Electricity and electromagnetism set with generator (CC), (AC) and open motors (AC)

EQ289A

Function

Intended for physics laboratory and physics experiments on: Electricity. The association of lamps in series. The associations of lamps in parallel. A way to measure the internal resistance of a voltmeter. The color code in the characterization of a resistor and its electrical resistance. Electrical resistance, Ohms law. The identification of a non-ohmic resistor. The association of resistors in series. The association of resistors in parallel. The mixed association of resistors. The potentiometer as a voltage divider. The function of the diode in a circuit. Kirchhoffs mesh law. Kirchhoffs law of knots. The equivalent of a series association of capacitors. The equivalent of a parallel association of capacitors. Measurements in electrical circuits and electrical power. Measurement of electrical power dissipated in a circuit, with sensors. Magnetism. Identifying the Earths magnetic field with a sensor. Identification of magnetic poles and field lines, using a sensor. Electromagnetism. Oersteds magnetic sensor experiment. Electromagnetic phenomena and electromagnetic induction. Electromagnetic induction. The magnetic field generated by an electric current in a straight conductor, with a sensor. Magnetic induction between parallel and straight conductors carried by electric current, with sensor. The mapping of magnetic field lines in a Helmholtz coil. Magnetic induction inside a solenoid carried by an electric current, with sensor. The voltage step-up and step-down electrical transformer. The working principle of AC single-phase induction electric motor. The working principle of AC three-phase induction electric motor. The working principle of the DC electrical generator by magnetic

induction (permanent magnet). The working principle of the DC electric generator by electromagnetic induction (with electromagnet). The working principle of AC electric generator by electromagnetic induction, etc.

Knowledge areas

Physics