Transducer trainer kit

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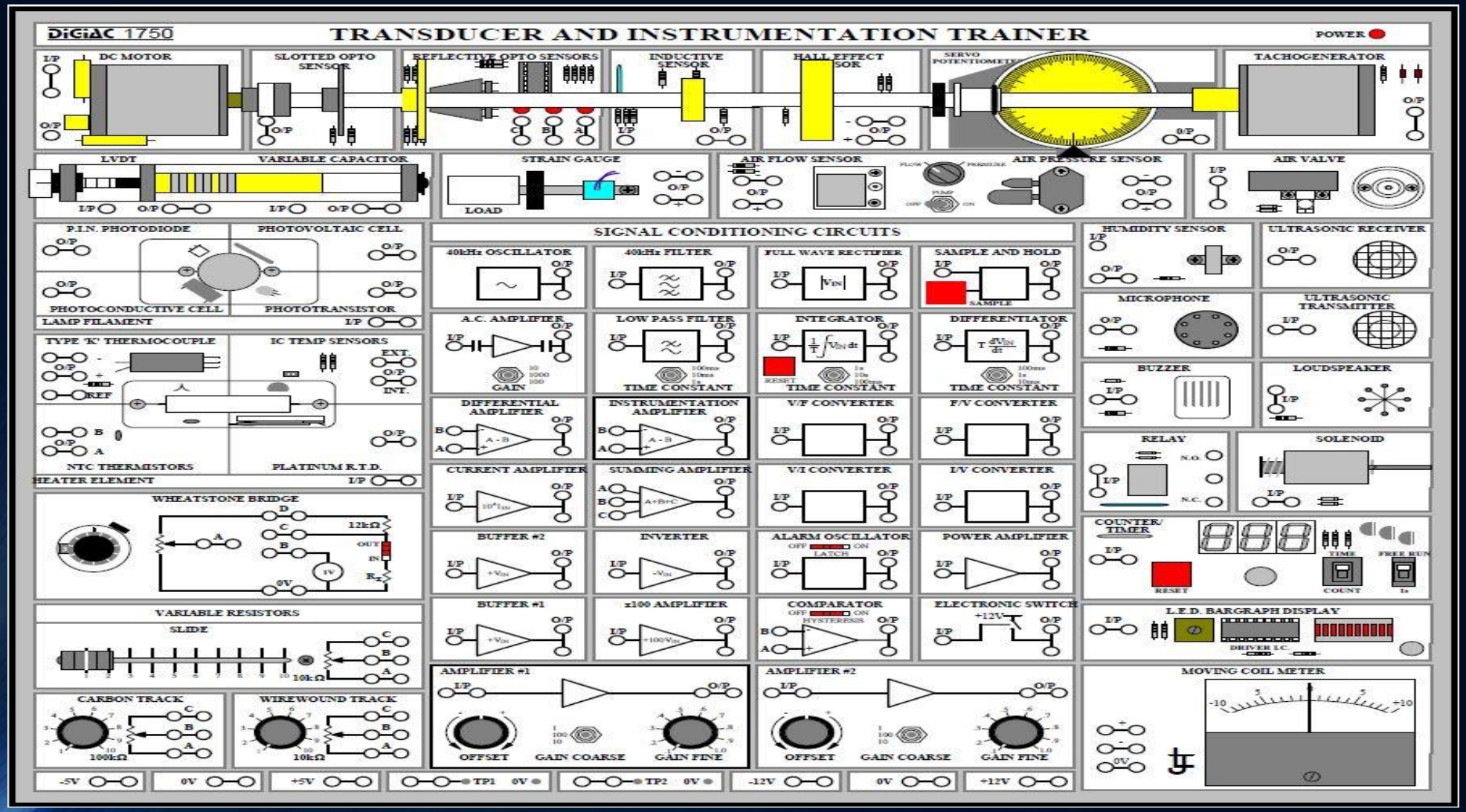
Aim

