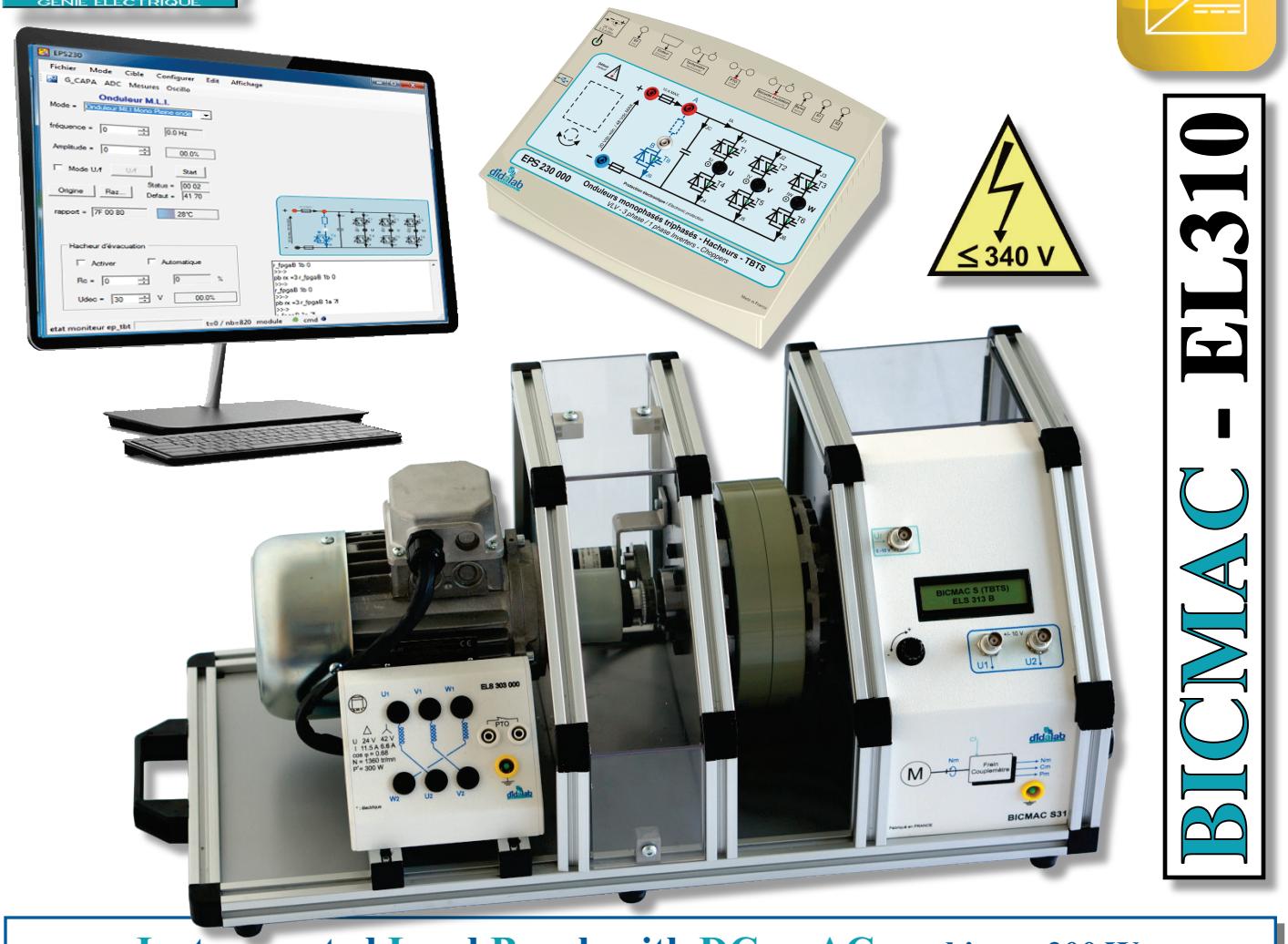
didalab
GÉNIE ÉLECTRIQUE

Power electronics



BICMAC - EL310

Instrumented Load Bench with DC or AC machines, 300 W, Low Voltage

Main features:

