



# Glossary of terms

## **Compensated Temperature Range**

This is the temperature range for which all the accuracy specifications listed are covered by. This basically means that if you are within the product temperature range then the accuracy of the product will be correct to those specified.

Some products state an accuracy over a given temperature range but when you look closer the Compensated Temperature Range is far lower. If you move outside of the Compensated Temperature Range then the accuracy of the product will be worse.

## **Working Voltage**

This is the supply voltage band that must be used to ensure the product operates properly. A supply voltage outside of this band will result in the product either failing to work (too low) or result in product damage (too high).

## **Proof Pressure**

This is a rating at which the product specifications remain unaffected by overpressurisation. If you are using a 400 bar unit and have a *Proof Pressure* of 2 times then your maximum pressure allowed before damage occurs is 800 bar ( $400 \times 2 = 800$ ).

## **Burst Pressure**

This is the maximum pressure that can be applied to the product before mechanical failure. If you are using a 400 bar unit and have a *Burst Pressure* of 6 times then your maximum pressure allowed before mechanical failure occurs is 2400 bar ( $400 \times 6 = 2400$ ).

## **Linearity**

This is a measure of how well the product output increases linearly (within the given tolerance) with increasing or decreasing pressure. So this means that at any pressure applied to the product the output will not deviate from ideal calibration specifications by more than +/- 0.05% Full Scale

## **Hysteresis**

This is the variation in accuracy between output readings from increasing pressure when compared to output readings from decreasing pressure.

For example use a 0 – 5 volt, 400 bar Transducer and set pressure at zero bar. Now increase the pressure to 200 bar. You should have a reading of 2.5 Volts. Again increase the pressure to above 200 bar. Now decrease the pressure and return to 200 bar. Study the output it should be exactly the same as the first reading and any deviation is called the hysteresis. The maximum allowed for our product is +/- 0.05% Full Scale.

## **Repeatability**

This is a measure of the ability of the product to produce the same output signal for the same pressure that is applied time and time again.

For example if you were to continuously apply a pulsed pressure of 200 bar you would get an output of 2.5 Volts +/- 0.005% Full Scale



### **Stability (Cycles or Time)**

It is desirable that the strain-gage measurement system be stable and not drift with time. In calibrated instruments, the passage of time always causes some drift and loss of calibration.

However the *Thin Film* Product minimises all of these effects and therefore results in a less than 0.1% calibration shift over a 10 million-cycle period.

### **Thermal Error**

This is the measured temperature band in degrees C for which there will be less than 1% accuracy deviation.

We state 80°C, which means if you were operating the product between – 40°C to + 40°C then the Thermal Error will be less than 1%. The same applies if it was –10°C to +70°C or +10°C to +90°C.

### **Vibration**

This is a measure of what force the product can withstand in the form of Gravity (g)

In this case the ASIC can withstand a vibration force of no greater than 50g

### **EMC/RFI**

**E**lectro**M**agnetic Compatibility and **R**adio **F**requency **I**nterference

This is a measure of the ability to resist or prevent interference from or to the product.

Shielding and guarding can solve most electric interference and noise problems. A shield around the measurement lead wires will intercept interference and may also reduce any errors caused by insulation degradation. Shielding also will guard the measurement from capacitive coupling.