LANGLOIS

ELECTRO-TECHNICS & ROTARY MACHINES

2025

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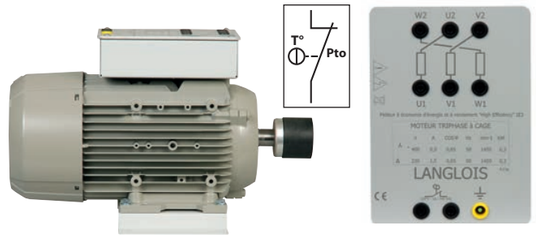
RANGE 300W — ROTARY MACHINES 1500RPM

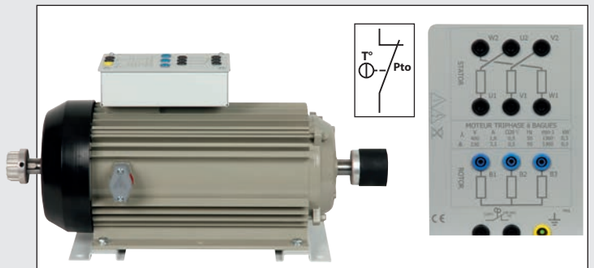
3-PHASE SQUIRREL CAGE INDUCTION MOTOR



These engines work as well with a speed variator as directly connected to a 3-phase supply.que sur **secteur 50 Hz** en direct

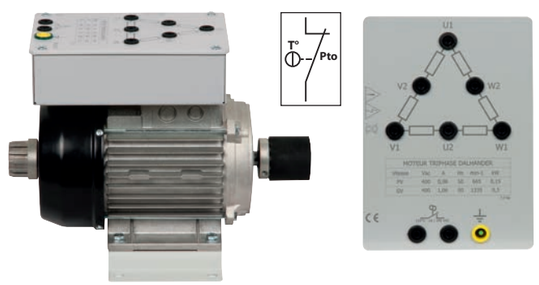
REF	U (V)	I (A)	H	B	L	Weight
MAS12	230/400V	1.5 / 0.9	90	172	235	8.2kg
MAS42	400V/690V	0.9 / 0.5	90	172	235	8.2kg

3-PHASE ASYNCHRONOUS SLIP RING INDUCTION MOTOR



REF	U (V)	I (A)	H	B	L	Weight
MAT10	230/400V	3.1/1.8	90	172	470	18kg
MAT10-C1	similar than MAT10 with 1024 points encoder.					

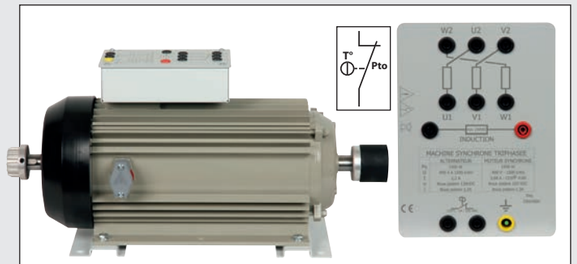
3-PHASE ASYNCHRONOUS 2-SPEED MOTOR (AC)



1 coil winding motor with 4/8 pole Dalhander coupling for quadratic resistive torque machines

REF	n (t/min)	U (V)	I (A)	P (W)	H	B	L	Weight
DAL10	1500	400	0.98	300	90	172	290	7,3kg
	750	400	1.06	150				

3-PHASE SYNCHRONOUS MACHINE

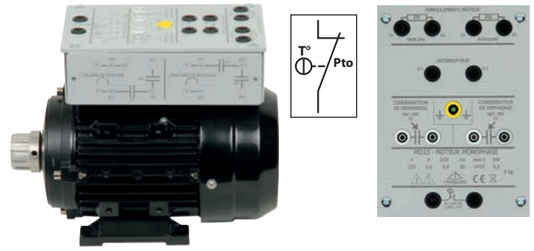


Works as a synchronous motor and 3-phase alternator.
Equipped with LEBLANC poles for the mains network synchronization.

REF	U en V	H	B	L	Weight
MSM10	230/400V	90	172	470	18kg

Pole wheel voltage 83Vdc / 1.2A.

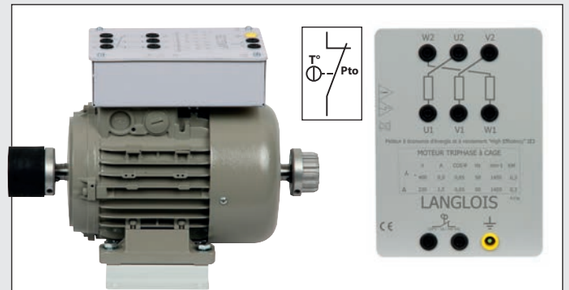
SINGLE-PHASE MOTOR WITH 2 CAPACITORS



2 capacitors, 1 starting and 1 running

REF	U (V)	I (A)	H	B	L	Weight
MO10	230V	2.6A	90	172	295	9kg

3-PHASE RELUCTANCE SYNCHRONOUS MOTOR (AC)

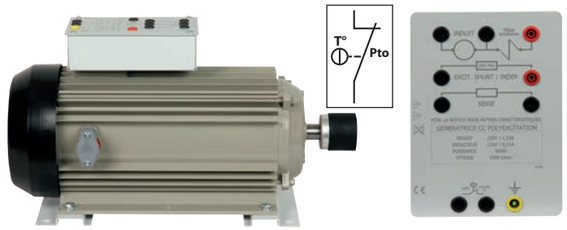


This type of motor works as well on frequency converter as on 50Hz direct mains.

REF	U (V)	I (A)	P (W)	H	B	L	Weight
MSR10	230/400V	4.6/2.7A	300W	90	172	320	12.1kg

ACCESSORIES FOR ROTARY MACHINES SEE PAGES 3-7 TO 3-12

POLYEXCITATION (COMPOUND) MOTOR

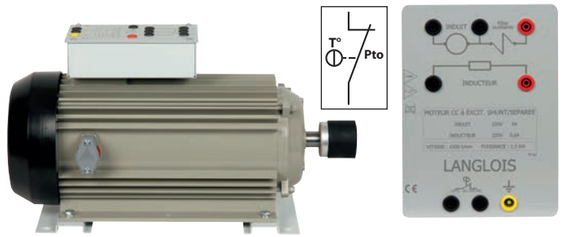


Designed to be high-performance motor (characteristics below), this machine also works as a generator.

REF	U (V)	I (A)	H	B	L	Weight
PM10	220V	2.3A	90	172	420	25kg

Inductor 220V/0.3A

SHUNT / SEPARATED DC GENERATOR

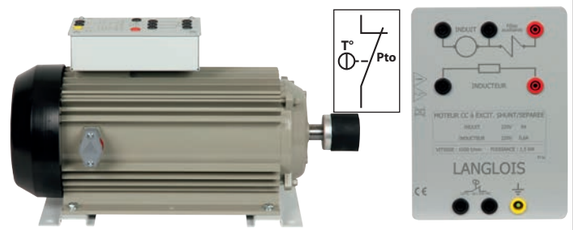


Designed for a didactic use.

