

# Technical Note

## Diagnostics for TruStability® Board Mount Pressure Sensors, HSC and SSC Series

### 1.0 INTRODUCTION

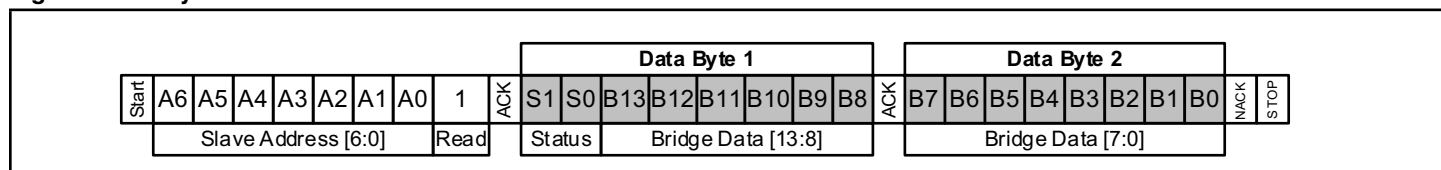
The TruStability® Board Mount Pressure Sensors, HSC Series and SSC Series, offer an optional diagnostic function on both the digital and analog output devices which the customer must select as a part of the catalog listing, if it is desired. (To view the catalog listing nomenclature, please access the [HSC Series datasheet](#) or [SSC Series datasheet](#).)

This feature may be beneficial in applications where the sensor functionality and the need to know this is critical.

### 2.0 DIGITAL OUTPUT DIAGNOSTICS

The output is sent when the sensor is given a read command and is a part of the two most significant bits (S1, S0) of data in Byte 1. (See Figure 1.)

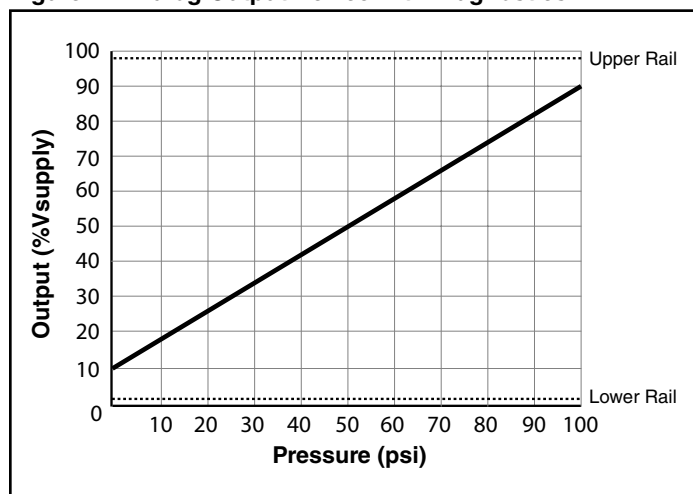
Figure 1. Two Byte Data Readout



### 3.0 ANALOG OUTPUT DIAGNOSTICS

If an analog diagnostic condition is detected, the output will go to either the upper or lower rail of the device and remain, thus preventing the sensor from outputting ambiguous data. (See Figure 2.)

Figure 2. Analog Output Device with Diagnostics



The digital output diagnostic feature consists of an EEPROM signature used to validate the EEPROM contents during start-up, loss of sense element connection and the short circuit of the sense element or internal interconnects inside the device (wirebonds). If any of the these three conditions is detected, a **11** on the Status Bits is shown in the first two bits of the most significant byte as shown in Table 1.

Table 1. Status Bits and Description

Status Bits		Description
S1	S0	
0	0	Normal Operation, Valid Data
0	1	Device in Command Mode (shown only during factory calibration )
1	0	Stale Data: Data that has already been fetched since the last measurement cycle, or data fetched before the first measurement has been completed.
1	1	Diagnostic Condition

Table 2 shows the fault condition and resulting output when the analog diagnostic function is specified.

Table 2. Fault Condition and Resulting Output

Fault Condition	Analog Diagnostic Rail
EEPROM Corrupt	Lower Rail
Sensor Bridge Open (any element)	Upper Rail
Sensor Bridge Short (any element)	Upper Rail
Loss of Supply Voltage	Lower Rail
Loss of Ground Connection	Upper Rail

# Technical Note

## Diagnostics for TruStability® Board Mount Pressure Sensors, HSC and SSC Series

### Find out more

To learn more about Honeywell's sensing and control products, call **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

Sensing and Control  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422  
**honeywell.com**

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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.

The Honeywell logo, consisting of the word "Honeywell" in a bold, red, sans-serif font.

008282-1-EN GLO  
December 2014  
Copyright © 2014 Honeywell International Inc. All rights reserved.