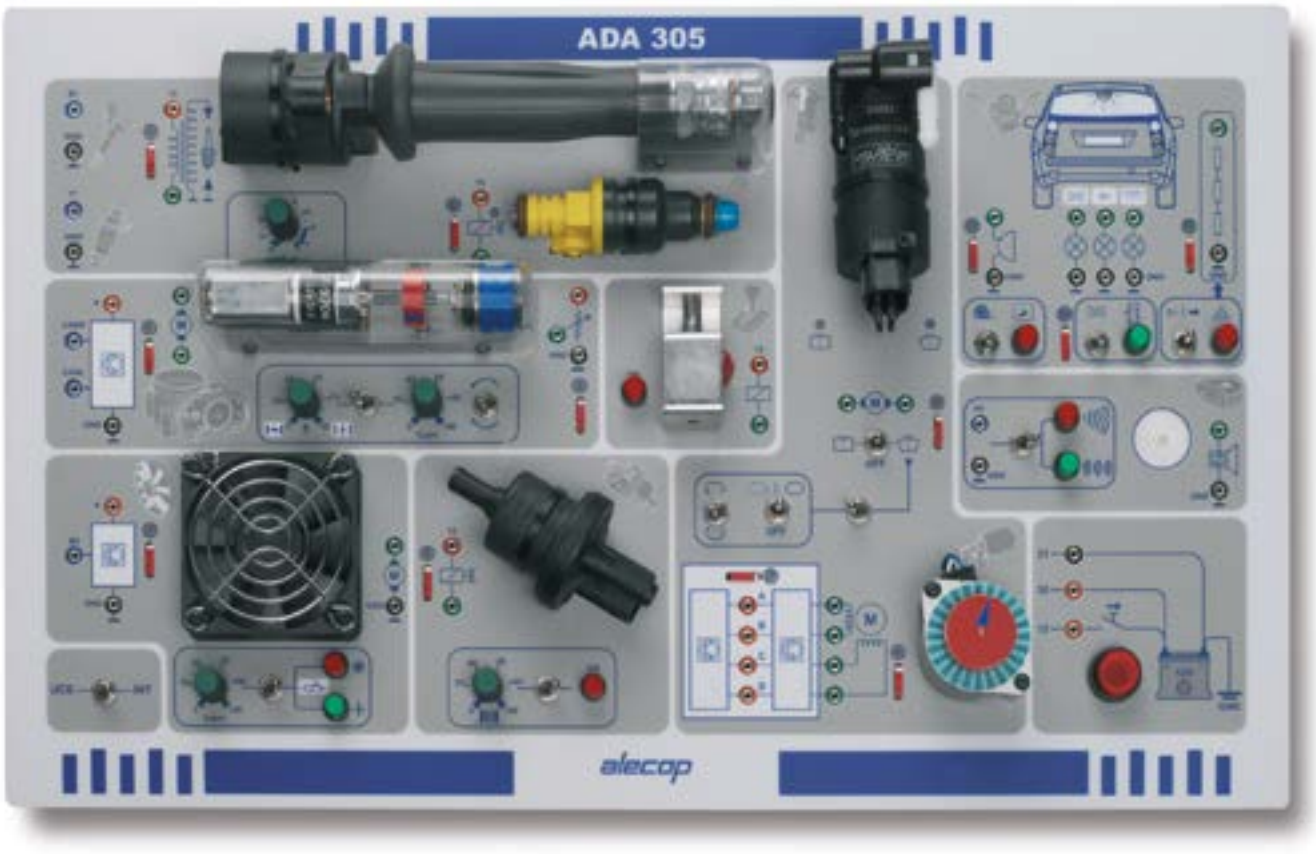
ADA 305

Actuator application for the automotive industry

Equipment for the study of actuators in a car

Ref.: 9EQ305AA6C - 230 V Ref.: 9EQ305AA3C - 115 V



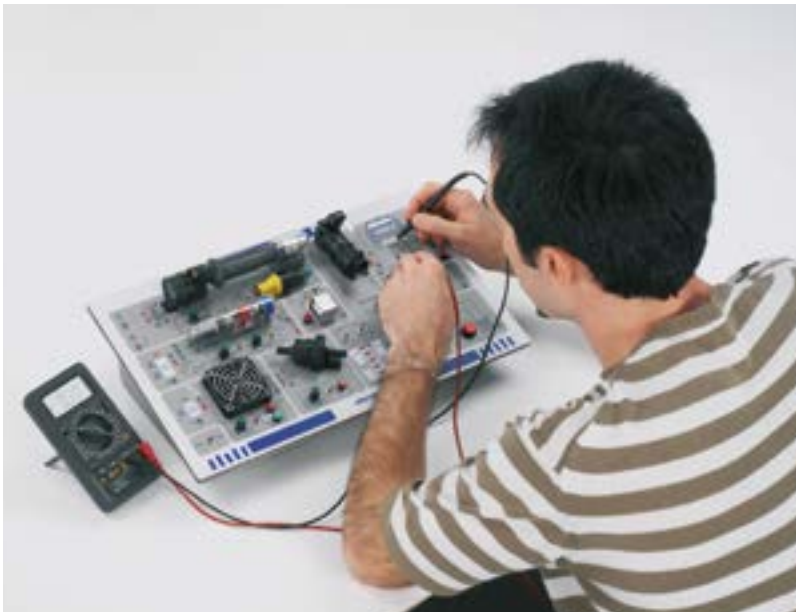
Equipment conceived to study different actuators, depending on technologies, types of regulation and means of control used in the different systems which can be found at present in a vehicle. These actuators are controlled from the electronic control unit ECU based on control algorithms programmed on the unit, which are responsible for making the system respond to the variation required for the behaviour of the vehicle. The equipment has 10 actuators, similar to the ones in use at present in a car (spark plug, injector, step motor, canister valve, etc.), through which, and thanks to the combination of different technologies they use and of the different means of control, they allow a high number of vehicle actuators to be studied. Some of the equipment actuators can be controlled from application UCE ADA304, and can together with the ADA303 sensor equipment form a complete control system.

Technical characteristics

- Autonomous equipment for the study of actuators in a car .
- The actuators included in the equipment are:
  - Ignition coil with incorporated spark.
  - Electromagnetic injector .
  - DC Motor: Open loop speed control and closed loop control position potenciometre on the shaft.
  - Cooling fan: Analogue or series resistance speed control.