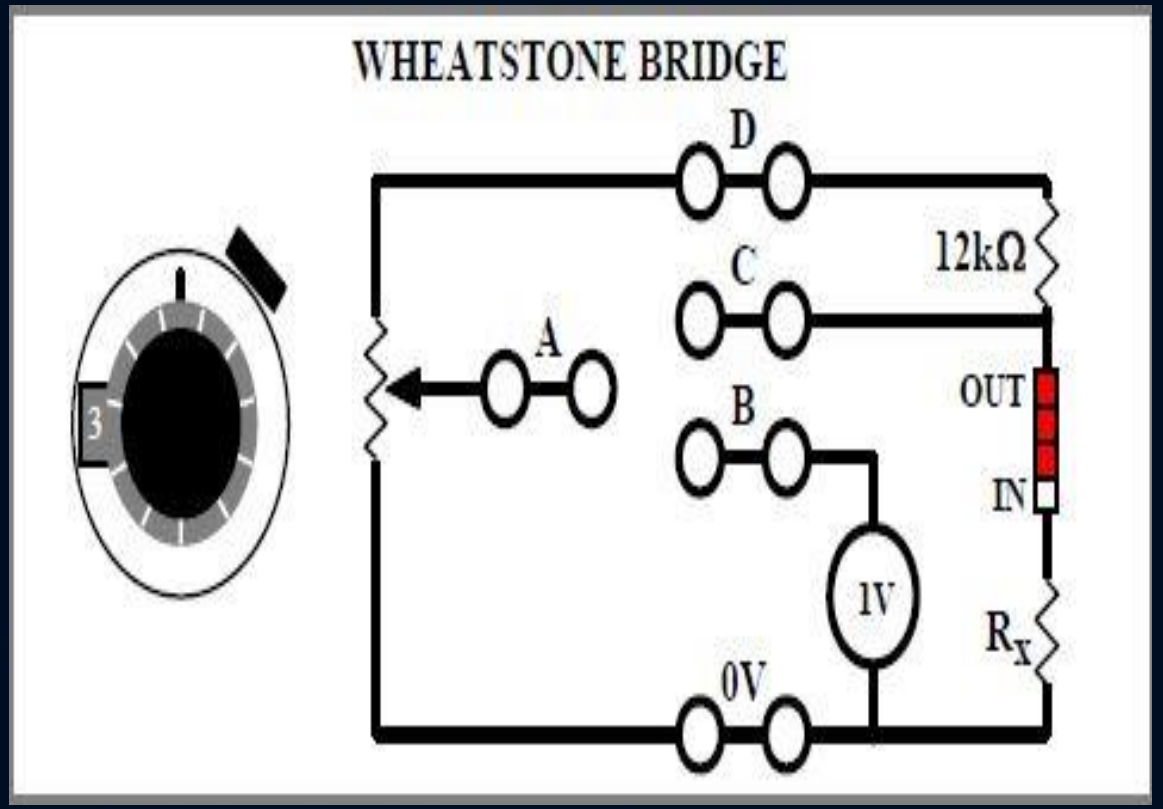
- Study the working of various transducers on the Transducer trainer kit
- Plot the characteristics of the transducers
- Derive conclusions

