

## Selecting Honeywell Board Mount Pressure Sensors

### TruStability™, Basic, MicroPressure, 24PC, 26PC



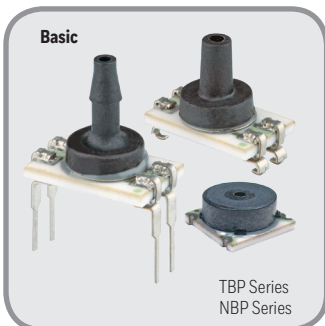
#### Introduction

There are many considerations when selecting Honeywell's Board Mount Pressure Sensors to determine the specific series for the application. This Selection Guide will provide an overview as to when to select:

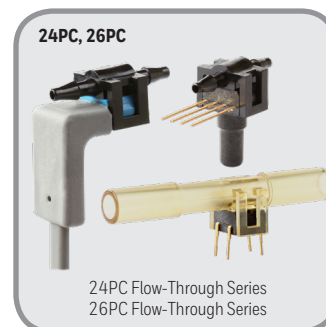
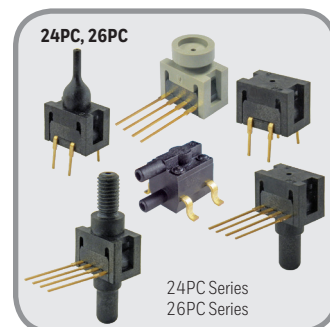
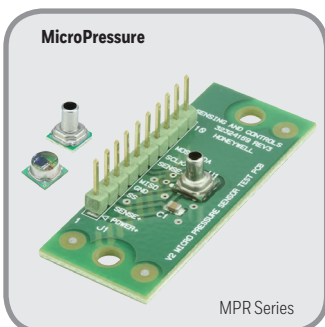
- **TruStability™**
  - RSC Series (High Resolution, High Accuracy, Compensated/Amplified)
  - HSC Series (Compensated/Amplified)
  - SSC Series (Compensated/Amplified)
  - TSC Series (Compensated/Unamplified)
  - NSC Series (Uncompensated/Unamplified)



- **Basic**
  - ABP Series (Compensated/Amplified)
  - TBP Series (Compensated/Unamplified)
  - NBP Series (Uncompensated/Unamplified)



- **MicroPressure**
  - MPR Series (Compensated/Amplified)
- **24PC** (Uncompensated/Unamplified)
  - 24PC Series
  - 24PC Flow-Through Series
- **26PC** (Compensated/Unamplified)
  - 26PC Series
  - 26PC Flow-Through Series



# Selection Guide

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### Board Mount Pressure Sensors Portfolio Cross Reference

Characteristic	TruStability™				
	RSC Series	HSC Series	SSC Series	TSC Series	NSC Series
Signal conditioning	amplified			unamplified	
Calibrated	yes				no
Temperature compensated	yes				no
Pressure range	±1.6 mbar to ±10 mbar   ±160 Pa to ±1 MPa   ±0.5 inH <sub>2</sub> O to ±150 psi			±60 mbar to ±10 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi	±2.5 mbar to ±10 mbar   ±250 Pa to ±1 MPa   ±1 inH <sub>2</sub> O to ±150 psi
Device type	absolute, differential, gage			differential, gage	absolute, differential, gage
Output	24-bit digital SPI	analog (Vdc), digital (I <sup>2</sup> C, SPI)			analog (mV)
Total Error Band	as low as ±0.25 %FSS depending on pressure range (after customer auto-zero)	±1 %FSS to ±3 %FSS depending on pressure range	±2 %FSS to ±4 %FSS depending on pressure range	-	
Accuracy	±0.1 %FSS BFL	±0.25 %FSS BFL			±0.25 %FSS BFL
Mounting	DIP, SMT	DIP, SIP, SMT			DIP, SIP, SMT
Compensated temperature range	-40°C to 85°C [-40°F to 185°F]	0°C to 50°C [32°F to 122°F]	-20°C to 85°C [-4°F to 185°F]	0°C to 85°C [32°F to 185°F]	-
Operating temperature range	-40°C to 85°C [-40°F to 185°F]	-20°C to 85°C [-4°F to 185°F]	-40°C to 85°C [-40°F to 185°F]		
Approvals	REACH, RoHS	RoHS, WEEE			
Summary	<ul style="list-style-type: none"> <li>Industry-leading long-term stability, Total Error Band, accuracy and flexibility</li> <li>High burst pressures and working pressure ranges</li> <li>Excellent repeatability</li> <li>High 24-bit resolution</li> </ul>	<ul style="list-style-type: none"> <li>Industry-leading long-term stability, total error band, accuracy and flexibility</li> <li>High burst pressures and working pressure ranges</li> <li>Excellent repeatability</li> <li>Liquid media compatible on port 1</li> </ul>	<ul style="list-style-type: none"> <li>Industry-leading long-term stability</li> <li>Allows customers the flexibility of sensor self-calibration</li> <li>Liquid media compatible on port 1</li> <li>High burst pressures and working pressure ranges</li> </ul>		

