



## SENSORS AND TRANSDUCERS TRAINER



**DL 2312HG**

### DIDACTIC EXPERIENCE:

#### Sensor:

- Slider potentiometric sensor
- Rotary potentiometer sensor
- Linear Variable Differential Transformer Characteristics
- Integrated circuit-based accurate sensor
- Negative Temperature Coefficient sensor - fast response sensor
- Diode temperature sensor - one centigrade, precision design
- Ready-to-use K type sensor Detector, wide range sensor
- Photovoltaic cell – EM radiation intensity sensor
- Photodiode – fast light sensor
- Phototransistor – simple light sensor
- Light Dependent Resistor – total light sensor
- Slotted optical switch - digital sensor
- Reflexive, accurate rotational position sensor
- Hall, non-contact switching sensor
- Inductive proximity sensor
- Tachogenerator, the oldest, the simplest sensor
- Servo-potentiometer
- Strain gauge measurements

This sensors and transducers trainer is designed to teach the operating principles of the most important sensors/transducers. 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.

### TECHNICAL FEATURES:

In a compact structure the DL 2312HG includes sensor and transducers, signal conditioning components and instruments.

**Sensors and transducers:** IC transducer, Thermistor, RTD, Phototransistor, Photovoltaic cell, Photoinductive cell, Photodiode, Slotted optosensor, Reflective optosensor, Hall effect sensor, Inductive sensor, Tachogenerator, DC motor, Servo potentiometer, Strain gauge, Logarithmic slide potentiometer, LVDT, Wheatstone bridge, Carbon track potentiometer, Conductive plastic potentiometer, Linear slide potentiometer, Relay, Microphone, Loudspeaker, Humidity sensor, Ultrasonic sensor, Buzzer, Flow sensor, Pressure sensor.

**Signal conditioning components:** 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, adding amplifier, integrator with switchable time constant, instrumentation amplifier, sample & hold circuit, gain and off set control amplifier.

### Instruments:

Digital voltmeter, timer, frequency meter, counter, bargraph.  
Communication via RS485 serial interface using Modbus RTU protocol.



# AUTOMATION

- Humidity sensor
- Piezoelectric sensor.
- Sound sensor using a dynamic microphone
- Obstacle and distance detector
- Mass air flow, with superior resistance to environments sensor
- Pressure sensor

### Actuators:

- The study of the relay
- Study of the electronic switch
- Study of the sample and hold function
- The motor controlled by three input signals
- Additional considerations in conditioning. Load impedance effect compensation
- Additional considerations in conditioning. The use of the gain for accurate control

### Process control:

- Alarming circuit in over-temperature condition Page
- Optical alarm for over-speed regime of the DC motor
- Level monitoring for pump control

Complete with manuals, connecting cables and data acquisition software.