REF	U (V)	I (A)	H	B	L	Weight
CG10	220V	1.3A	90	172	420	20kg

Inductor 220V/0.1A

SHUNT / SEPARATED DC MOTOR 220/220V



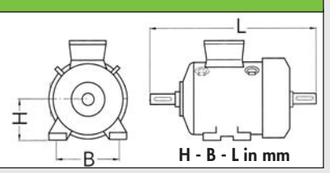
This engine works as well with a **speed variator** as directly connected to a DC supply.

REF	U (V)	I (A)	H	B	L	Weight
CC10	220V	1.9A	90	172	420	21kg

Inductor 220V/0.6A

Each machine is equipped with a binary temperature sensor with a contact that can be inserted into a control circuit.

The couplings are compatible across a single power range. Coupling and fastening screws provided with each reference number.



H - B - L in mm

ACTIVE LOAD

NEW

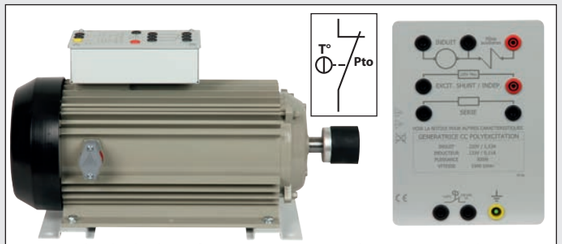
SEE PAGES 3-7 TO 3-8

POWDER BRAKE

POWDER BRAKE PRINCIPLE
The DC current injected into the brake coil creates a field which causes the magnetic powder placed in the air gap to agglomerate. The torque measurement requires a rotary sensor to be positioned either on the left or on the right.
Maximum rotation speed 1800 rpm.

REF	FP1-2
Voltage/Current max for blocking	2V / 0,1A
Max torque	35Nm
H / B / L in mm	90 x 172 x 240 - 18kg
Weight	Fanless

POLYEXCITATION (COMPOUND) GENERATOR

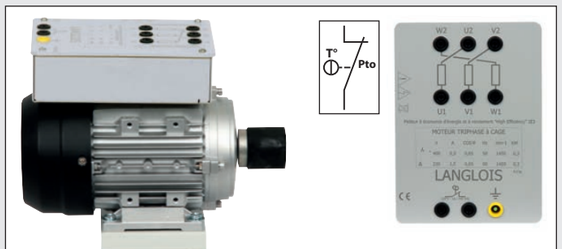


Designed to be high-performance generator (characteristics below), this machine also works as a motor.

REF	U (V)	I (A)	H	B	L	Weight
PE10	220V	2A	90	172	420	20kg

Inductor 133V/0.7A

PERMANENT MAGNET SYNCHRONOUS 3-PHASE MOTOR (AC)



High efficiency motor, requires a control by speed variator.

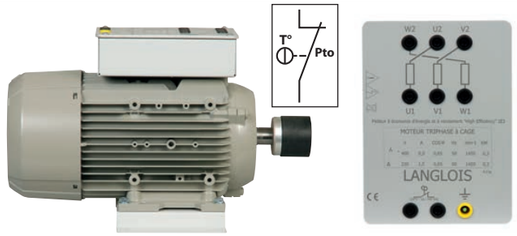
REF	n (RPM)	U (V)	I (A)	f (Hz)	P (W)
MSAP10	1500/3000	376/217	1/1.73	50 / 75	300/440

H	B	L	Weight
90	172	260	4,1kg

RANGE 1500W

ROTARY MACHINES 1500RPM

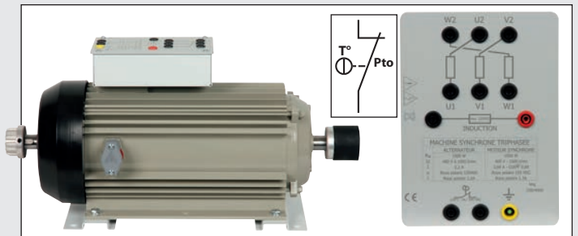
3-PHASE SQUIRREL CAGE INDUCTION MOTOR



These engines work as well with a speed variator as directly connected to a 3-phase supply.

REF	U (V)	I (A)	H	B	L	Weight
MAS22	230/400V	5.7/3.3	112	190	390	20kg
MAS52	400V/690V	3.3/1.9	112	190	390	20kg

3-PHASE SYNCHRONOUS MACHINE

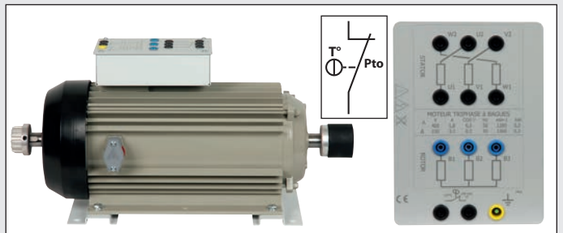


Works as a synchronous motor and 3-phase alternator.
Equipped with LEBLANC poles for mains network synchronization.

REF	U (V)	H	B	L	Weight
MSM20	230/400V	112	190	540	35kg

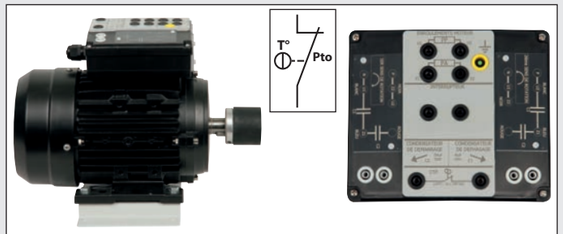
Pole wheel voltage 130Vdc / 1.2A.

3-PHASE ASYNCHRONOUS SLIP RING INDUCTION MOTOR



REF	U (V)	I (A)	H	B	L	Weight
MAT20	230/400V	8.9 / 3.9	112	190	540	35kg
MAT20-C1	similar than MAT20 with 1024 points encoder.					

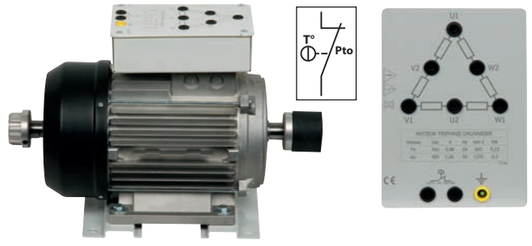
SINGLE-PHASE MOTOR WITH 2 CAPACITORS



2 capacitors, 1 starting and 1 running

REF	U (V)	I (A)	H	B	L	Weight
MO20	230V	9A	112	190	350	17kg

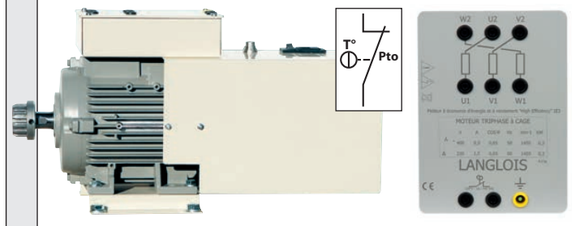
3-PHASE ASYNCHRONOUS 2-SPEED MOTOR (AC)



