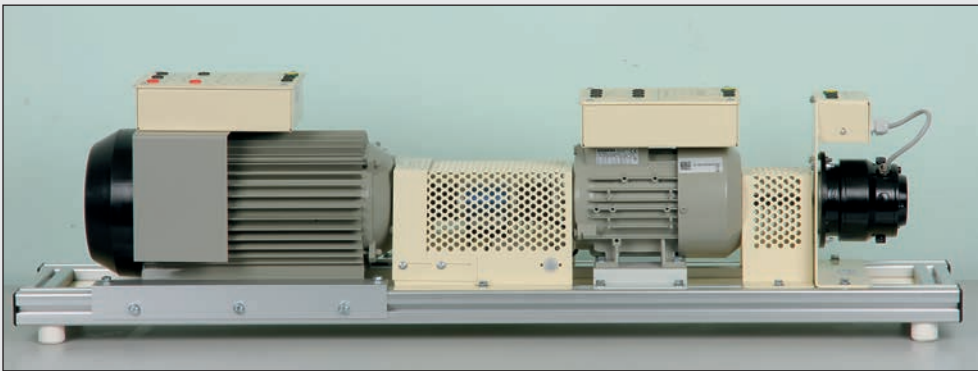


STUDY OF THE 3-PHASE ASYNCHRONOUS MOTOR & THE DC GENERATOR 300W

Ref. PACK-ACDC1

COMPOSITION OF THE SET

- 1 Squirrel cage three-phase motor
- 1 Shunt separated DC generator
- 1 Torque sensor
- 1 DC tachogenerator
- 1 Variable three-phase power supply
- 1 Resistive load
- 1 Power supply inductor DC machine
- 1 Rheostat
- 1 Display unit torque and speed
- 3 Magnetoelectric voltmeters
- 2 Magnetoelectric ammeters



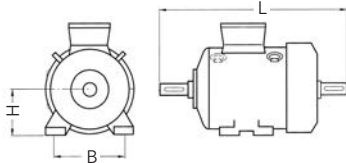
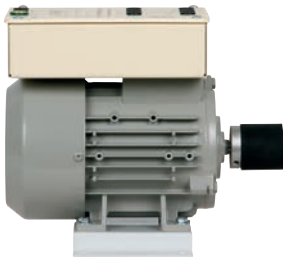
EDUCATIONAL OBJECTIVES

- Study the stator and the rotor of an asynchronous motor.
- Study the pairs number of poles and the influence on the rotating speed.
- Note, calculate and plot the electrical and mechanical quantities of the motor.
- Realize the balance sheet of motor powers.
- Study the armature/inductor windings of a DC machine.
- Understand the influence of the Inductor winding on the speed of rotation.
- Note the voltages and currents in the armature and in the inductor.
- Note, calculate and plot the electrical and mechanical quantities of the generator.
- Realize the balance sheet of generator powers.
- Use an ammeter clamp.

SQUIRREL CAGE INDUCTION MOTOR

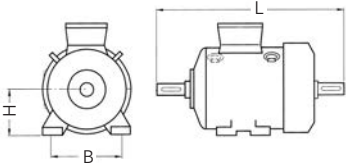
This engine works as well with a speed variator as directly connected to a 3-phase supply.

U (V)	230/400V
I (A)	1.5 / 0.9
H / B / L	90 / 172 / 235mm
Weight	8.2 kg



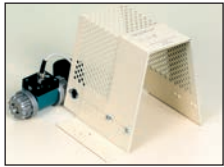
SHUNT SEPARATE DC GENERATOR

U (V)	220V
I (A)	2A
H / B / L	90 / 172 / 420mm
Weight	20 kg



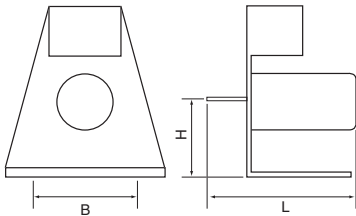
TORQUE SENSOR

Sensor range	20 Nm
Use with	an important inertia
Torque output signal	0 to 5V for the measuring span in Nm (0 to -5V according the rotating way).
Maximum rotating speed	2000 rpm.
Sensor supply	between 12 and 28 VDC.



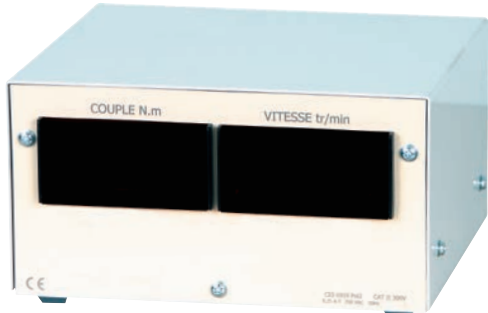
DC TACHOGENERATOR

Deliver a continuous voltage proportional to the rotating speed.	
Voltage at 1000 rpm	10V
Connector	safety terminals
H / B / L	90 x 172 x 170mm



TORQUE & SPEED DISPLAY UNIT

Range (torque)	200,0 Nm
Analogical output	-5V / 0 / +5V
Range (speed)	2000 rpm



POWER SUPPLY INDUCTOR DC MACHINES

This power supply includes :

- one variable DC supply with voltmeter & ammeter
- one fixed DC supply

Protection of users is ensured by galvanic insulation of outputs.

- Mains: Mains cable
- On/Off: General switch and light
- DC variable output: 0-240V / 3A
- DC fixed output: 190V / 1A
- Input protection: by time delay fuses
- Output protection: by thermal magnetic circuit-breakers
- Smoothing: by capacitors
- Dimensions / weight: 210 x 245 x 350mm / 20 kg



RESITIVE LOAD

Power 0.5kW
Nb switches: 6
Variation in steps of 5%
Portable type
Weight: 15 kg



MAGNETOELECTRIC AMMETER

IDC	100μA to 10A (1,5%)
IAC	10mA to 10A (2%)
mV	100mV for the use of external shunts
Scale length	90mm
Protection	CAT III 600V PoI 2
Safety terminals	yes
Fuses	HPC 500V 3A + HPC 500V 10A
Dims / Weight	170 x 110 x 53mm / 500g



MAGNETOELECTRIC VOLTMETER

VDC	100mV to 1000V (1,5%)
VAC	3 to 1000V (2%)
Scale length	90mm
Protection	CAT III 600V PoI 2
Safety terminals	yes
Fuses	HPC 500V 500mA
Impedances	VDC : 20kΩ/V - VAC : 6,3kΩ/V
Dims / Weight	170 x 110 x 53mm / 500g

AC/AC FREQUENCY CONVERTER

PRIMARY IN 230V SINGLE-PHASE 50/60Hz
Output voltages: 3-phase 230V variable frequency
Constant output current 4.4A
Maximum transient current 5A



RHEOSTAT FOR INDUCTOR

0 to 3300Ω / 0.44A



SAFETY LEADS Ø4 REAR STACKING

- Very supple wire 30A
- Contacts formed into spring strips
- Working voltage 600V CAT III
- Test voltage 7400V during 1 mn
- Conforms to the standard CEI1010

MOTORS STAND AND ACCESSORIES

The set is supplied with coupling, fastening, covers and guide rails.

