

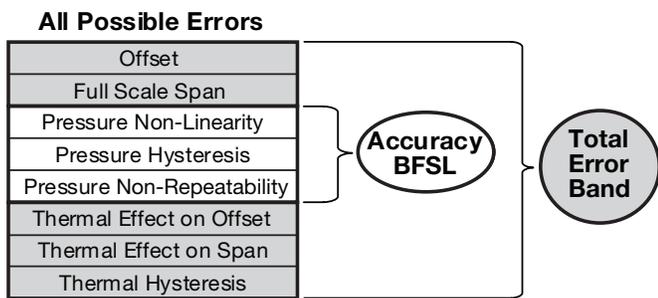
Technical Note

Total Error Band Specification for Honeywell Heavy Duty Pressure Transducers, PX2 Series and PX3 Series

1.0 Total Error Band Definition

The Total Error Band (TEB) specification on a heavy duty pressure transducer product datasheet can often be confusing. TEB is a single specification that includes all possible sources of error. TEB should not be confused with accuracy, which is actually a component of TEB. (See Figure 1.)

Figure 1. Components of Total Error Band



2.0 Total Error Band Datasheet Specifications

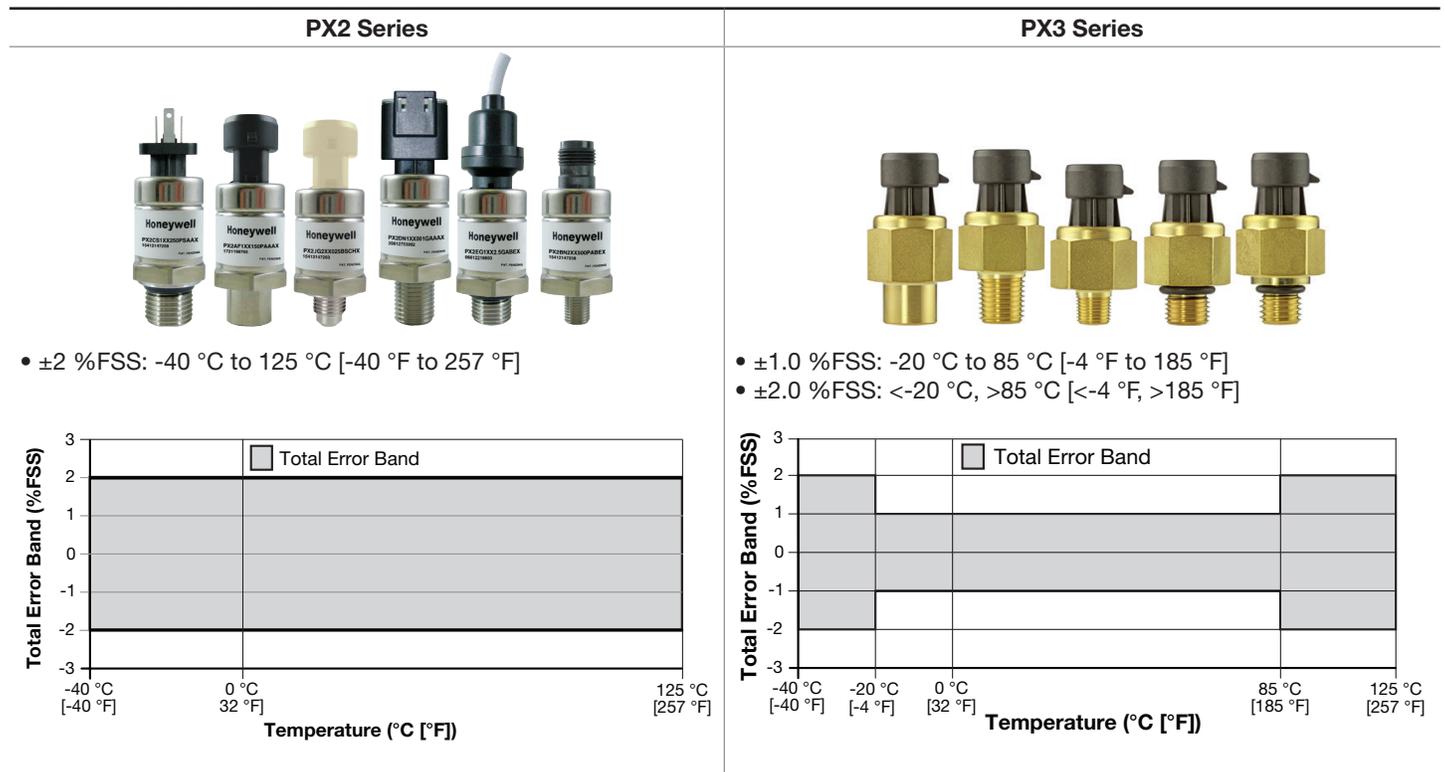
Honeywell uses the TEB specification in its product datasheets because it is the most comprehensive, clear and meaningful indication of the sensor's true measurement performance over a specified temperature range.