  - Electrovalve: All/Nothing Control (ON/OFF) and linear control by means of Pulse Width Modulation (PWM).
  - Electromagnet: ON/OFF Control.
  - Windscreen washer motor pump: Motor pump control in both directions.
  - Step Motor: Two working speeds.
  - Actuators related with lighting: Position-brake light, emergency warning lights, lights on warning.
  - Acoustic actuator, piezoelectric buzzer: Actuation of the same with two different tones.
- The control technologies implemented are:
  - Digital control.
  - Analogue Control.
  - Control by CAN bus.
  - Control by pulse width modulation PWM.
- Testing points protected against possible incorrect manipulations, for carrying out measurements at the different points of the circuit.
- Possibility of controlling various actuators from the control unit ECU-ADA304.
- Measurements: 446 x270 x100 mm.

Training to be carried out

- Analysis of how the different actuators work.
- Testing electrical/electronic signals with without voltage and under voltage.
- Diagnosis of faults in the actuators: Lack of supply, actuator broken, short circuit to mass or to actuation positive, failure in the communication bus of the actuator (CAN-LIN).
- Instrumentation handling: Oscilloscope, Polymeter.



Equipment composition

- ADA305 Panel.
- User manual.
- Practise activity manual.
- Accessory store.

Contents to study

- Technologies used in the actuator design.
- Types and characteristics of actuators.
- Types actuator control systems (analogue, digital, CAN bus, LIN bus).