1 coil winding motor with 4/8 pole Dalhander coupling for quadratic resistive torque machines

REF	n in RPM	U (V)	I (A)	P (W)	H	B	L	Weight
DAL20	1500/750	400/400	3,3/2,7	1500/750	112	190	410	25kg

3-PHASE ASYNCHRONOUS CAGE MOTOR VECTORIAL CONTROL

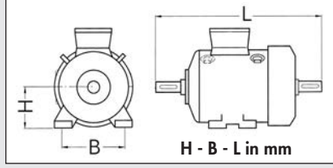


Fitted with a 1024 pts encoder and a forced ventilation to run at slow speed

REF	U (V)	I (A)	H	B	L	Weight
VAV20	230/400V	5.9 / 3.4	112	190	580	24kg
VAV50	400/690V	3.4 / 1.95	112	190	580	24kg

ACCESSORIES FOR ROTARY MACHINES
SEE PAGES 3-7 TO 3-12

CONVERTERS
SEE PAGE 3-17

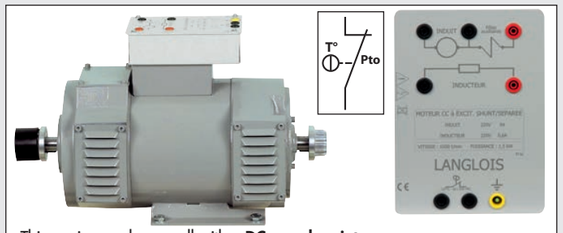


H - B - L in mm

The couplings are compatible across a single power range. Coupling and fastening screws provided with each reference number.

Each machine is equipped with a binary temperature sensor with a contact that can be inserted into a control circuit.

SHUNT / SEPARATED DC MOTOR 220/220V

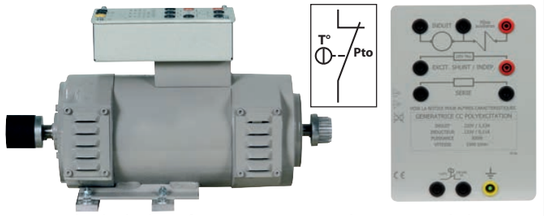


This engine works as well with a **DC speed variator** as directly connected to a **DC supply.**

REF	U (V)	I (A)	H	B	L	Weight
CC20	220/220V	9A with 230V	112	190	510	51kg

Inductor 220V/0.6A

POLYEXCITATION COMPOUND DC GENERATOR

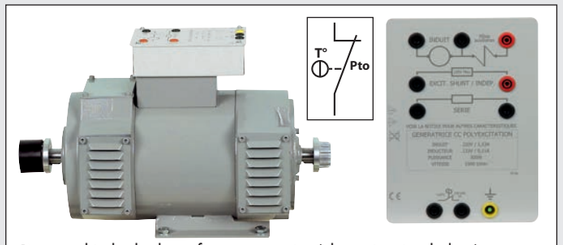


Designed to be high-performance generator (characteristics below), this machine also works as a motor.

REF	U (V)	I (A)	H	B	L	Weight
PE20	255V	6A	112	190	510	53kg

Inductor 94V/0.48A

POLYEXCITATION COMPOUND DC MOTOR

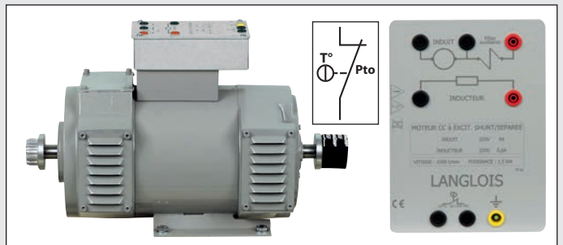


Designed to be high-performance motor (characteristics below), this machine also works as a generator.

REF	U (V)	I (A)	H	B	L	Weight
PM20	220V	7.6A	112	190	510	53kg

Inductor 220V/0.65A

SHUNT / SEPARATED DC GENERATOR



Designed for a didactic use.

REF	U (V)	I (A)	H	B	L	Weight
CG20	240V	7A	112	190	510	53kg

Inductor 150V/1A

POWDER BRAKE

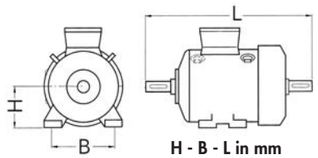
PRINCIPLE OF POWDER BRAKES
A continuous excitation current injected into the brake coil creates a field that agglomerates the magnetic powder placed in the air gap. The braking torque is proportional to the excitation current alone. The torque measurement requires a rotating sensor to be positioned either on the left or the right.
Max rotation speed 1800 rpm.

Ref.	FP2-2
Voltage/Current max for blocking	10Vdc / 0.5A
Max torque	65Nm
H / B / L / Weight	112 x 190 x 356mm / 43kg
Ventilation	Fan

ACTIVE LOAD

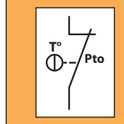
SEE PAGES 3-7 TO 3-8

RANGE 3000W ROTARY MACHINES 1500RPM



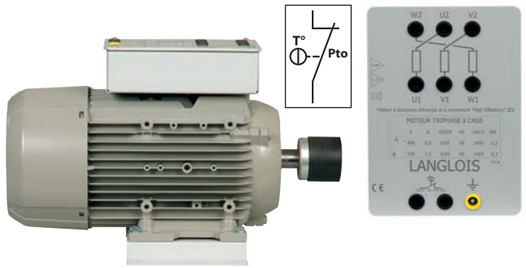
H - B - L in mm

The couplings are compatible across a single power range. Coupling and fastening screws provided with each reference number.



Each machine is equipped with a binary temperature sensor with a contact that can be inserted into a control circuit.

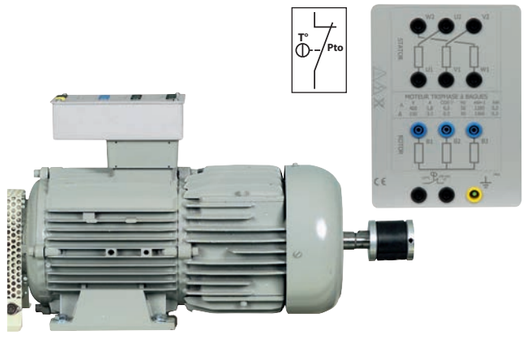
3-PHASE SQUIRREL CAGE INDUCTION MOTOR



These engines work as well with **a speed variator** as directly connected to a **3-phase supply.**

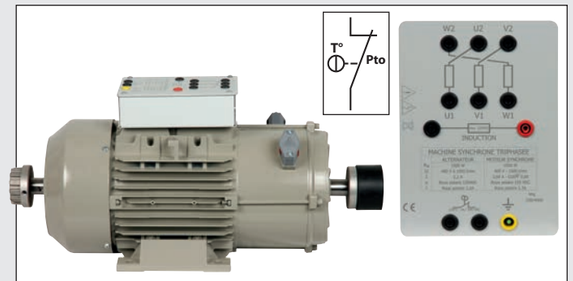
REF	U (V)	I (A)	H	B	L	Weight
MAS32	230/400V	10.6/6.1	132	216	445	28kg
MAS62	400V/690V	6.1/3.5	132	216	445	28kg

3-PHASE ASYNCHRONOUS SLIP RING INDUCTION MOTOR



REF	U (V)	I (A)	H	B	L	Weight
MAT30	230/400V	12.1 / 7	132	216	685	63kg
MAT30-C1	similar than MAT30 with 1024 points encoder.					

