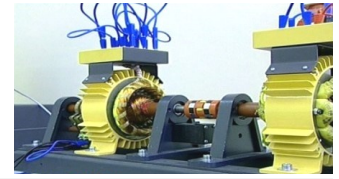


OEM ELECTRICAL MOTORS LABORATORY

The O.E.M. - **Electrical Motors** is a complete modular laboratory that introduces the student to **Electrical Motor components assembling, both for direct current and alternating current**. The nominal motor power is limited to 300 W.

The students during training carry step-by-step a well prepared assembly in order to understand the operation principles of every component before performing practical tests of the assembled electromotor operational characteristics.

The system is designed in such a way as to prevent the risk of accidents and to take into consideration the students safety as a priority.



OEM 101 Basic Assembly Motor Kit

OEM 102 Power Unit

OEM 103 Control Unit

OEM 104 Loads Unit

TOPICS

The laboratory consists of a set of equipment which provides a start-to-end laboratory workshop for electrical motors with training in the following major topics:

- Electrical rotary machine
- Theory and experiments
- DC motors and Generators
- 3 phase AC and single phase motors
- Induction motors
- Multispeed Induction-Dahlander motor
- Three-phase synchronous
- Induction control
- Transformers and transformation
- Alternators
- Universal motor

OEM 1 ELECTRICAL MACHINES ASSEMBLY

TECHNICAL FEATURES

The electric machines lab sets are provided assembled and can be disassemble at anytime during the coursework. All necessary auxiliaries and tools are provided with the equipment.

The **AC assembly** includes a stator with 24 slots and 6 windings in order to change the pole number, 2 or 4; slip ring rotor with 18 slots (double layer winding) and squirrel cage rotor.

The **DC assembly** includes a stator with 2 field poles (series, shunt and compound excitation windings) and 2 interchangeable poles; a rotor with 20 slots and 40 segments.

Lab assembly kit:

- Electrical Motor assembly Base
- Ball bearing housings
- Motor coupler
- Optical speed transducer
- Dc Stator
- 3 Phase AC Stator
- Commutator Rotor
- Squirrel cage Rotor
- Slip ring rotor
- Brush holder with 2 and 3 brushes

Additionally the set includes:

- Synchronization board for parallel connections.
- Pole switching connection boards
- Rotor rotation calibrator.

The set comes with all appropriate tools, brackets and auxiliaries for assembly and disassembly. The set comes with all the required cables and leads for testing and experimentation.

DIDACTIC PROCESS

The assemblies have industrial features and provide:

- Theoretical background relevant to each topic and practical examples to comprehend the theoretical model.
- A series of specific experiments to support the understanding of the theory and comprehend with hands on practice the operation of rotary electrical machines.
- Tests/Questions for the students and fault testing.

The system is accompanied by technical manuals for theory and exercises.

OEM 2 POWER SUPPLY

The laboratory is provided with a variable DC /AC power supply with the characteristics described on the table on the right:

OEM 2: AC Outputs	
Three-phase:	24V / 14A
	42V / 10A
Single-phase:	0 – 48V / 5A
	0 – 10V / 12A

OEM 3 CONTROL UNIT

This controller allows the variation of the speed motor and the measurement of voltage, current and rotational speed and includes the following instruments:

- 2 Voltmeters, DC/AC
- 2 Ammeters, DC/AC
- Speed meter: 0 – 4000 rpm and over-speed protection.
- Power supply: 220 V, 50/60 Hz

OEM 2: DC Outputs	
	32V / 14A
	42V / 10A
	0 – 40V / 5A
	0 – 8V / 12A

OEM 2 : Power input	
3 x 380 V + N	50/60 Hz

Power cut off
Over speed limit

OEM 4 LOADS

This controller allows the application of various, resistive, capacitive and inductive loads for the testing of motors and includes:

- Resistors: 3 x 15 Ohm, 100 W, 0 – 2 Ohm, 100 W
- Capacitors: 3 x 80 μ F, 150 V
- Rheostat: 0 – 100 Ohm
- Power supply: 220 V, 50/60 Hz

RECOMMENDED AUXILIARIES

System requires the **FP306 Fault insertion** Modules.