The load bench **BICMAC- 300** is specially designed for:

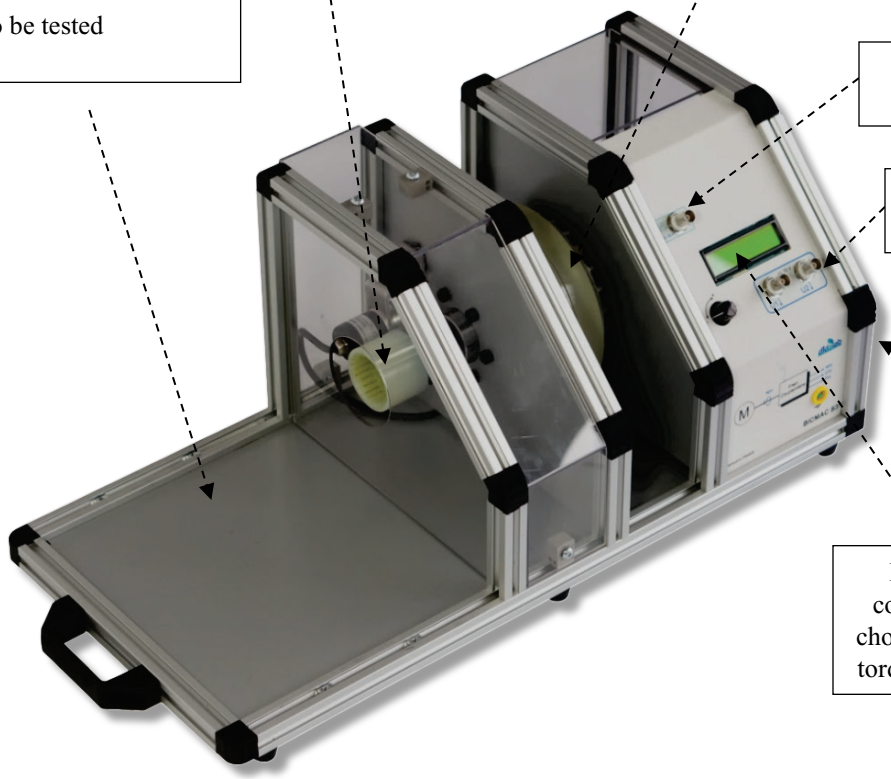
- **ELECTROTECHNICS**, study of rotating machines characteristics (relation speed/voltage, current/torque, power efficiency, cosφ…),
- **POWER ELECTRONICS**, compatible with the range EP100 EP200, power converters SELV (rectifiers, AC controllers, inverters...)
- **AUTOMATIC CONTROL**, creation of a programmable mechanical load depending on dynamic creteria (constant torque, as function of the speed, square of the speed…)
- The load generator is instrumented, which enables to read in real-time the mechanical variables from the experimented machine (speed, torque, power)
- It works, in accordance with the standard **LV** « **L**ow **V**oltage, 30/340 V_{DC} and 240 V_{AC} ».

AREAS OF APPLICATION:

Technical/Vocational training sectors, Prep schools, Universities, Engineering schools

MADE IN FRANCE
FABRICATION FRANÇAISE

BICMAC-310 – Details:



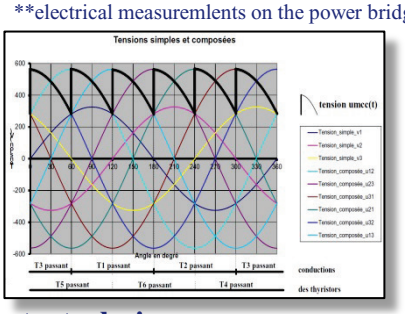
EL310100, control program, load creation & acquisition of all mechanical variables

It is used to set the condition of the loads' creation, the data acuqisiton for the response curves (speeds, torques, voltages ….) and the display of these responses