3-PHASE SYNCHRONOUS MACHINE

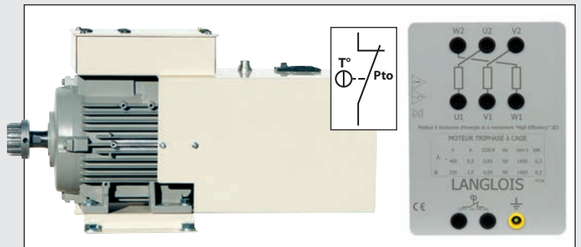


Works as a synchronous motor and a 3-phase alternator.
Equipped with LEBLANC poles for mains network synchronization.

REF	U (V)	H	B	L	Weight
MSM30	230/400V	132	216	490	46kg
MSM30-C1	similar than MSM30 with 1024 points encoder.				

Pole wheel voltage 180Vdc / 0.8A.

3-PHASE ASYNCHRONOUS CAGE MOTOR WITH VECTORIAL CONTROL



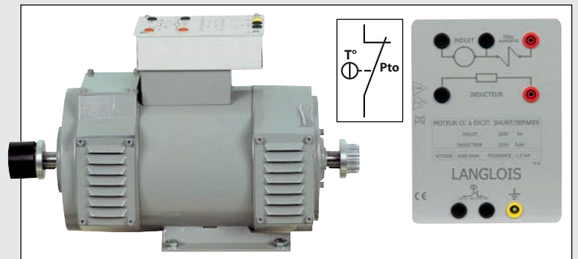
Fitted with a 1024 pts encoder and a forced ventilation to run at a slow speed.

REF	U (V)	I (A)	H	B	L	Weight
VAV30	230/400V	10.6 / 6.1	132	216	620	35kg
VAV60	400/690V	6.1 / 3.5	132	216	620	35kg

ACCESSORIES FOR ROTARY MACHINES SEE PAGES 3-7 TO 3-12

CONVERTERS SEE PAGES 3-17

SHUNT / SEPARATED DC MOTOR 220/220V

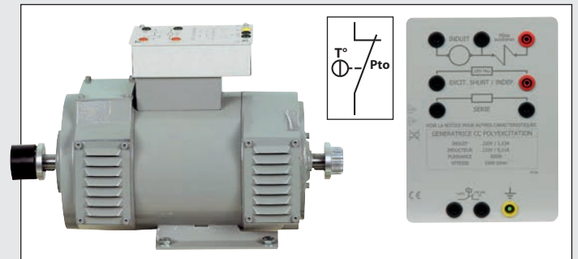


This engine works as well with **a speed variator** as directly on **a DC supply**.

REF	U (V)	I (A)	H	B	L	Weight
CC30	Multitensions	16.5A with 220V	132	216	570	80kg

Inductor 220V/1.17A

POLYEXCITATION COMPOUND DC MOTOR

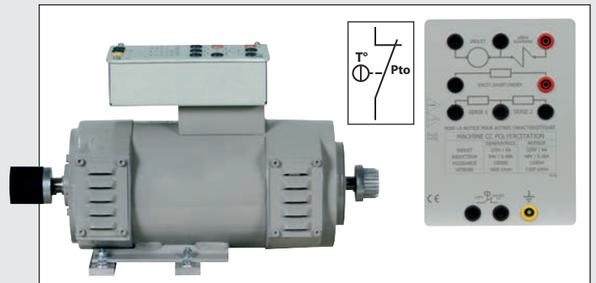


Designed to be high-performance motor (characteristics below), this machine also works as a generator.

REF	U (V)	I (A)	H	B	L	Weight
PM30	220V	17,9A	132	216	570	83kg

Inductor 125V/0.6A

POLYEXCITATION COMPOUND DC GENERATOR

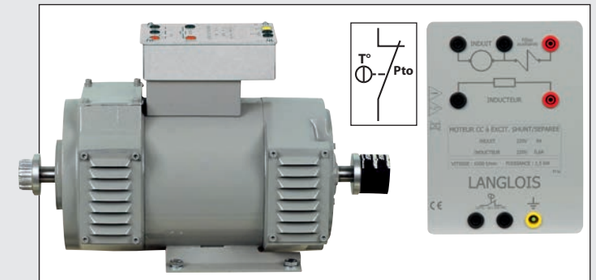


Designed to be high-performance generator (characteristics below), this machine also works as a motor.

REF	U (V)	I (A)	H	B	L	Weight
PE30	270V	13.6A	132	216	570	80kg

Inductor 70V/0.4A

SHUNT / SEPARATED DC GENERATOR



Designed for a didactic use.

REF	U (V)	I (A)	H	B	L	Weight
CG30	220V	14.2A	132	216	570	83kg

Inductor 175V/0.85A

POWDER BRAKE REINFORCED

As the powder brakes of the other ranges, a simple DC current under a low voltage around 14V generates a constant braking torque for all the speeds between 0 to 1500 rpm.
This reinforced model is composed of 2 independent units and linked together by the rotating shaft. Thanks to this power distribution, dissipation of energy is most effective. An automatic monitoring avoid the functioning of only one unit or if the ventilation is not complete.
The measure of the torque required a rotating unit which needs to be placed indifferently on the left or on the right.
Maximum rotating unit: 1800 rpm

Réf.	**FP332-2**
Voltage/Current max for blocking	14Vdc / 0.8A
Max torque	80Nm
H / B / L in mm	132 x 216 x 720
Weight	86kg
Ventilation (MAINS 230V)	Fan

ACTIVE LOADS: LOAD SIMULATORS FOR ROTATING MACHINERY

These systems allow for studies on rotating machines (AC or DC). They consist of a control unit and a brushless motor to be integrated into a test bench.
The system applies a resistive torque controlled directly by the potentiometer on the front panel of the control unit.
The energy generated by the braking is dissipated by a braking resistor.
They simulate a load on the motor under test by applying the profile of an industrial application, previously configured from the screen.
It is therefore possible to study applications simulating a lifting winch, a conveyor, a mixer, a ventilation system, a pumping station, etc.
The system also has a simple braking function controlled directly by the HMI.

