

STUDY OF THE DC POLYEXCITATION MOTOR 300W

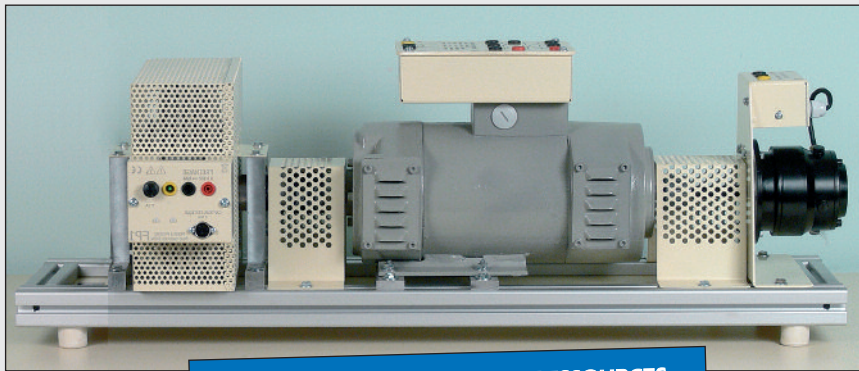
Ref. PACK-DCFR1

COMPOSITION OF THE SET

- 1 Polyexcitation motor
- 1 Powder brake
- 1 Torque sensor
- 1 DC tachogenerator
- 1 Power supply for brake
- 1 Display unit torque and speed
- 1 Power supply inductor DC machine
- 1 Rheostat
- 2 Magnétoelectric voltmeters
- 1 Magnétoelectric ammeter
- 1 AC & DC multimeter clamp

EDUCATIONAL OBJECTIVES

- Study the armature/inductor windings of a DC machine.
- Understand the influence of the Inductor winding on the speed of rotation.
- Measure the voltages and currents in the armature and inductor.
- Note, calculate and plot the electrical and mechanical quantities of the motor.



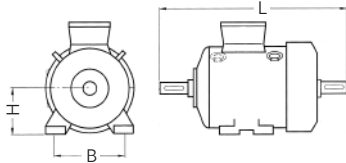
DELIVERED WITH TEACHING RESSOURCES

- Realize the balance sheet of motor powers.
- Understand the working of a powder brake.
- Use an ammeter clamp

POLYEXCITATION MOTOR

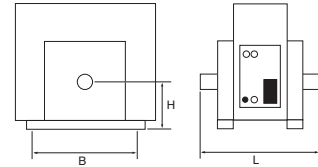
Driven motor (can operate in hypersynchronous generator).

U (V)	220V
I (A)	2.2A
H / B / L	90 / 172 / 420mm
Weight	26 kg



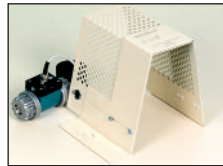
POWDER BRAKE

Voltage/Current max for blocking	2V / 0,1A
Max torque	35Nm
H / B / L	90 x 172 x 240mm
Weight	18 kg
Ventilation	Natural



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.



TORQUE & SPEED DISPLAY UNIT

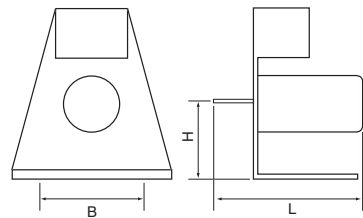
Range (torque)	200,0 Nm
Analogical output	-5V / 0 / +5V
Range (speed)	2000 rpm



DC TACHOGENERATOR

Deliver a continuous voltage proportional to the rotating speed.

Voltage at 1000rpm	10V
Connector	safety terminals
H / B / L	90 x 172 x 170mm



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



RHEOSTAT FOR INDUCTOR

0 to 1500Ω / 0.65A



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 Pol 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 Pol 2
Safety terminals	yes
Fuses	HPC 500V 500mA
Impedances	VDC : 20kΩ/V - VAC : 6,3kΩ/V
Dims / Weight	170 x 110 x 53mm / 500g



MAGNETOELECTRIC VOLTMETER

- Auto power off after 25mn
- Recopy output 10mV/A 20kHz
- Back lighting of the screen

Display	4.000 counts
Converter	AC & DC
Bandwidth	50Hz to 500Hz
opening of the jaws	12mm
VDC / VAC	400mV to 600V
IDC / IAC	4 to 80A
OHM	4Ω to 40MΩ
Farad	40nF to 100μF
Fréquencymeter	5Hz to 10MHz
.))))	Ring for R < 150Ω
Ranging	Auto & Manual
Protection	CATIII 600Vrms pol2
Power source	2 batteries LR03
Dimensions / Weight	210 x 70 x 37mm / 200g

POWER SUPPLY FOR BAKE

Current control is devised around a microcontroller circuit providing high precision of the delivered current.

Manual cotrol of the brake.

- Mains power supply 230V AC - 50/60 Hz
- Max output current 2A.
- Output load 4-20 ohms
- Brake control analogue input signal 0-10V DC
- Dimensions: 240 x 180 x 130 mm



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