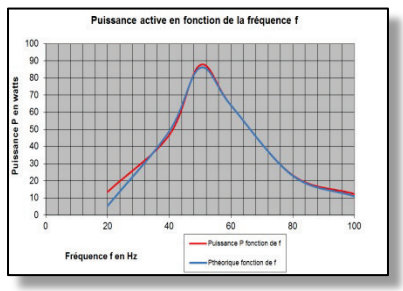
Power electronics:

3-phase rectification(EP130000)**

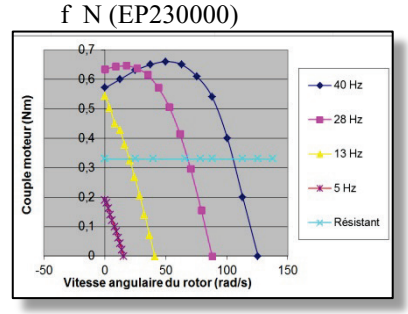
**electrical measuremlents on the power bridge



P/F ratio (EP210000)

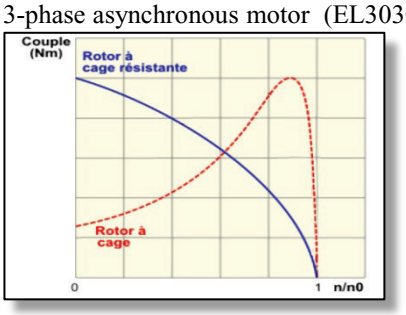


Torque for asynchronous motor f N (EP230000)

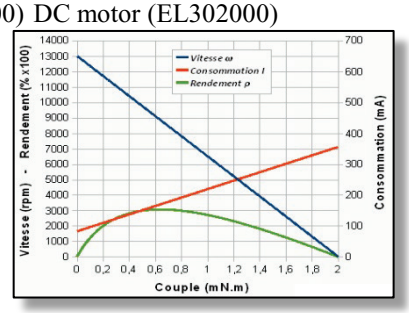


Electrotechnics:

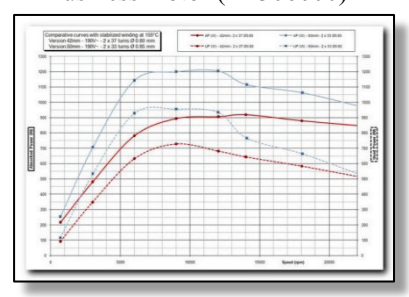
Torque Speed relation 3-phase asynchronous motor (EL303000)



Torque Speed relation DC motor (EL302000)



Torque Speed relation Brushless motor (EL306000)

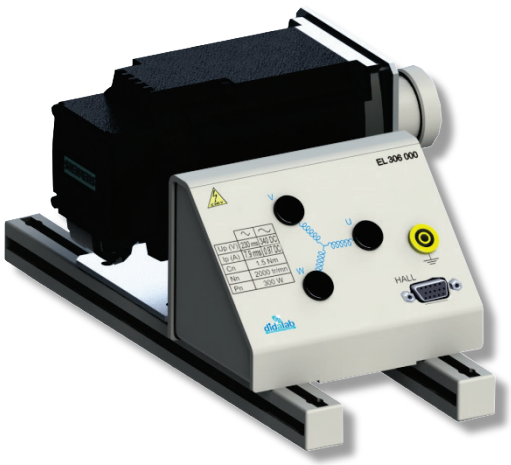


Test motors, Low Voltage:

You can put several motors on the bench. Usually, we suggest the following 3 motors.
For other motors, please ask us.

EL302000 : 300-W DC motor, permanent excitation		
CARACTERISTIQUES MOTEUR	Value	Units
Power voltage	170	Vdc
Speed at nominal current	2 000	Tr/min
Mechanical power	300	W/S2*
Nominal current	2	A
Protection	klixon	

EL303000 : AC motor, 300W*** 3-phase; squirrel	
Nominal voltages	240 / 400 VAC
Nominal current	2 A / 1.1 A
Cos φ	0,74
Usable power	370 W
Nominal torque	2.55 Nm
Efficiency	67%
Speed(synchronism)	1 380 rd/min (1 500 rd/min)
Thermal Protection	Klixon



