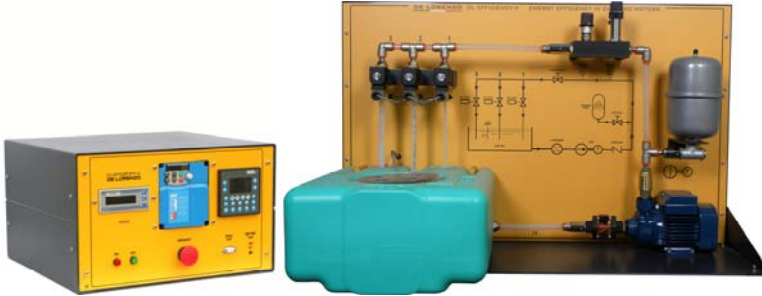




## ENERGY EFFICIENCY IN ELECTRIC MOTORS



### DL EFFICIENCY-A

#### TRAINING OBJECTIVES

- Learning and setting a Multifunction Network Analyzer (MNA)
- Learning and programming an industrial Variable Speed Drive (VSD)
- Introduction to electric motors
- Learning and programming an advanced PLC with operator interface
- Introduction to the different sensors/actuators used in this trainer and their main features (float switch, flow sensor, pressure sensors and solenoid valves)
- Learning the energy savings with electric motors and drives
- Possibility to import data (saved on microSD card) in Microsoft Excel environment for processing.

Approx. packing dimensions: 1.04 x 0.63 x 0.72 m.  
Net weight: 46 kg.

Trainer for the study of the energy efficiency in the control of electric motors.

The trainer allows studying the energy efficiency in a hydraulic circuit with motor driven pump controlled by an inverter.

The trainer is composed of:

- A didactic panel on which the components of a hydraulic circuit are assembled. The circuit simulates, in a schematic way, an aqueduct. From a reservoir tank the water is flown, by means of a pump, through an instrumented hydraulic circuit that ends with a set of 3 water intakes of different diameters and controlled by electro-valves.
- A control module containing: a PLC, an inverter, a network analyzer with its interface module

#### TECHNICAL SPECIFICATIONS

- 3-phase motor driven pump, 0.37 kW, with cast iron body and brass impeller, max. flow rate 40 l/min.
- Three 2-way NC electro-valves, direct control, brass body
- Flow-rate transducer, 1 to 40 l/min.
- Pressure transducer, 0 to 10 bar, output signal range 0-10 V
- Pressure switch, 1 to 12 bar
- PLC, 12 digital inputs, 4 analogue inputs, 6 relay outputs
- Inverter, 0.4 kW, PID control mode as standard, 7 user-configurable preset speeds
- Multifunction network analyzer, line voltages and currents, total active and reactive power, power factors, active and reactive energies, etc.