EDUCATIONAL OBJECTIVES

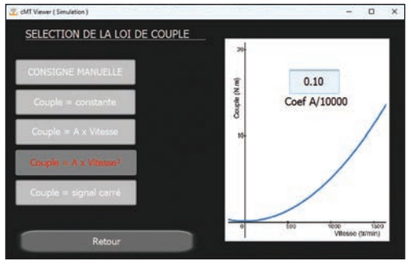
- ***Conduct a study on rotating machinery based on torque law simulations***
- ***Take measurements of physical quantities***
- ***Understand the mechanical and electrical characteristics of the main industrial applications***
- ***Take measurements and then interpret them***

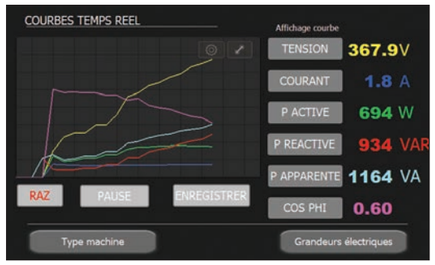
The connections for the feedback signals are made using 4mm safety cables.
The energy generated by the motor braking is dissipated by a braking resistor.

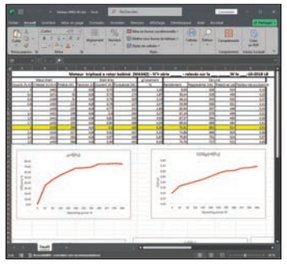
The types of profiles are:

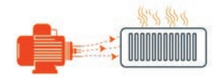
- Constant torque (hoisting winch, belt conveyor, etc.)
- Torque proportional to speed (screw compressor, metering pumps, etc.)
- Torque proportional to the square of the speed (mixer, fan, etc.)
- Cyclic torque (cutting shear, etc.)

All settings are configured directly from the integrated screen. The application allows you to view the load data in real time and plot it on a graph.
It is possible to retrieve this data in .csv format directly onto a USB drive for processing with your preferred spreadsheet software.





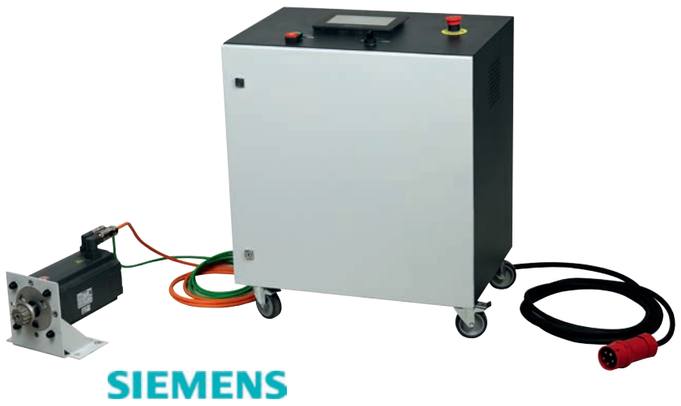


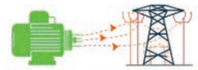


Dissipation de l'énergie sur résistance

ref. CH-AC1	for 300W machines
ref. CH-AC2	for 1500W machines

EDUCATIONAL FILE FOR STUDENTS / TEACHERS





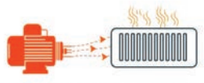
Restitution de l'énergie au réseau

ref. CH-AC21	for 1500W machines

EDUCATIONAL FILE FOR STUDENTS / TEACHERS

ACTIVE LOADS: BRAKING USING A BRUSHLESS MOTOR

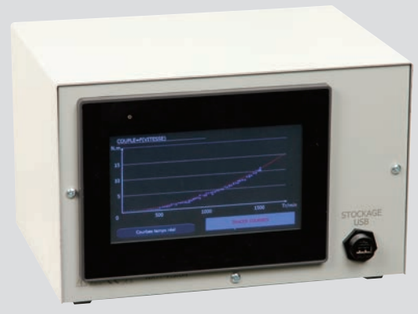
These simple braking systems allow for studies on rotating machines (AC or DC).
They consist of a control unit and a brushless motor to be integrated into a test bench.
The system applies a resistive torque controlled directly by the potentiometer on the front panel of the control unit.
The energy generated by the braking is dissipated by a braking resistor.
It is also possible to perform locked-rotor tests.
This system is completely maintenance-free.



Dissipation de l'énergie sur résistance

ref. CH-DY1	for 300W machines
ref. CH-DY2	for 1500W machines

CONTROL UNIT OPTION



ref. CH-CMD

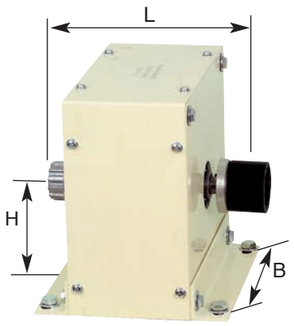
Control unit for the CH-DY1 system's torque, enabling the simulation of an industrial application and the acquisition of mechanical and electrical quantities.

Technical data sheets detailed on our site

ACCESSORIES FOR ROTARY MACHINES

Technical data sheets detailed on our site

INERTIA WHEELS



This inertia wheel allows to simulate rotary machines with a high moment of inertia.
Supplied with 1 coupling + 1 cover + screws.

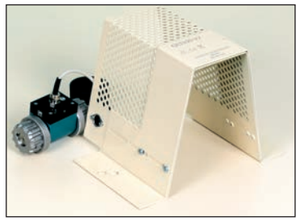
Ref.	VOL1	VOL2	VOL3
For power	**300W**	**1500W**	**3000W**
Inertia	0,025kg/m²	0,2kg/m²	0,2kg/m²
Weight	10kg	39kg	40kg
H	90mm	112mm	132mm
B	172mm	190mm	216mm
L	111mm	220mm	220mm

STAR/DELTA STARTER

Accessorie for our motors
MAS12 to MAS62 & VAV20 to VAV60

ref. CO-ET-8A

BRUSHLESS TORQUE SENSORS WITH OR WITHOUT SPEED OUTPUT



These brushless torque sensors have to be placed between 2 machines and measure the torque sensor V2 and the twist torques and speeds for the version V22. It is equipped with an optical torque so without mechanical wear and maintenance, with a dynamic range allowing to measure some important torque changes and high speeds. The values of starting are so easily measurable.
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

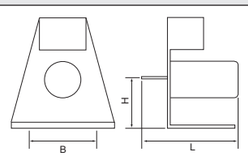
Connecting cable and protection casing supplied with all our sensors.

** The use of an inertia wheel + a rotary sensor (CR design) between the motor and the brake gives starting torques which can go to 7 times the operating torque.*

Ref	For POWER	Sensor Range	Speed Output	L mm	Use with an important inertia *
CR1-V2	300W	50 Nm	no	220	Yes
CR1-V22	300W	50 Nm	5V at 2500 rpm	220	Yes
CR2-V2*	1500W	50 Nm	no	220	no*
CR2-V22*	1500W	50 Nm	5V at 2500 rpm	220	no*
CR3-V2*	3000W	50 Nm	no	220	no*
CR3-V22*	3000W	50 Nm	5V at 2500 rpm	220	no*

DC TACHOGENERATORS

These tachogenerators deliver a continuous voltage proportional to the rotating speed.
Supplied complete with couplings, housings and screws bolt.



