

Darryl Evans

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One

a) measurement transducer used to take single shot value of quantity being measured.
Monitoring transducer used for short term continuous readings.

b) Systematic errors are due to poor experimental methodology or the design of the measurement system.

Random errors are from unexpected causes and are determined using standard deviation about the mean.

c) Resistance strain gauge is where the change in length of the gauge wire has a proportional change in resistance of the device, $\therefore$ it is used to measure force or strain.

$$d) \frac{C}{R} = 0.75 \times 0.15 \times 500 \times 1$$
$$R = 56.25 \text{ cm/rad}$$

$$ii) C = 8.5 \therefore R = \frac{8.5}{56.25} = 0.15 \text{ rad}$$

iii) Wheatstone bridge changes resistance value into voltage to be read by recorder.