DIGIAC 1750 Transducer and Instrumentation kit



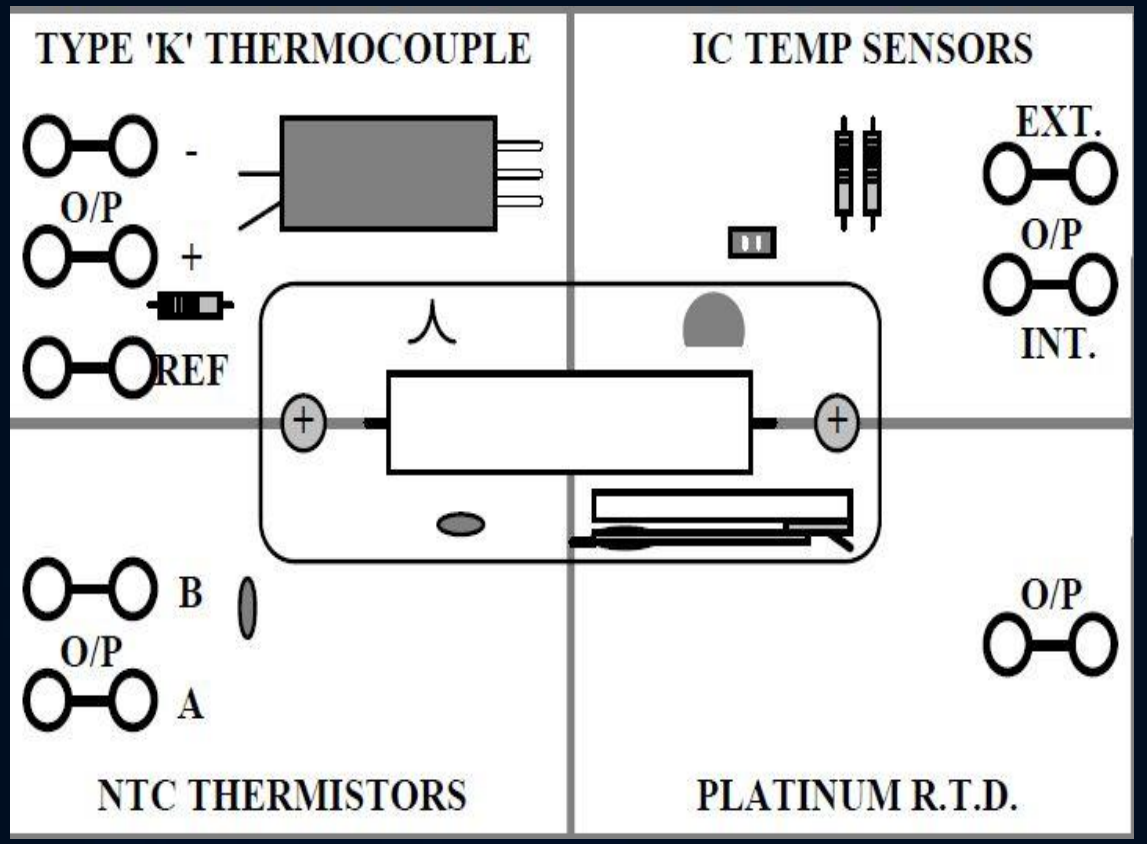
Wheatstone bridge

- Study the principles of basic wheatstone bridge for resistance measurement
- Discuss the factors affecting the resolution and accuracy of measurement



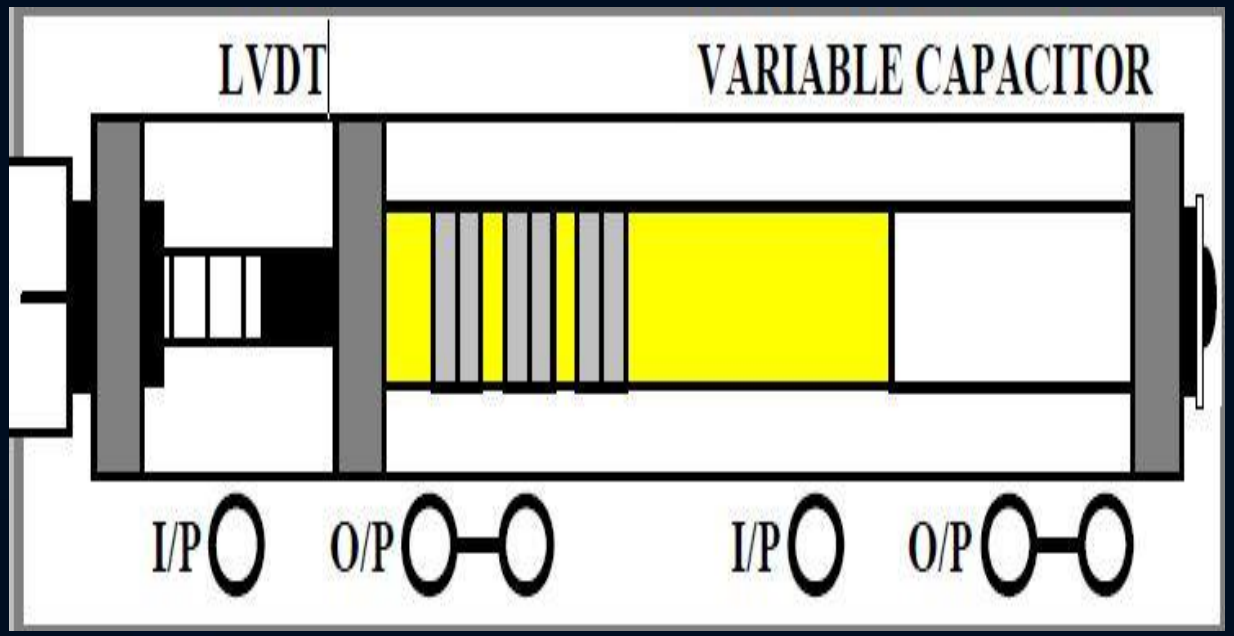
RTD and IC temperature sensor

- Study the principles of Platinum RTD temperature sensor
- Study the characteristics of an IC temperature sensor
- Conclude on the characteristics of RTD and IC temperature sensor