Réf.	Power	Voltage at 1000 rpm	Connector	H (mm)	B (mm)	L (mm)
DYTA10	300W	10V	Terminals	90	172	170
DYTA2	1500W	10V	Terminals	112	190	130
DYTA3	3000W	10V	Terminals	132	216	130

SAFETY STARTER RHEOSTAT

For **small** power slip ring motors

ref. RD3

for **high** powerful slip ring machines

ref. REDA12

For **small** power DC motor

ref. RDC

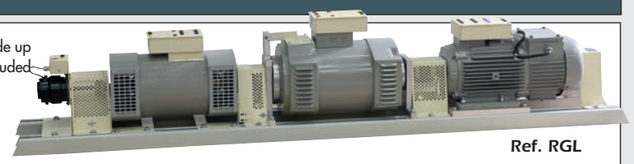
For **high** powerful DC machines.

ref. REDA34

GUIDE RAILS

These rails will be used for aligning and fixing the machines constituting of the made up groups according to your own configuration. With each pair of guide rails are included 2 end of shaft protective covers and 1 intermediate housing.

**RGA is only compatible with the stand on wheels CTA*
**RGL is only compatible with the stand on wheels CTL*



Ref. RGL

Ref. ST10

Ref. RGC

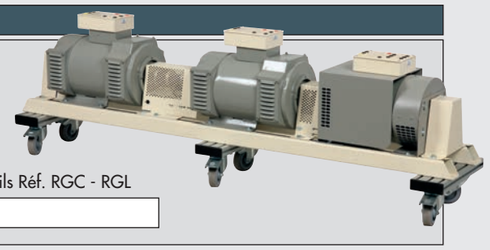
Ref.	Power	Overall length	Pitch of rails	Weight
ST10	300W	1100mm	172mm	7kg
STL	300W	1450mm	172mm	8kg
RGA20*	1500W	950mm	190/216mm	16kg
RGC20	1500W	1600mm	190/216mm	24kg
RGL20**	1500W	1900mm	190/216mm	28kg
RGA30*	3000W	950mm	190/216mm	16kg
RGC30	3000W	1600mm	190/216mm	24kg
RGL30**	3000W	1900mm	190/216mm	28kg

CASTER OPTIONS FOR A MOBILE SOLUTION WITHOUT MOTOR STAND

This economical option consists of fixing 4 or 6 castors equipped with brakes directly under the rails. This solution effectively replaces a chair with casters and allows you to easily move your motor unit.
This solution raises the assembly by 170mm.

4-wheel solution
compatible with rails Ref. ST10 - STL - RGA

ref. ROU-4

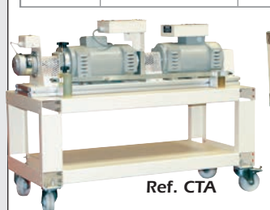


6-wheel solution
compatible with rails Réf. RGC - RGL

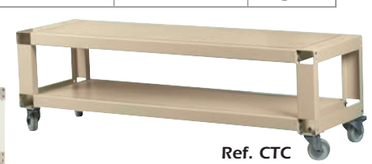
ref. ROU-6

MOTORS STAND ON WHEELS

Ref.	Useful Length	Width	Height	Weight
CTA	950mm	470mm	500mm	30kg
CTB	1300mm	470mm	500mm	30kg
CTC	1610mm	470mm	500mm	39kg
CTH	1610mm	470mm	845mm	45kg
CTL	1900mm	470mm	500mm	45kg

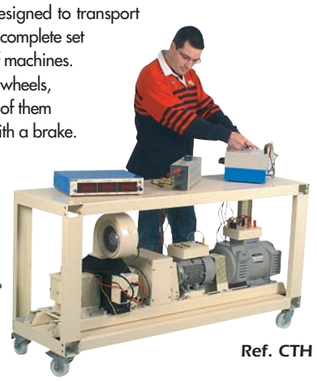


Ref. CTA



Ref. CTC

Designed to transport a complete set of machines.
4 wheels,
2 of them with a brake.



Ref. CTH

Handle option

ref. OP-CT

SPEED & TORQUE DISPLAYS UNITS


GAMA-SB2


GAMA-SBCF2


TAGA-V22C


TACH-V126B

Réf.	Torque displays				Speed displays		
	Range	Analogical output of the torque	Compatible with brushless rotary sensor	Brake control	Range	Compatible with DC tachogenerator	Analogical outputs of the speed
GAMA-SB2	200,0 Nm	±1V / 10Nm	yes	no	/	/	/
GAMA-SBCF2	200,0 Nm	±1V / 10Nm	yes	yes	/	/	/
TAGA-V22C*	200,0 Nm	±1V / 10Nm	yes	no	2000rpm	10, 20, 60V - 1000rpm	±1V / 1000rpm
TACH-V126B*	/	/	/	/	2000rpm	10, 20, 60V - 1000rpm	±1V / 1000rpm

* Compatible with the torque sensor CR*-V22

CONTROLLABLE POWER SUPPLY FOR BRAKE

GC-420 is a current supply box for powder brake. Current control is devised around a microcontroller circuit providing high precision of the delivered current. Control of the manual brake or by analogue input 0-10V DC.

Genral informations :
- 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

ref. GC-420

On the front:
- A start/stop indicator light.
- A potentiometer for controlling the set point.
- A 2-position switch provides control of the stop mode by blocking or disengaging.

On the rear:
- Socket/switch/fuse unit assembly for box power supply.
- 6 terminals for choice of control coupling by potentiometer or by external analogue signal 0-10V DC.
- 2 terminals for connecting the powder brake.

ref. GC-FP
Non-driveable version with manual control

DISPLAY COMPATIBLE WITH A 1024 PTS ENCODER

2000rpm range compatible with the VAV20 to VAV60motor.

ref. VICOD

INTERFACE WITHOUT DISPLAYS

The brushless torque sensor is connected to the DIN socket of the INTER-SB interface, which is powered by an external 12 to 28V DC source.
The 0 to 5V measurement signal (5V for the nominal torque) is the image of the mechanical torque in Nm.
A suitably calibrated voltmeter will directly display the torque in Nm.

ref. INTER-SB

Compatible with -V2 torque sensors

Technical data sheets detailed on our site

SYNCHRONOSCOPE

Allows a rotating electrical machine to be safely connected to the 3 x 400V national electrical network. Direct connection of the machine and the national electrical network on 4mm safety terminals.
- 4 LED indicators, 2 on the network side and 2 on the rotating machine side, indicate the presence and order of the phases.
- 1 central display allows you to compare the voltage and frequency difference between the 400V three-phase network and the rotating machine.
- 1 set of small LEDs allows you to see the best time to switch the synchronization switch to on.
  The rotating machine is then connected to the national electrical network.

ref. CHR4

DISPLAY UNIT OF THE POWER FACTOR - 400V

Box allowing the analog display of the Cosine Phi. Connection to the three-phase 400V network thanks to the 4mm safety terminals on the back of the box.
Dimensions: 240 x 180 x H130mm

ref. PSY-C

DISPLAY UNIT OF THE CENTRAL ZERO POWER - 400V/5A

- Box allowing the display of the three-phase power produced or consumed.
- Ideal in association with a synchronous / asynchronous machine.
- Connection to the three-phase 400V network thanks to the 4mm safety terminals located on the back of the case. Intensity of 5A Max.
- Dimensions: 240 x 180 x H130mm

ref. PSY-W

MULTIFONCTION MEASURING UNIT

The CMM-2 is very easy to use, thanks to its front panel buttons and large, high-brightness display. Connected to a three-phase network, the CMM-2 measures numerous electrical quantities. Connection between the PC and the control panel is via an RJ45 cable. Integrated web server.