Many competitors do not use TEB. They simply specify the "accuracy" of their device. This specification, however, may exclude hysteresis and temperature effects. Instead, the errors are listed individually. When added up, the total error (or what would be TEB) can be significant.

This specification may also be calculated over a very narrow range, at only one point in the range, or at the absolute best accuracy level. It is then up to the customer to calibrate the device to make sure it has the accuracy needed over the temperature conditions of the application.

Table 1 shows the TEB in graphical form for the PX2 and the PX3 Series.

Table 1. PX2 Series and PX3 Series TEB



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Figure 2. Honeywell Heavy Duty Pressure Transducer PX2 Series and PX3 Series Product Datasheets

PX2 Series

Table 2. Performance Specifications¹

Characteristic	Parameter
Operating temperature range ²	-40 °C to 125 °C [-40 °F to 257 °F]
Storage temperature range ³	-40 °C to 125 °C [-40 °F to 257 °F]
Compensated temperature range ⁴	-40 °C to 125 °C [-40 °F to 257 °F]
Accuracy ⁷	±0.25 %FSS ⁹ (See Figure 1.)
Offset error ⁸	±1 %FSS ⁹
Total Error Band ¹⁰	±2 %FSS ⁹ (-40 °C to 125 °C [-40 °F to 257 °F]) (See Figure 1.)

Honeywell TEB includes all possible errors, including thermal errors and hysteresis. Honeywell TEB is given over the specified temperature ranges.

PX3 Series

Table 2. Performance Specifications (At 25 °C [77 °F] and under unless otherwise noted.)

Characteristic	Parameter
Operating temperature range ¹	-40 °C to 125 °C [-40 °F to 257 °F]
Storage temperature range ¹	-40 °C to 125 °C [-40 °F to 257 °F]
Compensated temperature range	-40 °C to 125 °C [-40 °F to 257 °F]
Total Error Band ² :	
-20 °C to 85 °C [-4 °F to 185 °F]	±1.0 %FSS
<-20 °C, >85 °C [<-4 °F, >185 °F]	±2.0 %FSS
Accuracy BFSL ³	±0.25 %FSS

Figure 3. Example of a Competitor Heavy Duty Pressure Transducer Product Datasheet

Characteristic	Specification
Operating Temperature Range	-30 °C to 100 °C [-40 °F to 212 °F]
Compensated Temperature Range	-30 °C to 100 °C [-40 °F to 212 °F]
Storage Temperature Range	-40 °C to 135 °C [-40 °F to 275 °F]
Offset Error	±2 %FSS
Accuracy	linearity error: ±0.5% of Full Span Max.
Total Error Band	2.0% of Span (-20 °C to 100 °C [-4 °F to 212 °F])

Competitor TEB is presented over a narrower temperature range than Honeywell and includes partial error.

Total Error Band Benefits

Honeywell's industry-leading Total Error Band provides the following benefits to the customer:

- Eliminates individually testing and calibrating every transducer, helping to reduce manufacturing time and process.
- Supports system accuracy and warranty requirements.
- Helps to optimize system uptime.
- Provides excellent sensor interchangeability.

Find out more

To learn more about Honeywell Sensing and Productivity Solutions' products, call +1-815-235-6847 or 1-800-537-6945, visit sensing.honeywell.com, or e-mail inquiries to info.sc@honeywell.com

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While we 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.

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