

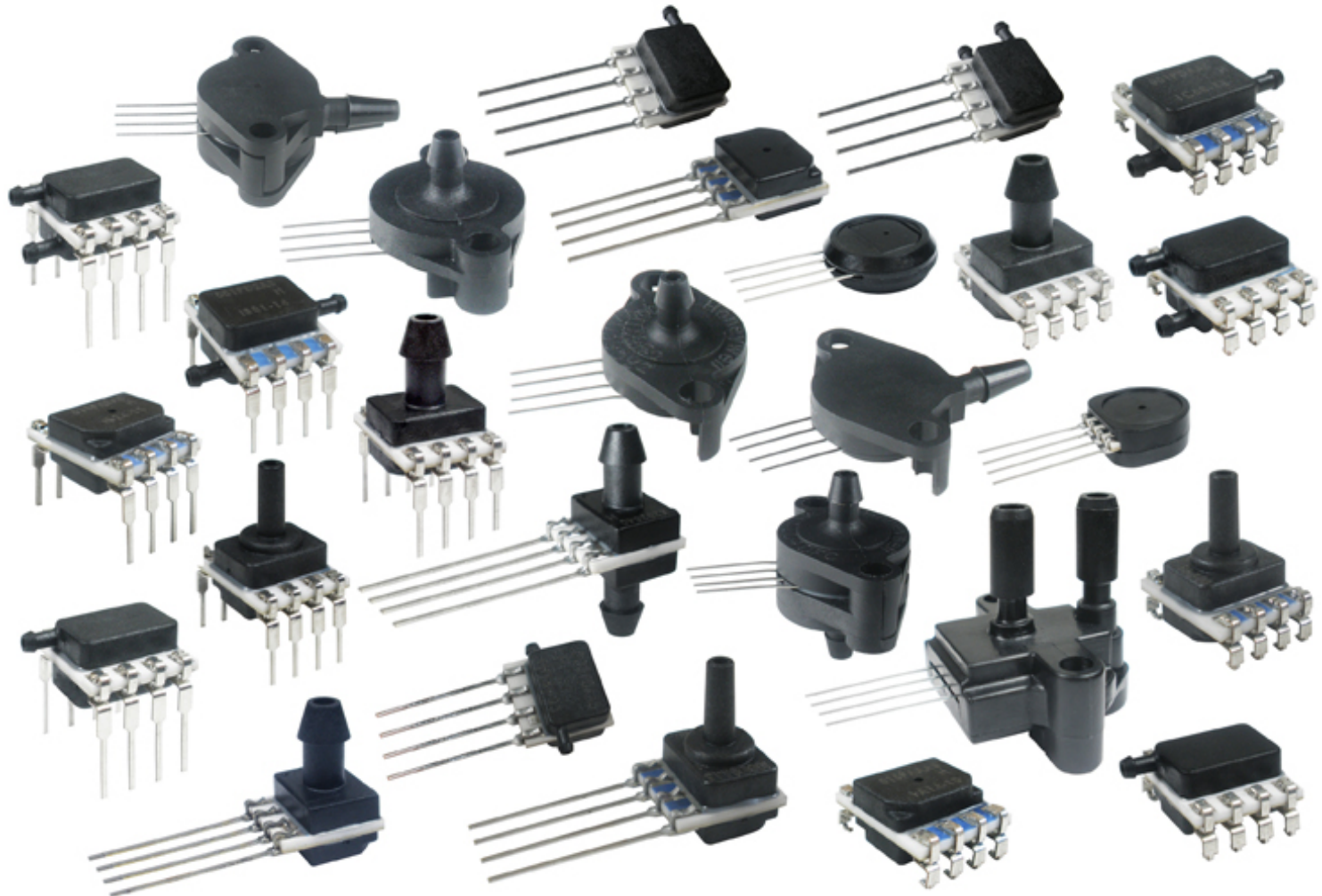


Product Training Module: Honeywell TruStability[®] Board Mount Pressure Sensors: Ultra-Low Pressure HSC Series, SSC Series



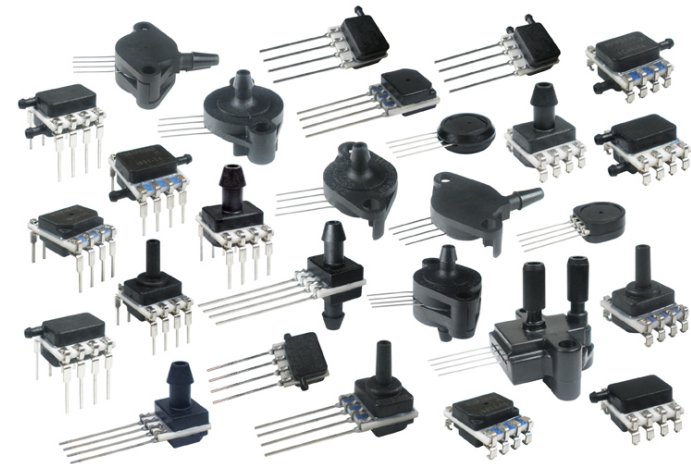
Honeywell

Product Portfolio



Agenda

- In this training module, you will learn the following about Honeywell's TruStability[®] Board Mount Ultra-Low Pressure Sensors:
 - Introduction to what these sensors are
 - Key benefits to design engineers
 - Use in Medical and Industrial applications
 - Where to obtain product information