ref. CMM-2

SINGLE & 3-PHASE MULTIFUNCTIONAL COUNTERS

Energy counters (ULYS type) for the counting and the measuring of consumed powers.
The direct reading of values is possible on embedded web pages thanks to the Ethernet connection.
The connection is done on safety terminal 4mm.

ref. CMPTM

ENERGY METERS

Easy to use thanks to 3 intuitive navigation keys. Works by direct measuring without current transformer
- LCD display
- Current up to 30A
- Totalizer counter - Partial counter
- Autonomous supply

ref. ME66 **monophasé**

ref. ME71 **triphasé + N**

MEASUREMENT OF ELECTRICAL QUANTITIES WITH DATA ACQUISITION
U - I - W (TRMS)

ref. WATT-VISION

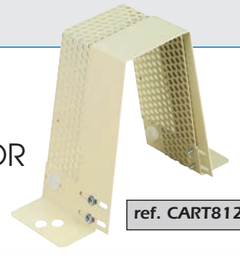
Digital display for the study of rotating machines (from 300 W to 3 kW).
- Simultaneous display of electrical quantities: voltage, current, active power, reactive power, power factor (cos φ).
- Measurement of continuous, single-phase, and balanced three-phase True RMS (TRMS) values.
- Wide bandwidth for measurements on chopped signals (frequency converters, choppers, rectified power supplies, etc.).
- Display configuration based on the rotating machine being studied.
- Real-time display of time-domain waveforms for each quantity.
- Data acquisition and storage on a USB flash drive (not included) in .csv format.
- Connection terminals on the back of the unit.
- Maximum voltage: 700V AC/DC
- Maximum current: 20A AC/DC
- Measurement accuracy: 2%
- Powered by a 230Vac 2-pin + ground power cord.

MEASUREMENT OF MECHANICAL QUANTITIES WITH DATA ACQUISITION
TORQUE, SPEED, POWER

Digital display for the study of rotating machines (from 300 W to 3 kW).
- Simultaneous display of mechanical quantities: torque, speed, power.
- Power supply control for powder brake via potentiometer.
- Real-time display of curves as a function of time for each quantity.
- After a short data acquisition period, it is also possible to display the speed variation curve as a function of the applied torque on the unit (X/Y graph).
- Data acquisition and storage on a USB flash drive (not included) in .csv format.
- Connection terminals on the back of the unit.
- Compatible with brushless torque sensor and 10V tachometer generator.
- Measurement accuracy: 2%
- Power supply: via 2P+T 230Vac power cord.

ref. MECA-VISION
For brushless rotary sensors

PROTECTIVE COVERS FOR MACHINES COUPLING



ref. CART812-20

ref. CART80-20

ref. VS10

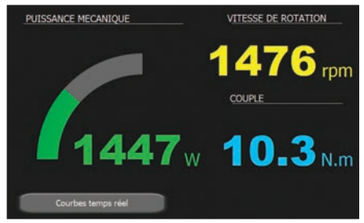
REF	Power	Protection length	Height	Specifications
CART300W/80	300W	80mm	125mm	Intermediate housing between 2 machines
CART90	300W	95mm	125mm	Intermediate housing between 2 machines
BT300	300W	60mm	125mm	Housing for unused end of shaft
VS300	300W	/	/	Screw + Washers + Slide Nut
BT80-20	1500W	80mm	185mm	Housing for unused end of shaft
CART80-20	1500W	80mm	185mm	Intermediate housing between 2 machines
CART120-20	1500W	126mm	185mm	Intermediate housing between 2 machines
CART812-20	1500W	de 80 à 115mm	185mm	Length-adjustable intermediate housing
BT80-30	3000W	80mm	150mm	Housing for unused end of shaft
CART80-30	3000W	80mm	150mm	Intermediate housing between 2 machines
CART120-30	3000W	126mm	150mm	Intermediate housing between 2 machines
CART812-30	3000W	de 80 à 115mm	150mm	Length-adjustable intermediate housing
VS10	1500/3000W	/	/	Screw + Washers + Slide Nut

Technical data sheets detailed on our site

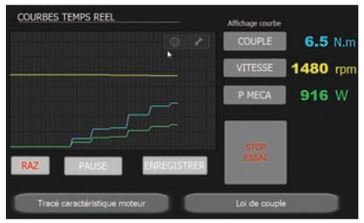
MEASUREMENT OF ELECTRICAL AND MECHANICAL QUANTITIES WITH DATA ACQUISITION

An all-in-one digital display combining the specific functionalities of WATT-VISION and MECA-VISION in a single housing.

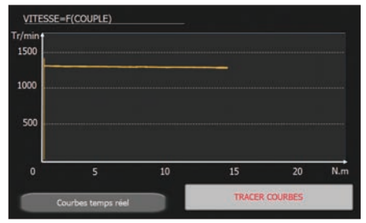
ref. MELEC-VISION



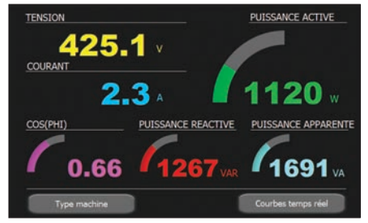
Visualization of mechanical quantities



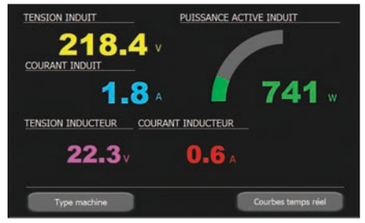
Real-time curves of mechanical quantitie



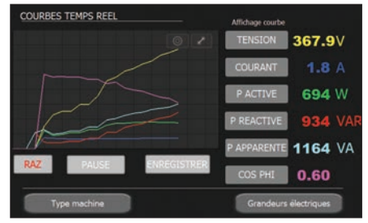
Evolution of speed as a function of torque



Visualization for single / 3-phase asynchronous machines



Visualization for DC motor

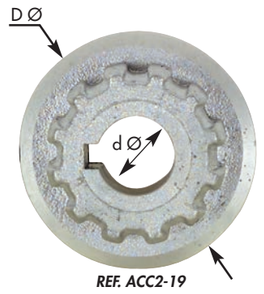


Real-time graphs of electrical quantities

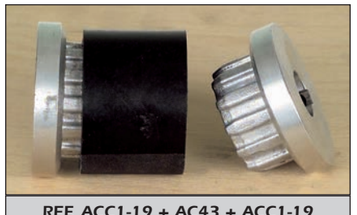
REPLACEMENT COUPLINGS

These are spare parts, the rotating machines are fitted with their original couplings.
A complete set of spare part couplings comprises 2 metal hubs and a rubber sleeve (3 references in total)