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## Selecting Honeywell Board Mount Pressure Sensors: TruStability™, Basic Pressure, MicroPressure, 24PC, 26PC

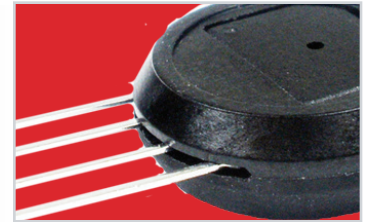


Characteristic	Basic Pressure			MicroPressure	24PC		26PC	
	ABP Series	TBP Series	NBP Series	MPR Series	24PC Series	24PC Flow-Through Series	26PC Series	26PC Flow-Through Series
Signal conditioning	amplified	unamplified		amplified	unamplified			
Calibrated	yes		no	yes	no		yes	
Temperature compensated	yes		no	yes	no		yes	
Pressure range	±60 mbar to ±1.0 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi			60 mbar to 2.5 bar   6 kPa to 250 kPa   1 psi to 30 psi	SIP, DIP: 0.5 psi to 250 psi SMT: 1 psi to 15 psi	1 psi to 100 psi	SIP, DIP: 1 psi to 250 psi SMT: 1 psi to 15 psi	1 psi to 100 psi
Device type	differential, gage	gage	absolute, gage	absolute, gage	absolute, differential, wet-wet differential, gage	flow-through gage	differential, wet-wet differential, gage	flow-through gage
Output	digital (I <sup>2</sup> C, SPI) analog (Vdc)	analog (mV)		digital (I <sup>2</sup> C, SPI)	analog (mV)			
Total Error Band	±1.5 %FSS BFSL		–	as low as ±1.5 %FSS (after customer auto-zero)	–			
Accuracy	±0.25 %FSS BFSL			±0.25 %FSS BFSL	linearity and hysteresis: 0.5% typ.	linearity and hysteresis: 0.75% typ.	linearity and hysteresis: 0.5% typ.	linearity and hysteresis: 0.35% typ.
Mounting	DIP, SMT, leadless SMT			leadless SMT	DIP, SIP, SMT	SIP	DIP, SIP, SMT	SIP
Compensated temperature range	0°C to 50°C [32°F to 122°F]	0°C to 85°C [32°F to 185°F]	–	0°C to 50°C [32°F to 122°F]	–		0°C to 50°C [32°F to 122°F]	
Operating temperature range	-40°C to 85°C [-40 °F to 185°F]	-40°C to 125°C [-40°F to 257°F]		-40°C to 85°C [-40 °F to 185°F]	-40°C to 85°C [-40°F to 185°F]			
Approvals	RoHS, WEEE, NSF-169, BPA Free, LFGB			REACH, RoHS, NSF-169, BPA Free, LFGB	RoHS, WEEE			
Summary	<ul style="list-style-type: none"> <li>Designed to provide a simple, cost-effective, basic performance, high quality solution for those medical and industrial applications where high performance, stability, and accuracy are not as critical</li> <li>Liquid media compatible on ports 1 and 2</li> </ul>	<ul style="list-style-type: none"> <li>Designed to provide a simple, cost-effective, basic performance, high quality solution for those medical and industrial applications where high performance, stability, and accuracy are not as critical</li> <li>Liquid media compatible on ports 1 and 2</li> </ul>		<ul style="list-style-type: none"> <li>Designed to meet the requirements of higher volume medical (consumer and non-consumer) devices and commercial appliance applications</li> <li>Low power consumption</li> <li>Liquid media compatible</li> </ul>	<ul style="list-style-type: none"> <li>Miniature package</li> <li>Operable after exposure to frozen conditions</li> <li>Choice of termination for gage sensors</li> <li>SMT: pick-up feature; maximum peak reflow temperature of 260°C [500°F]</li> <li>End-point calibration; elastomeric construction</li> <li>Media flow-through port option</li> </ul>			

