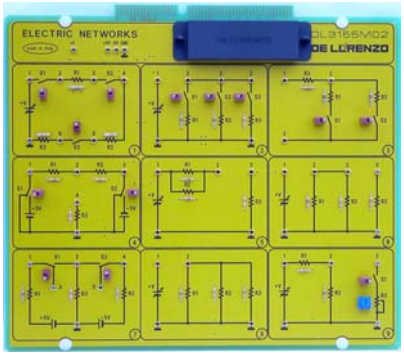
TIME ELECTRONIC BOARDS

ELECTRIC NETWORKS



DL 3155M02

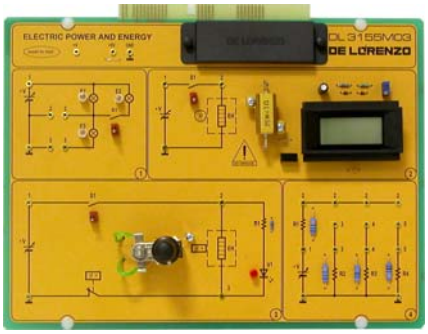
Theoretical topics:

- Elements of an electrical network: node, arm, mesh
- First Kirchoff principle
- Second Kirchoff principle
- Series resistances
- Parallel resistances
- Series-parallel connection
- Voltage dividers
- Theorem of the effect superposition
- Thevenin theorem
- Norton theorem
- Millman theorem
- Fault simulation

Circuit blocks:

- Series resistors and Kirchoff voltage law verification
- Parallel resistors and Kirchoff current law verification
- Series-parallel resistors
- Effect superposition
- Thevenin theorem
- Norton theorem
- Millman theorem
- Voltage divider

ELECTRIC POWER AND ENERGY



DL 3155M03

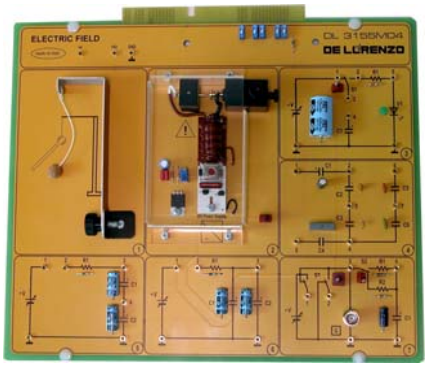
Theoretical topics:

- The power and the electric energy
- Their measurement
- Thermal effect of the current: Joule's law
- Practical applications of the Joule's law
- Energy balance and efficiency
- Energy transfer from a supply unit to a load
- Adaptation of the load
- Fault simulation

Circuit blocks:

- Electrical power in parallel connection
- Electrical power in series connection
- Energy: Joule's law
- Bimetallic sheet switch: thermostat
- Energy balance and efficiency

ELECTRIC FIELD



DL 3155M04

Theoretical topics:

- Fields of force
- The field vector
- The potential and the potential difference
- Characteristics of the electric field and its measurement units
- The electric field generated by a uniformly loaded unlimited plane surface
- The electric field of a double plane surface
- Capacitors: composition, identification, connection
- Charge of capacitors
- Discharge of capacitors
- Energy of the electric field in the capacitors
- Fault simulation

Circuit blocks:

- Superficial electrisation of the bodies
- Electrostatic machine
- Energy of the capacitors
- Type of capacitors
- Capacitors in series
- Capacitors in parallel
- Charge and discharge of a capacitor