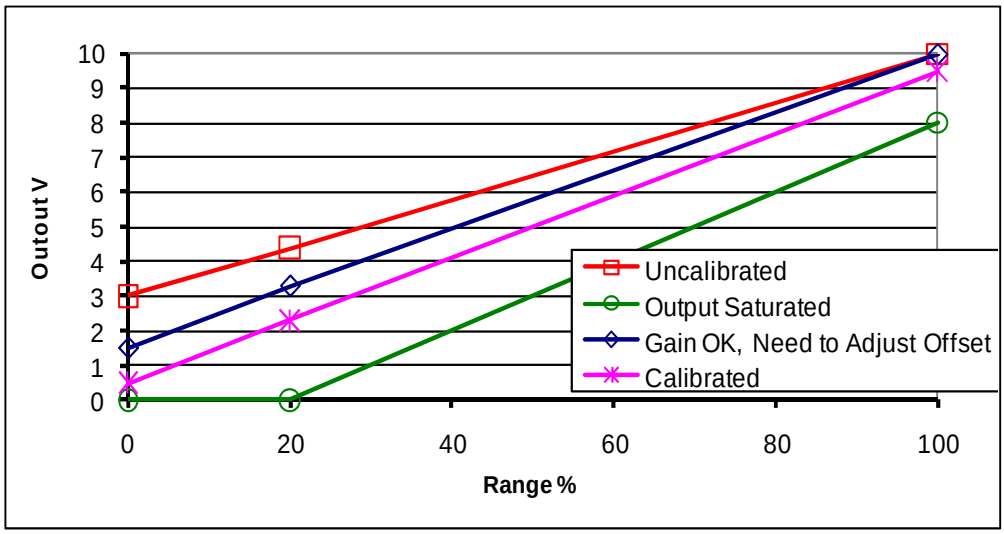
POSITEK LIMITED

CALIBRATION PROCEDURE FOR POSITEK ROTARY SENSORS

Rotary Sensors: Ensure that the flat on the shaft is facing the ridge in the casting. The output at this position should be about the mid range between the high and low output.
It is always important to set the gain (slope) of the sensor before the offset (zero). When setting the gain the important factor is the difference between the high and low outputs rather than their absolute value. I.e. for a 0.5V to 9.5V output sensor the gain trim is correct if the high output is 9.8V and the low output is 0.8V. The absolute value can be adjusted with the offset trim.
It should be noted that if the calibration is a long way out then the sensor output may saturate towards the ends of the travel. This makes it very difficult to calibrate and the gain and offset trims may need a coarse adjustment to make



Calibration Procedure

1. Turn the shaft to the minimum angle and measure the output of the sensor. Turn the shaft to the maximum angle and measure the output.
2. Take the difference between the two readings. The difference should be the same as the difference between the high and low calibrated output values.
3. If the difference is not correct the gain trim should be adjusted at one end of the travel. To increase the difference (increased gain) the gain trim should be adjusted anticlockwise. The output should be adjusted by about half the error in the difference between the measured high and low output and the required high and low output. (The output characteristic typically swings approximately about the mid travel position so an adjustment of half the error at one end will give a similar adjustment at the other end). NOTE: The trim potentiometers are single turn devices.
4. Once a small adjustment has been made the output at the high and low positions need to be measured again. Repeat steps 1 to 3 until the gain is within the calibration limits. It is usual to adjust the gain trim about two or three times before the gain is correct.
5. Set the sensor at one end of travel and adjust the offset trim until the output is within the calibration limits.
6. Check the calibration at the ends of the travel and at intermediate points for linearity checking if required.

For further information please contact:
www.positek.com sales@positek.com
Tel: +44(0)1242 820027 fax: +44(0)1242 820615
Positek Ltd, Andoversford Industrial Estate, Cheltenham GL54 4LB. U.K.