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### Low Pressure\* Selection Guide

	Media: Water (Non-Ionic)	Media: Other	Uncompensated	Temperature Compensated	Total Error Band	Amplified Analog	Output: Analog	Output: Digital	Housing and Port Styles	Absolute Pressure	Cost Effective	Flow-Through Package	Wet-Dry Differential	Wet-Wet Differential	High Resolution 24-bit	Food Grade Compliant
<b>TruStability™</b>																
RSC Series	✓	-	-	✓	✓	-	-	✓	✓	✓	-	-	-	-	✓	-
HSC Series	✓	-	-	✓	✓	✓	✓	✓	✓	✓	-	-	✓	-	-	-
SSC Series	✓	-	-	✓	✓	✓	✓	✓	✓	✓	-	-	✓	-	-	-
TSC Series	✓	-	-	✓	-	-	✓	-	✓	-	-	-	✓	-	-	-
NSC Series	✓	-	✓	-	-	-	✓	-	✓	✓	-	-	✓	-	-	-
<b>Basic</b>																
ABP Series	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	-	-	✓	-	✓
TBP Series	✓	-	-	✓	-	-	✓	-	-	-	✓	-	-	-	-	✓
NBP Series	✓	-	✓	-	-	-	✓	-	-	✓	✓	-	-	-	-	✓
<b>MicroPressure</b>																
MPR Series	✓	✓	-	✓	✓	-	-	✓	-	✓	✓	-	-	-	-	✓
<b>26PC</b>																
26PC Series	✓	✓	-	✓	-	-	✓	-	-	-	-	✓	-	✓	-	-
<b>24PC</b>																
24PC Series	✓	✓	✓	-	-	-	✓	-	-	-	-	✓	-	✓	-	-

\*1 psi to 150 psi

## Key Features

### TruStability™

#### RSC Series, HSC Series, SSC Series

- For use when:
  - Accuracy and low Total Error Band are required
  - Measuring gases
  - Ultra-low or low pressure ranges are needed
  - Performance is the key driver
- Amplified analog
- Digital output
- Ease of installation
- Many housing and port styles

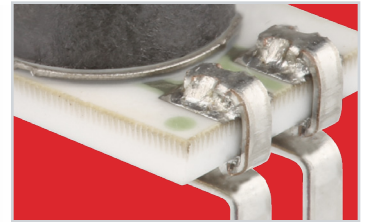
### RSC Series, High Resolution

- High 24-bit resolution; analog-to-digital converter with integrated EEPROM
- Extremely tight Total Error Band, as low as  $\pm 0.25$  %FSS depending on pressure range (after customer auto-zero), due to Honeywell's patented sense die design, in-house compensation, calibration, and mechanical package design
- Extremely tight accuracy of  $\pm 0.1$  %FSS BFSL (low power consumption, less than 10 mW, typ.)
- Virtually insensitive to mounting orientation ( $\pm 0.1$  %FSS or  $\pm 0.2$  %FSS, depending on pressure range) due to Honeywell's patented sense die design

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### Key Features (continued)

#### TruStability™

##### HSC Series (Ultra-Low Pressure Ranges\*)

- Extremely tight Total Error Band due to Honeywell's patented sense die design, in-house compensation and calibration, and mechanical package design:
  - $\pm 3$  %FSS for 2 inH<sub>2</sub>O span
  - $\pm 1.5$  %FSS for 3 inH<sub>2</sub>O to 5 inH<sub>2</sub>O span
  - $\pm 1$  %FSS above 5 inH<sub>2</sub>O span
- Virtually insensitive to mounting orientation (<0.15 %FSS) and very low vibration sensitivity due to Honeywell's patented sense die design
- High resolution (min. 0.03 %FSS analog, 12-bits digital) due to the use of sensors specifically designed for ultra-low pressures, not just amplifying higher range sensors
- Port 1 can be exposed to non-corrosive, non-ionic liquids when the liquid media option is selected
- Extremely tight accuracy: Inherently a linear sense die design/diaphragm