Introduction

- **TruStability® Board Mount Ultra-Low Pressure Sensors are piezoresistive silicon pressure sensors offering a digital output for reading pressure over the specified full scale pressure span and temperature range**
- **They are intended for use with non-corrosive, non-ionic working fluids**
- **They make use of new Honeywell proprietary technology that combines high sensitivity with high overpressure and burst pressure that protects the sensor without sacrificing the ability to sense very small changes in pressure**
- **They provide 15 competitive differentiators that offer solid benefits to customers**

Combines high sensitivity with high overpressure and burst pressure

Value to Customers

1. Proprietary Honeywell technology★

- Combines high sensitivity with high overpressure and burst pressure

2. Industry-leading stability★

- Minimizes system calibration needs, maximizes system performance, and helps support system uptime

3. Industry-leading Total Error Band (TEB)★

- Provides TEB so sensors can be implemented quickly and easily

4. Industry-leading accuracy★

- Extremely tight accuracy of ± 0.25 %FSS BFSL (Full Scale Span Best Fit Straight Line)



★ = competitive differentiator

Offers industry-leading stability and accuracy

Value to Customers

5. **High burst pressures above 415 inH₂O (1034 mbar)★**
 - Endures a wide range of conditions while maintaining a high level of sensitivity
6. **High working pressure ranges above 135 inH₂O (336 mbar) ★**
 - Allows ultra-low pressure sensors to be used continuously well above the calibrated pressure range
7. **Industry-leading flexibility★**
 - Allows design engineers to choose from over 50,000 possible configurations
8. **Repeatability★**
 - Provides excellent repeatability, high accuracy and reliability under many demanding conditions



★ = competitive differentiator

Flexible in configuration; reliable under demanding conditions

Value to Customers

9. Onboard signal conditioning★

- Typically allows for the removal of signal conditioning components from the PCB

10. Wide variety of pressure ranges★

- From ± 2.5 mbar to ± 40 mbar [± 1 inH₂O to ± 30 inH₂O]

11. Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements★

- Avoid the thermal and mechanical damage during solder reflow attachment and/or repair that lesser rated products would incur
- Unlimited floor life when stored as specified (≤ 30 °C, 85 %RH)



★ = competitive differentiator

Supports unique applications

Value to Customers

12. Insensitive to mounting orientation ★

- Allows customers to position the sensor in the most optimal point in the system, eliminating concern for positional effects

13. Insensitive to vibration ★

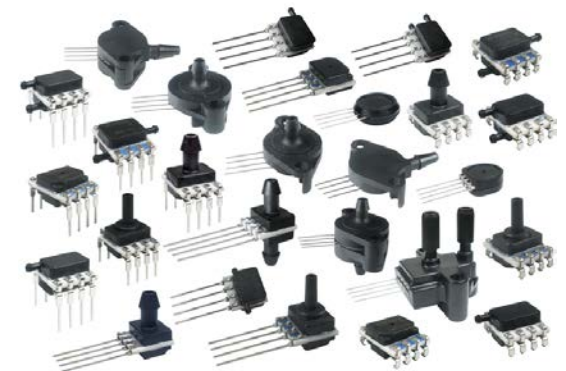
- Reduces susceptibility to application-specific vibration that occurs with changes in pressure, minimizing inaccurate pressure readings

14. Custom calibration ★

- Reduces PCB size

15. Internal diagnostic functions ★

- Increases system reliability

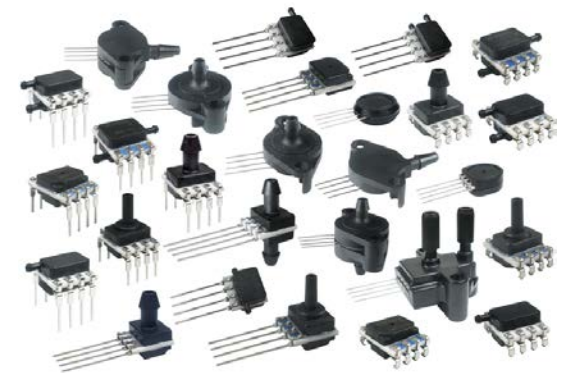


★ = competitive differentiator

Ease of use within application

Features and Benefits

- **Output**
 - I²C- or SPI-compatible 14-bit digital output
 - Accelerates performance through reduced conversion requirements and convenience of direct interface to microprocessors/microcontrollers
- **Small size**
 - Miniature 10 x 10 mm [0.39 x 0.39 in] package
- **Energy efficient**
 - Extremely low power consumption
- **RoHS compliant**
- **Protected by multiple global patents**



