Sensors & Transducers (E6.1.2.1)

E6.1.2

MEASURING NON-ELECTRICAL QUANTITIES

E6.1.2.1
Sensors & Transducers
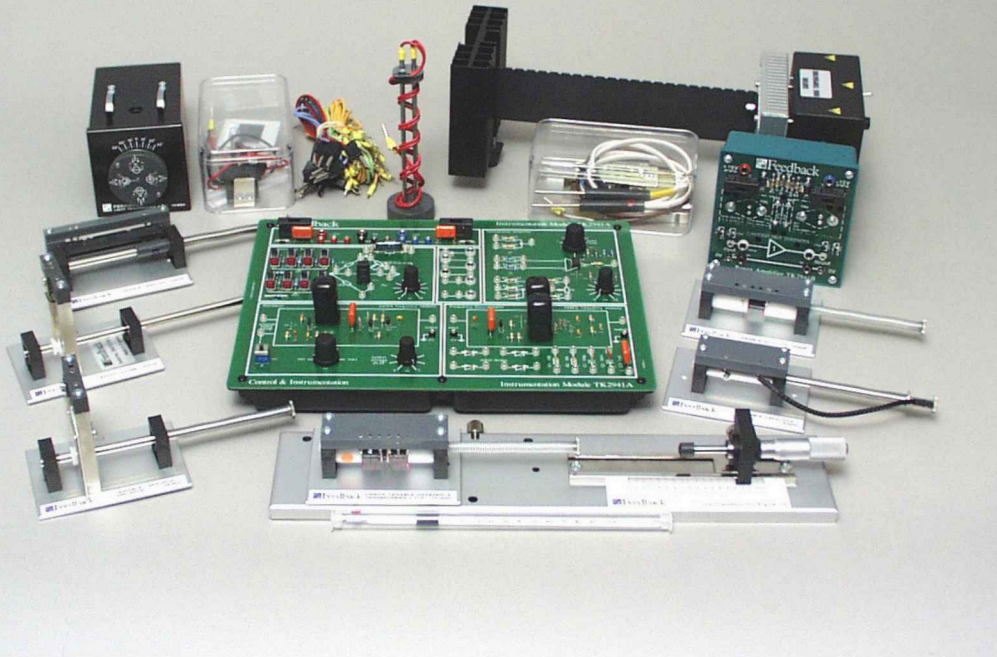
Cat. No.	Description	E6.1.2.1
TK2 942-1	Complete Transducers Kit	1

Sensors & Transducers

Force and temperature are known examples of non-electrical quantities that need to be converted for further processing in automatic control systems. The components of this training system are based on real industrial sensors. The internal structure and the principle of operation of the sensors remain hidden from the user. The sensors are optimized for the specific application.

System

Many engineering applications and systems depend on accurate measurements and monitoring. Transducers are fundamental to the measurement process, consequently the study of different types of transducers, how they operate and how their output signals can be processed, is essential knowledge for engineers.

Features

The TK2942-001 Tranducers Kit introduces students to the concepts and understanding of common transducer devices and standard signal conditioning methods via 28 excellent practical assignments. It comprises the Measurements Package TK2941M, the Electro-mechanical Transducers Kit TK2941E, the Heat Transducers Kit TK2941H, the Light Transducers Kit TK2941L, the Power Supply 01-100 and includes all leads and accessories.

Topics

- Electro-mechanical transducers utilising variation in resistance
- Wheatstone bridge
- Amplifiers
- Liquid depth & resistivity
- Displacement
- Strain
- Electro-mechanical transducers
- Utilising variation in capacitance
- Variable area & distance
- Use of an oscillator & discriminator in FM systems
- Electro-mechanical transducers utilising variation in inductance
- Electromagnetic inductance
- Variable inductance transducer
- Mutual inductance transistor
- Linear variable differential transformer
- Transducer circuits
- Light transducers
- The nature of light
- Photoconductive cell
- Semiconductor photodiode
- Phototransistor
- Spectral response
- Heat transducers