\*  $\pm 0.5$  inH<sub>2</sub>O to  $\pm 30$  inH<sub>2</sub>O

##### TSC Series

- Compensated unamplified for those customers who require temperature compensation but want to do their own amplification
- Back-side sensing allows for wet capability on one port; port 1 can be exposed to non-corrosive, non-ionic liquids
- Ease of installation
- Many housing and port styles

##### NSC Series

- Uncompensated uncalibrated for those customers who want to do their own compensation, calibration, and amplification
- Back-side sensing allows for wet capability on one port: port 1 can be exposed to non-corrosive, non-ionic liquids
- Ease of installation
- Many housing and port styles

#### Basic Pressure

##### ABP Series

- Amplified and compensated, analog or digital output, single or dual ports, small package
- Cost: Select the ABP Series if cost is a major concern and some sensor performance can be de-rated. The ABP series has fewer porting and housing options than the HSC Series and SSC Series
- Ports 1 and 2 can be used with non-ionic liquids (wet/wet) when the liquid media option is selected

##### TBP Series

- Unamplified and compensated, analog output
- Cost: Select the TBP Series if cost is a major concern and some sensor performance can be de-rated. The TBP series has fewer porting and housing options but does come in a smaller package.
- Port 1 can be used with non-ionic liquids when the wet option is selected

##### NBP Series

- Unamplified and uncompensated, analog output
- Back-side sensing allows for wet capability on one port: port 1 can be exposed to non-corrosive, non-ionic liquids
- Cost: Select the NBP Series if, and only if, the application cannot be met with the other sensors noted above due to cost considerations; cost should be the primary consideration when selecting the Basic NBP Series.
- Port 1 can be used with non-ionic liquids when the wet option is selected

#### MicroPressure

##### MPR Series

- 5 mm x 5 mm [0.20 in x 0.20 in] package footprint
- Calibrated and compensated
- 60 mbar to 2.5 bar | 6 kPa to 250 kPa | 1 psi to 30 psi
- 24-bit digital I<sup>2</sup>C or SPI-compatible output
- IoT (Internet of Things) ready interface
- Low power consumption (<10 mW typ.), energy efficient
- Stainless steel pressure port
- Compatible with a variety of liquid media
- Absolute and gage pressure types
- Total Error Band after customer auto-zero: As low as  $\pm 1.5$  %FSS
- Compensated temperature range: 0°C to 50°C [32°F to 122°F]
- REACH and RoHS compliant
- Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1
- Available on breakout board for easier evaluation and testing
- Select sensors available on breakout board for easy evaluation and testing

#### 24PC, 26PC

- 24PC: Unamplified and uncompensated
- 26PC: Unamplified, temperature compensated and calibrated
- Full liquid wet/wet differential sensing avoids having to use a media isolated sensor
- Absolute (24PC), differential, wet-wet differential, gage
- 0.5 psi to 250 psi (SIP, DIP); 1 psi to 15 psi (SMT)
- Very small SMT package option
- Many port styles
- Fluorosilicone, EPDM, silicon and neoprene seals (DIP and SIP)
- Pick and place features (SMT)
- Rugged mounting features
- Proven quality and reliability
- Ease of installation

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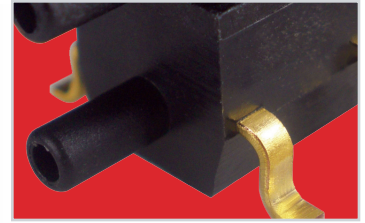
### Potential Medical Applications

