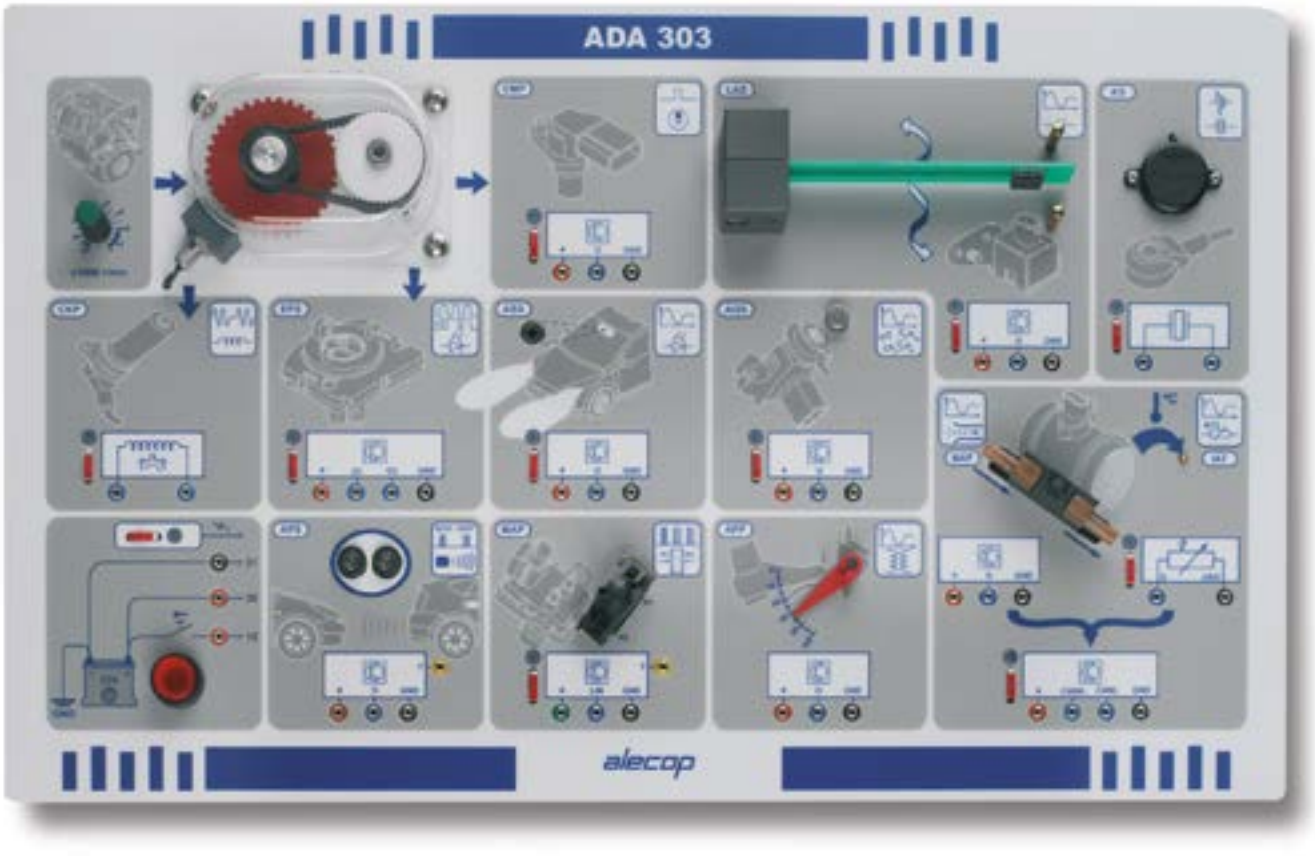
ADA 303

Application of sensors for automotive

Equipment for the study of sensor in a car.

Ref.: 9EQ303AA6C - 230 V Ref.: 9EQ303AA3C - 115 V



Equipment conceived to study different sensors, depending on technologies, types ofregulation, capturing parameters and means of transmission of information used in the different electrical electronic systems which can be found at present in a vehicle. Thanks to these sensors the electronic systems receive information of the physical and or chemical magnitudes necessary through the ECU in order to make the calculations required to start the different actuators working. The actuators will be in charge of producing the physical variations which make the different electromechanical components of the vehicle work. The equipment has 12 sensors, similar to those actually used in the car (CKP-CMP-MAF- MAP etc.) through which and thanks to the combination of different technologies used in their construction a high number vehicle sensors can be studied. Some of the signal reception elements can be connected to the UCE ADA304 application, and along with the ADA305 actuator they make the equipment form a complete electronic control system.

Technical characteristics

- Autonomous equipment for the study of sensors in a car.
- The equipment includes sensors using different types of technology:
  - Crankshaft position sensor: inductive.
  - Camshaft sensor: Hall.
  - Steering column sensor (position, speed): Optical.
  - Light sensor: Optical.
  - Parking distance sensor: Ultrasound.
  - MAP collector absolute pressure system: Piezoresistive.
  - Lateral acceleration sensor for electronic stability control: Capacitive.
  - Air quality sensor: MOS (Metal Oxide Semiconductor).
  - Accelerator pedal position sensor APP: inductive.
  - KS Knock sensors: Piezoelectric.
  - Air mass sensor MAF: Hot wire.
  - IAT air temperature admission sensor: NTC Resistive.
- The communication of the sensors with the outside is carried out by different means:
  - Digital output.
  - Analogue Output.
  - Communication by CAN bus.
  - Communication by LIN bus.
- Each sensor has information printed on it about:
  - The technology used.
  - Type of output generated.
  - Physical shape of the sensor in the vehicle.
- Testing points protected against possible incorrect manipulations, for carrying out measurements at the different points of the circuit.
- Possibility of generating faulty situations in the signal sent by the sensors to the ECU, enabling the analysis of malfunction in the system.
- Possibility of connecting various sensors to the ECU control unit panel ADA304.
- Measurements: 446 x270 x100 mm.

Training to be carried out

- Analysis of the working of the different sensors and their association in the different automobile systems.
- Testing electrical/electronic signals without voltage and under voltage.
- Diagnosis of faults in the sensors: Lack of supply, broken sensor, short circuit to mass or to positive of the sensor, failure in the bus of communication of the sensor (CAN-LIN) etc.
- Instrumentation handling: Oscilloscope, Polymeter.

Equipment composition

- ADA303 Panel.
- User manual.
- Practise activity manual.
- Accessories: Syringe and plastic tubes.
- Accessory store.

Contents to study

- Technologies used in sensor design.
- Types and characteristics of sensors.
- Types outputs (analogue, digital, CAN bus, LIN bus).