

**Product Name :**  
Sensors and Transducers Trainer

**Product Code :**  
CE251



**Description :**

Sensors and Transducers Trainer

**Technical Specification :**

**Sensors And Transducers Trainer**

This sensors and transducers trainer teaches the operating principles of the sensors/transducers which are most widely used in industry. It is subdivided in two sections: in the lower section there are all the input and output transducers, while in the upper side there are all the signal conditioning systems as well as the instrumentation.

With this system, the student will be able to study the following:

Survey on the features of a position control system

Features of a speed control system

Application of the timer/counter as time meter

Application of the timer/counter as tachometer or frequency meter

Features of a visualization unit with graphic LED bar

Features of a meter with mobile coil

The buffer as compensator of the load effect of an output voltage in the potentiometer

Servo-potentiometer. Variation of the output voltage on the basis of its position

Resistance measurement through a Wheatstone bridge

Voltage measurement through null balance (two methods)

Temperature features through integrated circuit LM 35

Features of: a platinum transducer with resistor on the basis of temperature (RTD), a thermistor N.T.C., a thermistor using an alarm circuit (double thermistor), a thermocouple type  $\mu$ C, a photovoltaic cell, a phototransistor, a detector of light intensity, a variable resistor, a flux meter, a pressure detector, an optoelectronic transducer with application for counting and speed measurement.

A reflective upto transducer and the grey code disk, an inductive transducer, a Hall effect transducer, a tachometer with dc permanent magnet, a dynamic microphone, an ultrasonic receptor, a loudspeaker coil, a buzzer, a dc solenoid, a dc relay, a permanent magnet motor, a dc current amplifier, a current amplifier and buffer amplifier application, a power amplifier and buffer, a differential amplifier, a V/I converter, a I/V converter, a V/F converter, a F/V converter, a full wave rectifier, a comparator, an alarm oscillator circuit, an electronic switch, an adder amplifier, an integrator amplifier, a differential amplifier, a Sample and Hold circuit, a humidity sensor.

The Trainer Includes the Following Input Sensors/Transducers:

linear slide potentiometer, rotary potentiometer, precision servo potentiometer, Wheatstone bridge circuit, thermistors NTC, RTD platinum sensor, IC temperature sensor, thermocouple, phototransistor, PIN photodiode, photoconductive cell, photovoltaic cell, LVDT, extensimetric transducer, linear position sensor, air flow sensor, air pressure sensor, humidity sensor, opto-electronic sensor, opto-reflecting sensor, inductive sensor, Hall effect sensor, dc tachometer, microphone;

The Following Output Sensors/Transducers:

electric resistance, incandescent lamp, buzzer, moving coil loudspeaker, ultrasonic transmitter, ultrasonic receiver, dc solenoid, dc relay, dc motor;

And The Following Signal Conditioning Components: timer/counter, bar graphs, dc voltmeter, dc amplifiers, ac amplifiers, power amplifiers, current amplifiers, buffer amplifier, inverting amplifier, differential amplifier, V/F converter, F/V converter, I/V converter, V/I converter, complete wave rectifier, hysteresis switchable comparator, alarm oscillator, electronic switch, oscillator, filter, switchable low-pass filter, power supply, adding amplifier, integrator with switchable time constant, instrumentation amplifier, sample & hold circuit, gain and off set control amplifier.

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