	Airflow Monitors	Anesthesia Machines	Blood Analysis Machines	Blood Pressure Monitoring	Breast Pumps	Dental Chairs	Blood Analyzers	Chemistry Analyzers	CPAP Water Tanks	Flow Cytometry	Gas Chromatography	Gas Flow Instrumentation	Lab Auto. Systems	Lab Equipment	Molecular Testing	Hospital Beds	Hospital Gas Supply	Hospital Room Air Pressure	Kidney Dialysis Machines	Nebulizers	Hospital Oxygen/Nitrogen Gas Distribution	Oxygen Concentrators	Patient Monitoring	Pneumatic Controls	Respiratory Machines	Sleep Apnea Equipment	Spirometers	Ventilators	Water Flow Measurement	Wearables	Wound Therapy	
<b>TruStability™</b>																																
RSC Series	✓	✓	✓	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	✓	✓	✓	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-
HSC Series	-	✓	-	✓	-	-	✓	✓	-	✓	-	-	✓	✓	✓	-	-	✓	-	✓	-	-	-	-	-	-	✓	✓	-	-	-	
SSC Series	-	-	-	✓	-	-	✓	✓	-	✓	-	-	✓	✓	✓	-	✓	✓	-	✓	-	-	-	-	-	-	✓	✓	-	-	-	
TSC Series	-	-	-	✓	-	-	✓	✓	-	-	-	-	-	-	-	✓	✓	-	-	✓	-	-	-	-	-	-	✓	-	-	-	✓	
NSC Series	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	-	-	✓	-	-	✓	-	-	-	✓	-	-	-	-	
<b>Basic Pressure</b>																																
ABP Series	-	-	-	✓	-	✓	✓	✓	-	✓	-	-	✓	✓	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-	-	-	-	✓	
TBP Series	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	✓	
NBP Series	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	✓	
<b>MicroPressure</b>																																
MPR Series	✓	-	-	✓	✓	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	✓	-	-	-	-	-	-	✓	✓
<b>24PC</b>																																
24PC Series	-	-	-	✓	-	✓	✓	✓	-	✓	-	-	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	✓	-
<b>26PC</b>																																
26PC Series	-	-	-	✓	-	✓	✓	✓	-	✓	-	-	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	-	-

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Potential Industrial and Consumer Applications

	Air Beds	Air Compressors	Air Movement Control	Barometry	Coffee Machines	Drones	Environmental Control	Filter Monitoring Equipment	Flow Calibrators	Gas Chromatography	Gas Flow Instrumentation	Gas Collection/Delivery	Gas and Water Meters	Humidifiers	HVAC Clogged Air Filter Detection	HVAC Systems	HVAC Transmitters	Indoor Air Quality	Industrial Controls	Irrigation Equipment	Instrumentation	Leak Detection	Level Indicators	Life Sciences	Other Commercial Equipment	Pneumatic Control	Pressure Valves	Robotics	Static Ducts	VAV (Variable Air Volume) Control	Washing Machines, Dish Washers	Water Control Valves	Weather Balloons		
<b>TruStability™</b>																																			
RSC Series	-	-	-	✓	-	✓	-	-	✓	✓	✓	-	-	-	✓	✓	✓	✓	-	-	-	✓	-	✓	-	✓	-	-	✓	-	-	✓	-	-	✓
HSC Series	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	
SSC Series	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	
TSC Series	-	-	-	-	-	-	-	-	-	✓	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓	✓	✓	-	-	-	-	-	-	
NSC Series	-	-	-	✓	-	-	-	-	-	✓	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	
<b>Basic Pressure</b>																																			
ABP Series	-	✓	✓	-	✓	-	✓	✓	-	-	-	✓	-	-	-	-	✓	✓	✓	-	✓	✓	✓	-	✓	✓	✓	✓	-	-	-	-	-	-	
TBP Series	-	-	✓	-	✓	-	✓	-	-	-	-	-	-	-	-	✓	-	✓	-	-	✓	✓	-	✓	✓	✓	✓	-	-	-	-	-	-	-	
NBP Series	-	-	✓	-	✓	-	✓	-	-	-	-	-	-	-	-	✓	-	✓	-	-	✓	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	
<b>MicroPressure</b>																																			
MPR Series	✓	-	-	-	✓	✓	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	-	✓	✓	✓	-	-	-	✓	-	-	-	
<b>24PC</b>																																			
24PC Series	-	✓	-	-	-	-	✓	-	✓	-	✓	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-	✓	-	
<b>26PC</b>																																			
26PC Series	-	✓	-	-	-	-	✓	-	✓	-	✓	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-	✓	-	

### For more information

Honeywell Sensing and Internet of Things services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or the nearest Authorized Distributor, visit [sensing.honeywell.com](http://sensing.honeywell.com) or call:

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While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

### Honeywell Sensing and Internet of Things

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