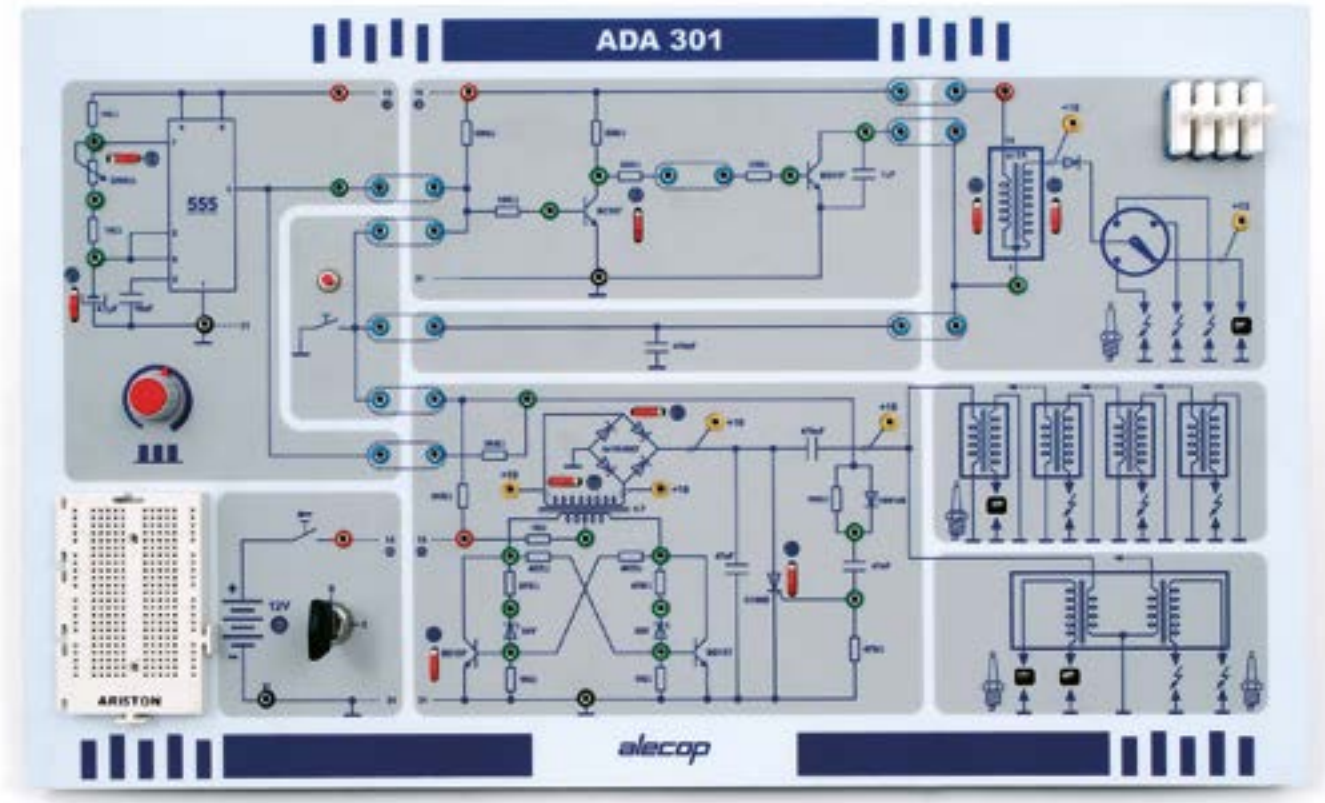
# ADA 301

## Application of electronics for automotive

Equipment to study the electronics applied in automobiles.

Ref.: 9EQ301AA6C - 230 V  Ref.: 9EQ301AA3C - 115 V




The ignition circuit has been taken as the common theme throughout the process of teaching applied electronics in the automobile. This circuit has undergone significant improvements throughout history until reaching the current solutions which are largely derived from the use of electronics. This has been one of the reasons why we have decided to base part of the study of electronics for the car industry on this real automobile application. The application has different electronic circuits which can be combined together to assemble the different systems used in designing ignition circuits:

- Ignition spark generation using a switch.
- Ignition spark generation using a transistor circuit.
- Ignition spark generation using a condenser discharge system.

## Technical characteristics

- Incorporates the electronic blocks which are necessary to analyse the following circuits:
  - Power pack
  - Circuit to generate sparks using a switch
  - Multi-vibrator circuit or square signal generator.
  - Circuit to generate sparks using a transistor.
  - Circuit to generate sparks using a condenser discharge system.
  - Power circuit for a CC motor.
  - Circuit to vary the speed of a CC motor
  - Circuit to vary the luminosity in the lights.
- Test points to take measurements on the different circuits.
- Accessibility to all the electronic components for analysis under voltage or without voltage.
- Possibility of generating disfunctions in different components of the equipment.
- Possibility of doing different electronic assemblies on a proto-board.
- Measurements: 446 x 270 x 100 mm.

## Skills to be developed

- Using equipment to measure electronic components and circuits and interpret the data obtained with the multimeter and the oscilloscope.
- Checking electronic components not under voltage and under voltage.
- Analysing general electronic circuits and linking them to car components.
- Assembling basic electronic circuits.
- Running diagnostics and repairing simple faults in car electronic systems.

## Contents to be studied

- Study and checking the operation of different electronic components: Diode, transistor, zener diode, thyristor.
- Basic study of the different ignition systems used in cars.
- Circuit which inverts the polarity of the current in the transistor ignition circuit.
- Current amplifying circuit.
- Integrated circuit: NE555 Multi-vibrator.
- Rectifier circuit.
- Generation of variable time signals.
- Generation of high voltages starting from low voltage.
- Condenser discharge circuit on coil primer.
- Voltage variation applied to a device (engine, lamp, and valve).

## Equipment composition

- ADA301 Panel.
- User's manual.
- Manual of practical activities.
- 12V cc motor.
- 12V/6w light.
- Electronic components to assemble complementary circuits.
- Accessory store