

ADA 300

Application of electricity for automotive

Equipment to study basic automotive electricity.

BASIC ELECTRIC CIRCUITS

Ref.: 9EQ300AA6C - 230 V

Ref.: 9EQ300AA3C - 115 V



The purpose of this equipment is to familiarise students, in a flexible way, with basic electricity in general and, more specifically, its application in cars. The application can be used to analyse and check different basic electric circuits as well as their components without wasting any time on assembly and dismantling. The configuration of the circuit to be analysed is carried out quickly by means of connection bridges. The equipment enables also the generation of faults in several of the circuit's components. However, if you want to extend some activities, the application has a complementary circuit assembly board. This board enables electric/electronic elements to be interconnected (resistances, capacitors, diodes, etc.) in a quick and easy way without the need to solder the components, making it possible to reuse the components for several different assemblies.



Technical specifications

- Incorporates the following components/circuits:
 - Power circuit: Alternating current (AC) and direct current (DC).
 - Circuit with lamps: Parallel, series, mixed, lamps with different powers.
 - Circuit with resistances: Parallel, series, mixed, linear and logarithmic potentiometer.
 - Circuit with relay.
 - Circuit with different conductor materials: copper, nichrome and constantan.
 - Full wave/half wave rectifier circuit.
 - Circuits with capacitors: filter, power store.
 - Circuit with logic gates.
- Test points to take measurements on the different circuits.
- Accessibility to all components for analysis under voltage or without voltage.
- Possibility of generating disfunctions in components of the equipment.
- Possibility of doing different electric/electronic assemblies on a proto-board.
- Measurements: 446 x 270 x 100 mm.



Skills to be developed

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

Equipment composition

- ADA300 panel.
- User's manual.
- Manual of practical activities.
- Wires with different conductor materials.
- Electric/electronic components to assemble complementary circuits.
- Accessories store.

Contents to be studied

- AC/ DC power supply.
- Batteries: Characteristic. Association of batteries in series and in parallel.
- Lamps. Identification. Association of lamps.
- Ohm's law: voltage, current, resistance.
- Association of resistances in series and in parallel.
- Characteristics of linear and logarithmic potentiometers.
- Electric power.
- Conductor materials: Copper, nichrome and constantan.
- Study of capacitors in DC: Filter, power store.
- Binary logic: AND, OR, EXOR, NOT, NOR and NAND.
- Full wave/Half wave rectification, filtering with capacitor.
- Components: Resistances, capacitors, diodes, leds, potentiometers, lamps, relays.