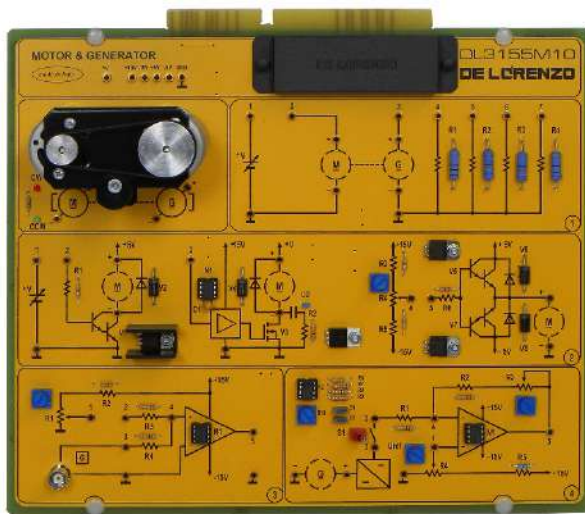# MOTOR AND GENERATOR

DL 3155M10

The design and construction of electronic circuits to solve practical problems is an essential technique in the fields of electronic engineering and computer engineering.

With this board the students can study the operating principle of the generators and direct current motors, their power and efficiency and their speed regulation with PWM and closed loop.

THEORETICAL TOPICS

- Separate excitation dc motors
- Shunt excitation dc motors
- Series excitation dc motors
- Compound excitation dc motors
- Power and efficiency
- DC motors as generators
- DC motors as tachometric dynamo
- DC motor speed control
- Transistor operation
- Semi controlled single-phase bridge operation
- Totally controlled single phase bridge operation
- Linear control and PWM control
- Closed loop control
- Fault simulation

CIRCUIT BLOCKS

- Measurement of the speed of a dc motor
- Counter electromotive force of a dc motor
- Load operation of a dc motor
- Power and efficiency
- Control circuit of a dc motor
- Adjustment of the PWM speed
- Adjustment of the closing loop speed

Complete with theoretical and practical manual.

Dimensions of the board: 297x260mm

CAI SOFTWARE:
Each board of the TIME system can be supplied complete with a Student Navigator software that allows students to perform their learning activities through a Personal Computer, without the need for any other documentation.
Ordering code: please add SW after the code of the board (i.e. DL 3155M10SW)

Required:
POWER SUPPLY NOT INCLUDED
Base frame with power supply (completed with connecting cables):
➢ **DL 3155AL3** - Base frame with power supply and interface to pc and virtual instrumentation
➢ **DL 3155AL2** - Base frame with power supply and interface to pc

Basic power supply (connecting cables not included):
➢ **DL 2555ALF -** DC power supply ±5 ±15 0±15 Vdc, 1A
➢ **TL 3155AL2 -** Connecting cables
Choosing this power supply, for the execution of the experiments, it is normally required the use of an oscilloscope and two multimeters.