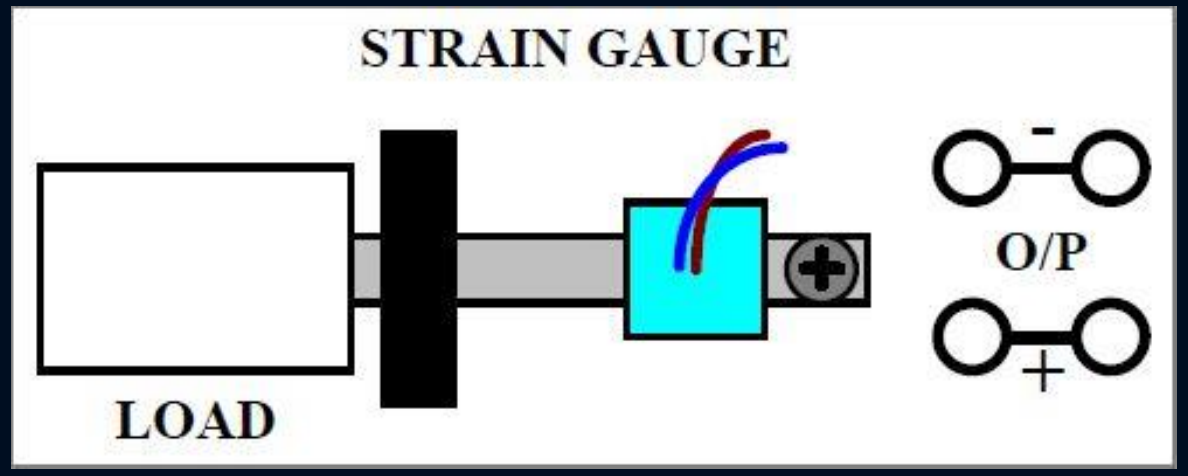
LVDT

- Describe the construction, principle and characteristics of a Linear Variable Differential Transformer (LVDT)



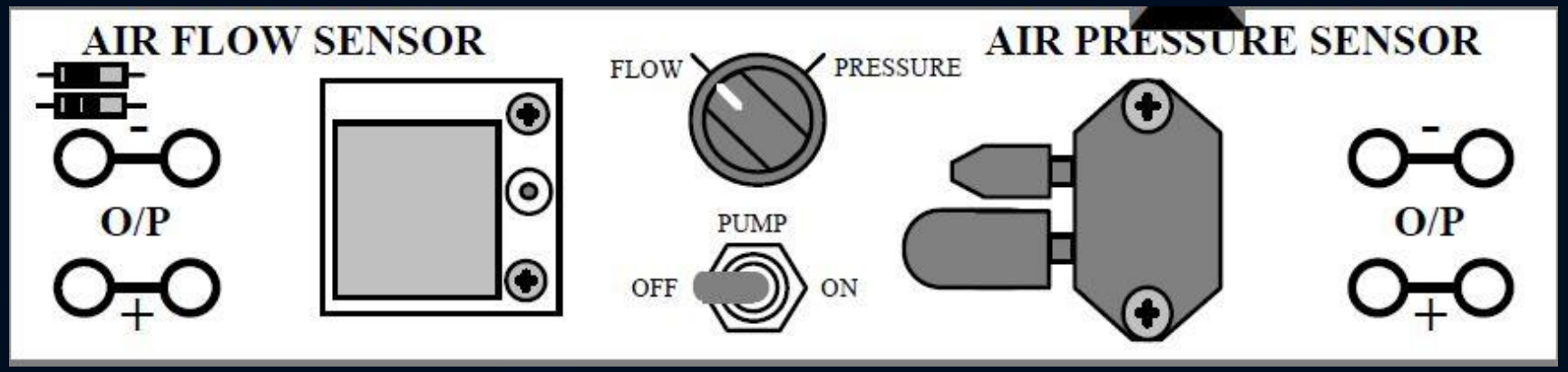
Strain gauge

- Describe the construction and characteristics of a strain gauge



Air flow sensor

- Describe the construction and characteristics of an air flow transducer



Practical applications

WHEATSTONE BRIDGE

- One of the application of the Wheatstone bridge is a light detector circuit using a Wheatstone bridge circuit
- Also used to detect electrical and mechanical quantities

LVDT

- Servo valve positioning
- Product inspection (check the final dimensions)
- Crankshaft balancer
- Automated part inspection in an automated assembly line

Practical applications

STRAIN GAUGE

- Torque and Power Measurements in Rotating Equipment
- Rail Monitoring With Strain Gauges
- Strain gauges are also used in smart bridge technology to detect structural problems early

RTD AND IC TEMPERATURE SENSOR

- Exhaust gas temperature measurement
- Air conditioning and refrigeration servicing
- Micro electronics
- Food Processing