• Compact  
• Accurate  
• Repeatable and reliable |
| KMA36        | • VAV controls  
• Zoning systems  
• Chillers  
• Air movement | • Small size  
• Digital output  
• High resolution  
• Angular or linear | • Low power  
• Very rugged  
• Large air gap tolerance  
• Reliable |
| KMT32B       | • VAV controls  
• Zoning systems  
• Chillers  
• Air movement | • Very small size  
• High accuracy and resolution  
• Air gap tolerance | • Contactless  
• Low cost  
• Low power  
• Self diagnostics |
| 808M1        | • Chillers  
• Compressors  
• Fans  
• Pumps | • Wide bandwidth  
• High sensitivity  
• High resonant frequency  
• Rugged  
• Shielded | • Good for a range of vibration applications and environments |
| MiniSense 100, LDTC Family | • Security systems  
• Vibration sensing  
• Movement | • High sensitivity  
• High resonant frequency  
• Rugged  
• Shielded | • Large signal  
• Good EMI/RFI rejection  
• Good dynamic range |
| 8011         | • Chillers  
• Compressors  
• Fans  
• Pumps | • Wide bandwidth  
• Hermetically sealed  
• Wide temp range | • Good for a range of vibration applications and environments |
| 4030         | • Chillers  
• Compressors  
• Fans  
• Pumps | • Low pass filtered output  
• Good linearity  
• Sealed  
• DC response | • Low frequency monitoring  
• Tilt and inclination  
• Motion |
| FS-01        | • Pumps  
• Chillers  
• Circulation systems  
• Cooling systems | • Rugged  
• Minimal pressure drop  
• Air or water flow switching | • Reliable  
• Easy to install and use  
• Simple design |
| LL-01        | • Pump protection  
• Storage tanks  
• Compressors  
• Coolant reservoirs | • No moving parts  
• High pressure operation  
• Easy to install | • Very reliable  
• Cost effective  
• Simple operation |