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1 (b) Systematic errors and Random errors

Systematic - All readings are biased usually occurs from a poor design of the measurement system.

Random - Repeated reading around a mean causes of error unknown

(c) change in dimensions of gauge wire with ^{change} increase in pressure proportional.

(d) $K_1 \times K_2 \times K_3 \times K_4 = \text{overall System Sensitivity}$
 $0.75 \Omega/\text{rad} \times 150 \text{ mV}/\Omega \times 500 \text{ V}/\text{V} \times 1.0 \text{ cm}/\text{V}$

(i) $0.75 \Omega/\text{rad} \times 0.150 \text{ V}/\Omega \times 500 \text{ V}/\text{V} \times 1.0 \text{ cm}/\text{V} = \underline{56.25 \text{ cm/rad}}$

(ii) $\frac{\text{OUTPUT}}{\text{INPUT}} = \frac{C}{R} \quad C = \frac{8.5}{R = 56.25} = \underline{0.151 \text{ rad}}$

(iii) A Wheatstone bridge is used to measure an unknown resistance in a circuit