EL306000 : Brushless motor, 300 W		
MOTOR CHARACTERISTICS		Unit
Power voltage	230 rms	3xVac
Trapezoid supply voltage:	310	DC
Speed at nominal current	2000	Tr/min
Mechanical power	300	W
Nominal torque	1,45	Nm
Sin,e nominal current	0.85	Aac
Trapezoid nominal current	1.2	Adc
Hall effect probe connection	3	DB15

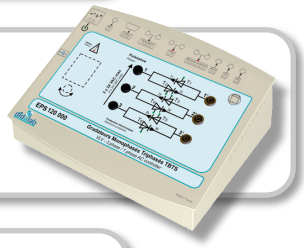
S2** : intermittent 30 min

Related products:

EM 300 : LV Power supply ; 450 VA ; 1-phase, 3-phase, DC

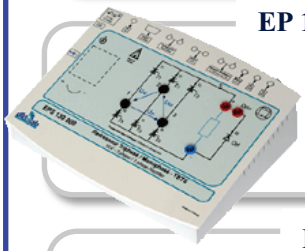
- 3-phase power supply 3* 220 VAC 1.2A ; from 1-phase Mains (240VAC 16A)
- Protected against overvoltage, overcurrent, over power, temperature
- HMI via LCD display
- Display (voltage, current, phase shift, cos Q, &)

EPS 120 B 1-phase, 3-phase AC converter, 300 W, LV



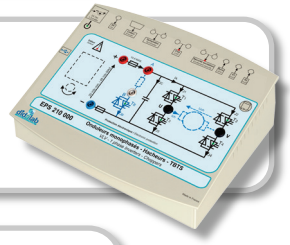
- Up-line 1-phase AC controller: - phase angle mode, - burst firing mode
- Up-line 1-phase AC controller: - phase angle mode with neutral, phase angle mode without neutral - burst firing mode

EP 130 B 1-phase, 3-phase rectifier, 300 W, LV



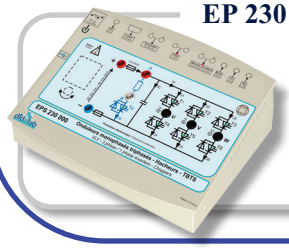
- 1-phase rectification : commuting cell, all diodes, all thyristors, mixed and symmetrical, mixed and assymmetrical
- 3-phase rectification: all diodes, mixed, all thyristors.
- Assisted inverter.

EP 210 B Chopper, 1-phase inverter, 300 W, LV



- Study of choppers: serial, voltage reversible, current reversible, four quadrants, over-fitted double serial,
- Study of 1-phase inverter: Shift control full wave with fixed frequency, with variable frequency, PWM +E/-E, MLI +E/0/-E, constant U/F ratio.

EP 230 B Chopper, 1-phase inverter, 3-phase inverter 300 W, LV



- choppers: serial, voltage reversible, current reversible, four quadrants
- 1-phase inverter: Shift control full wave with fixed frequency, with variable frequency, PWM
- 3-phase inverter: Shift control full wave with fixed frequency, with variable frequency, PWM

Standard configurations:

BICMAC, Instrumented Load Bench with DC or AC motors:		
References	**Description**	**Qty**
EL310000	Test motor bench with magnetic brake load, control electronic board, power supply Set on a aluminium frame with carrying handles	1
EL310100	Basic program, creation of loads and acquisition of mechanical variables (speed, torque, power)	1
	Motors :	
EL302 000	300-W DC motor, 170 Vdc with permanent excitation	
EL303 000	300-W 3-phase asyncronous motor, 220/400 Vac	
EL306 000	300-W Brushless motor, 230 Vdc	
ELS0X 000	Special motors, ask us	

Example of configuration :

EL313B, **BICMAC- 310**, with: magnetic brake system with measurements of mechanical variables (**A=1**) and asynchronous squirrel cage motor, 3x220 VAC (**B=3**) .

Packing:

Net : 16 kg, Dimensions (Lx l x h) 67 x 28 x 25 cm
Gross : 20 kg, Dimensions (Lx l x h) 78 x 40 x 40 cm.

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