



Product Training Module: Honeywell TruStability® Board Mount Pressure Sensors: Uncompensated/Unamplified NSC Series



Honeywell

Summary of Contents

- In this training module, you will learn the following about Honeywell's TruStability® Board Mount Uncompensated/Unamplified Pressure Sensors:
 - An introduction to what these sensors are
 - Their key features and benefits
 - The Medical and Industrial applications in which they may potentially be used
 - Where to obtain additional information



Introduction

- **TruStability® Uncompensated/ Unamplified Pressure Sensors** are designed for those customers who want to do their own compensation, calibration, and amplification in order to make use of the maximum resolution of the bare sensor output, leveraging a custom algorithm required for their application
- The NSC Series allows customers the flexibility of self-compensation and self-calibration while still benefiting from the industry-leading stability, accuracy, and repeatability that TruStability® Board Mount Pressure Sensors provide
- These sensors are piezoresistive silicon pressure sensors intended for use with non-corrosive, non-ionic gases, such as air and other dry gases and for non-corrosive, non-ionic liquids

Industry-leading stability, accuracy, and repeatability

Value to Customers

1. Industry-leading stability★

- Minimizes system calibration needs
- Maximizes system performance
- Helps support system uptime

2. Industry-leading accuracy★

- Extremely tight accuracy of ± 0.25 %FSS BFSL (Full Scale Span Best Fit Straight Line)
- Reduces software needs to correct system inaccuracies, minimizing system design time
- Helps optimize system uptime
- Supports system accuracy and warranty requirements



★ = competitive differentiator

Industry-leading stability and accuracy

Value to Customers

3. Industry-leading flexibility★

- Modular, flexible design
- Numerous package styles (all with the same industry-leading stability), pressure ports, and options
- Simplifies integration into the device manufacturer's application
- Single side wet media option

4. Small size★

- Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when compared to most board mount pressure sensors
- Typically allows for easy placement on crowded PCBs or in small devices

5. Repeatability★

- Provides excellent repeatability, high accuracy, and reliability under many demanding conditions



★ = competitive differentiator

Small, flexible configuration

Features and Benefits

- **Sensitive**
 - Provides enhanced sensitivity and accuracy over the range
 - Meets specified pressure level requirements
- **Insensitivity to mounting orientation**
 - Allows for flexibility of use within the application
- **Energy efficient**
 - Extremely low power consumption [operating supply voltage as low as 1.8 Vdc] reduces power consumption
 - Provides extended battery life



Enhanced sensitivity; energy efficient

Key Features

Output ¹	ratiometric unamplified analog output
Accuracy	±0.25 %FSS BFSL
Operating temperature range ²	-40 °C to 85 °C [-40 °F to 185 °F]
Pressure types	Absolute: internal vacuum reference; output value proportional to absolute pressure
	Differential: allows application of pressure to either side of sensing diaphragm
	Gage: referenced to atmospheric pressure; output value proportional to pressure variations from atmosphere
Pressure ranges	1 psi to 150 psi [60 mbar to 10 bar]
Standard calibration units	psi, mbar, bar, kPa
Supply voltage ³	1.8 Vdc to 12.0 Vdc
Mounting	DIP, SMT, SIP
RoHS-compliant	yes

Comparison with the TruStability® HSC and SSC Series

¹ Output: Ratiometric amplified analog or digital I²C or SPI outputs

² Operating temperature range: 0 °C to 50 °C [-32 °F to 122 °F]

³ Supply voltage: 3.0 to 3.6 Vdc or 4.75 to 5.25 Vdc, depending on model

Potential Medical Applications

- **Honeywell TruStability® Board Mount Uncompensated/Unamplified Pressure Sensors** may potentially be used in numerous **Medical applications**, including:
 - Blood analysis
 - Gas chromatography
 - Analytical instrument sampling systems
 - Hospital gas supply
 - Oxygen concentrators
 - Nebulizers
 - Spirometers
 - Patient monitoring
 - Therapeutic hospital beds



Blood analysis



Gas chromatography



Analytical instrument sampling systems



Hospital gas supply



Oxygen concentrators



Nebulizers



Spirometers



Patient monitoring



Therapeutic hospital beds

Potential Industrial Applications

- **Honeywell TruStability® Board Mount Uncompensated/Unamplified Pressure Sensors may potentially be used in numerous Industrial applications, including:**
 - Barometry
 - Gas chromatography
 - Analytical instrument sampling systems
 - HVAC transmitters
 - Automated pneumatic assembly equipment
 - Pneumatic operator control system
 - Valves, pumps, and actuators
 - Industrial gas supply



Barometry



Gas chromatography



Analytical instrument sampling systems



HVAC transmitters



Automated pneumatic assembly equipment



Pneumatic operator control systems



Valves, pumps, and actuators



Industrial gas supply

Online Resources

- To access more information about the Honeywell TruStability® Uncompensated/Unamplified Pressure Sensors, [click here](#).

The screenshot shows the Honeywell website's product page for the TruStability® Board Mount Pressure Sensors: NSC Series - Uncompensated/Unamplified. The page features a navigation bar with links to HOME, ABOUT US, KEY INDUSTRIES SERVED, PRODUCTS & INFORMATION, NEWS & EVENTS, SALES & SUPPORT, and LOGIN. A search bar is located in the top right corner. The main content area displays a grid of 10 different sensor models, each with a numbered hotspot (1-10) for viewing features. Below the grid is a 'Product Overview' section describing the sensor's piezoresistive silicon technology and its ratiometric analog output. To the right of the main content, there are three sections: 'Distributor Inventory' with a search bar, 'Download High Resolution Product Image' with a download icon, and 'Product Sheets' with links to PDF documents for the NSC Series, SIP Package and NSC Series, DIP and SMT Packages.

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Honeywell TruStability® Board Mount Pressure Sensors: NSC Series - Uncompensated/Unamplified

Product Features Where to Buy

1 2 3 4 5 6 7 8 9 10

click hotspots to view features

Product Overview

The **TruStability® NSC Series - Uncompensated/Unamplified** is a piezoresistive silicon pressure sensor offering a ratiometric analog output for reading pressure over the specified full scale pressure span and temperature range. The NSC Series is both unamplified and uncompensated, and offers infinite resolution on the pressure signal. These products are ideal for those customers who want to do their own compensation, calibration, and amplification in order to make use of the maximum resolution of the bare sensor output, leveraging a custom algorithm required for the application.

Distributor Inventory

Input part number for stock availability

Download High Resolution Product Image

Product Sheets

TruStability® Board Mount Pressure Sensors: NSC Series - Uncompensated-Unamplified

Installation Instructions

NSC Series, SIP Package

NSC Series, DIP and SMT Packages

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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