Small, energy efficient sensor

Potential Medical Applications

- **Ventilators** detects when breath changes from inhalation to exhalation (and vice-versa) in order to measure the airflow to/from patient



- **Anesthesia machines** designed to meter and measure anesthesia gas so the pressure doesn't exceed a specified level



- **Spirometers** measures airflow in and out of the patient



Potential Medical Applications

- **Nebulizers** monitors airflow rates so the specified amount of medicine, amid a humid environment, is delivered to the patient

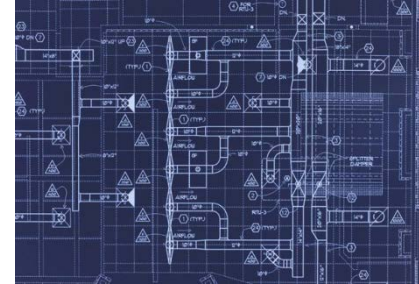


- **Hospital room air pressure** monitors airflow rates to provide continuous positive or negative air pressure to prevent contamination of those near a contagious patient, or to protect an immune-compromised patient from being infected by others

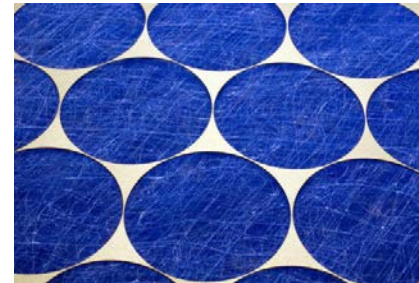


Potential Industrial Applications

- VAV (Variable Air Volume)** determines if the specified airflow level is delivered to sections of the building or to branches of the heating and cooling system



- Clogged HVAC air filter detection** detects condition of air filter: when pressure reaches a level that indicates a clogged filter, the measurement is sent to HVAC system to notify user of a clogged filter that needs to be changed



Potential Industrial Applications

- Static duct pressure** provides pressure measurement in a section of the duct work at a point in time; measurement is fed to HVAC control system which will adjust to maintain equilibrium throughout duct system



- HVAC transmitters** can be positioned in outlying areas of the building to provide precise airflow pressure sensing



- Indoor air quality** measures airflow so that an alarm alerts the HVAC system to inform the user that dangerous chemical fumes could be building up



Online Resources

- To access more information about the Honeywell TruStability® Board Mount Ultra-Low Pressure Sensors, [click here](#).

The screenshot shows the Honeywell website's product page for TruStability Board Mount Ultra-Low Pressure Sensors. The page layout includes a top navigation bar with the Honeywell logo and 'Sensing and Control' text. A search bar is located in the top right corner. Below the navigation bar, there are several tabs: HOME, ABOUT US, KEY INDUSTRIES SERVED, PRODUCTS & INFORMATION, NEWS & EVENTS, SALES & SUPPORT, and LOGIN. The main content area is divided into several sections:

- Product Overview:** A collection of ten different sensor models, each with a numbered hotspot (1-10) for clicking to view features.
- Product Features:** A section titled 'Product Features' with a sub-section '1. Potential applications'. It lists two applications:
 - MEDICAL Application:** Ventilators. **Function in Application:** detects when breath changes from inhalation to exhalation (and vice-versa) in order to measure the airflow to/from patient. **Customer Benefits:** stable, sensitive, accurate, easy to design in, safe.
 - Anesthesia machines Application:** designed to meter and measure anesthesia gas so the pressure doesn't exceed a desired level. **Customer Benefits:** stable, sensitive, accurate, durable, safe, easy.
- Product Sheets:** A list of four PDF documents:
 - TruStability® HSC Series-High Accuracy, Digital Output, Rev. C
 - TruStability® HSC Series-High Accuracy, Analog Output, Rev. C
 - TruStability® SSC Series-Standard Accuracy, Digital Output, Rev. C
 - TruStability® SSC Series-Standard Accuracy, Analog Output, Rev. C
- Distributor Inventory:** A section with a red header and a search bar for inputting part numbers for stock availability.
- Download High Resolution Product Image:** A button with a download icon.

About Honeywell Sensing and Control Products

- For more information about all of Honeywell Sensing and Control sensor and switch solutions, visit <http://sensing.honeywell.com>



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