

# Instrumentation trainer / Universal Sensor Trainer

## Introduction

This trainer is used to perform all the experiments of **.INSTRUMENTATION TRAINER/UNIVERSAL SENSOR TRAINER.** It is useful for experimentation as well as project work . This trainer is designed in fashion, all sections can be operate individually. This is useful for and B.Tech And M.Tech. For research / Project work we give Re-programmable facility & PC interface with Lab view Easy to perform, This trainer is very useful for **ECE, EEE, EE, ME and I&C Eng** streams.

## Features

On board Circuits block diagram , Different test and measuring points, On board +5v ,+12v and -5v power source , Analog Voltmeter to measure output, Different type of transducers learning Input 230 AC voltage operated.



## Technical Specification

0 to 15v DC Analog Volt-meter to Concept diagrams printed on PCB, Facility to measure output voltages using voltmeter. Easy to plug and play on board voltage source, Bridge rectifier to remove ripples, Generate square wave of 5v with 555 timer. BAND PASS FILTER: Band pass filter 1 to 6KHz. Different type of Variable Resistors precision servo potentiometer, Slide potentiometer ,wire wound resistance, carbon track variable resistor.

## Sensors

LVDT: AC TO AC 20mm linear variable transducer to measure displacement , Microphone for converting sound signal into electrical signal with a high gain amplifier, Temperature sensor with change 10mv/1 Degree, NTC type thermistor temp sensor, J Type thermocouple: For measuring high temp with high accuracy Sound Indicator: Provide high volume beep, HALL SENSOR: WH315 sensor is used to sense magnetic field and study of hall effect, STRAIN GUAGE: Strain gauge for measuring stress and force and O/P with high gain amplifier, ULTRASONIC TRANSRECEIVER: Ultrasonic sensor for measuring distance upto 252 inch. HUMIDITY SENSOR: To Measuring environment humidity and gives analog voltage Light depended resister whose resistance vary with respect to light, Photo Transducers: photo diode ,photo transistor ,photo voltaic cell photo conductive cell, Linear variable capacitor (LVC)

## Signal Conditioning

Instrumentation amplifier with high gain value, Amplifier which will amplify differential o/p, CLASS-A amplifier: Class A amplifier with gain variation, Inverter amplifier to invert input signal at 180 degree, X100 AMPLIFIER: Voltage Amplifier of 100 gains to amplify signals.



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