REF	Power	Specification	d Ø	D Ø
ACC1-14	**300W**	HUB	14mm	42mm
ACC1-17	**300W**	HUB	17mm	42mm
ACC1-19	**300W**	HUB	19mm	42mm
AC-43	**300W**	SLEEVE	sleeve	45mm
ACC2-19	**1500W**	HUB	19mm	52mm
ACC2-24	**1500W**	HUB	24mm	52mm
AC-56	**1500W**	SLEEVE	sleeve	56mm
ACC3-19	**3000W**	HUB	19mm	69mm
ACC3-24	**3000W**	HUB	24mm	69mm
ACC3-28	**3000W**	HUB	28mm	69mm
AC-66	**3000W**	SLEEVE	sleeve	74mm



REF. ACC2-19

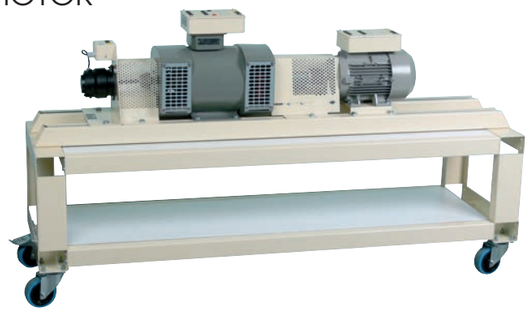


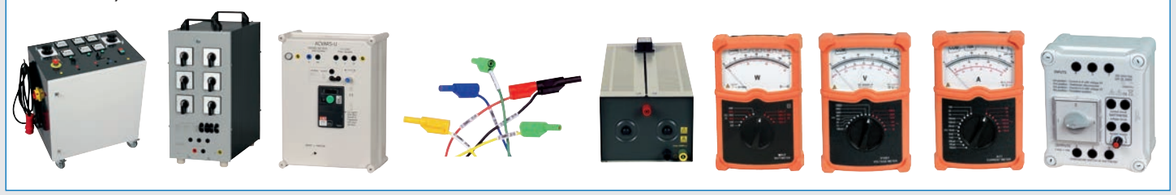
REF. ACC1-19 + AC43 + ACC1-19

STUDYING THE 1.5KW ASYNCHRONOUS MOTOR AND 3-PHASE ALTERNATOR

ref. PACK-AC2

Three-phase asynchronous motor
Three-phase alternator
Rotary torque sensor
DC-tachogenerator
Stand on wheels
Guide rails
DC variable supply
2kW resistive load
Three-phase wattmeter
Magnetoelectric voltmeter
Magnetoelectric ammeter
Wattmeter switch
Synchronoscope
Digital wattmeter
Electrical and mechanical quantity display box with acquisition
Rheostat
Frequency converter
Set of safety leads

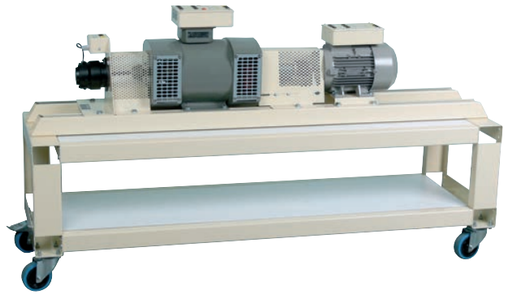


STUDYING THE 1.5KW DC MOTOR AND 3-PHASE ALTERNATOR

ref. PACK-DC2

DC motor
Rotary torque sensor
3-phase alternator
DC-tachogenerator
Stand on wheels
Guide rails
DC variable supply
2000W resistive load
Wattmètre triphasé
AC/DC poower supply
Synchronoscope
Electrical and mechanical quantity display box with acquisition
Magnetoelectric voltmeter (x2)
Magnetoelectric ammeter (x2)
Rheostat (x2)
Set of safety leads









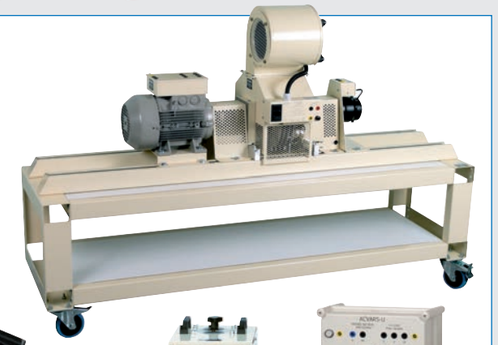
DELIVERED WITH EDUCATIONAL FILE
STUDENT BOOKLET: THEORETICAL STUDIES AND PRACTICAL WORK
TEACHER BOOKLET WITH CORRECTIONS

Technical data sheets detailed on our site

STUDYING THE 1.5KW ASYNCHRONOUS MOTOR WITH PC MONITORING

ref. PACK-AC1

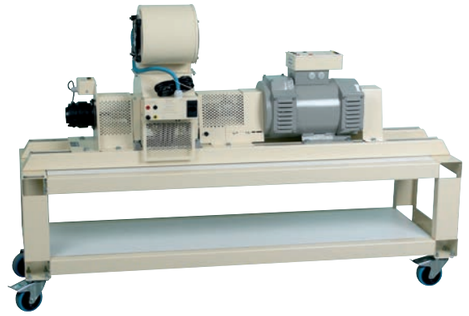
Three-phase asynchronous motor
Rotary torque sensor
Powder brake
DC-tachogenerator
Stand on wheels
Guide rails
3-phase supply on wheels
Frequency converter
Electrical and mechanical quantity display box with acquisition
Set of 38 safety leads

STUDYING THE 1.5KW DC MOTOR

ref. PACK-DC1

DC motor
Rotary torque sensor
Powder brake
DC-tachogenerator
Stand on wheels
Guide rails
DC variable supply
Wattmeter
Magnetoelectric voltmeter (x2)
Magnetoelectric ammeter (x2)
Power supply master / slave
Torque measuring interface
Multimeter (x2)
Safety starter rheostat
Rheostat
Set of safety leads




HYPERSYNCHRONOUS STUDY SET

ref. PACK-HYPER

Three-phase asynchronous motor (x2)
Stand on wheels
Guide rails
COS φ display box
Central zero power display box
Speed variator
Capacitor bank
Switch box
Set of 47 safety cords

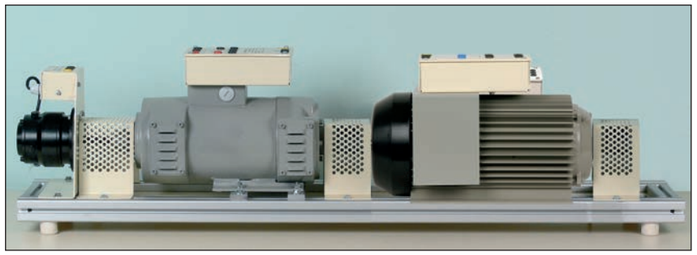





LIVRÉS AVEC DOSSIER PÉDAGOGIQUE
LIVRET ÉLÈVE : ETUDES THÉORIQUES ET TP
LIVRET PROFESSEUR AVEC CORRIGÉS

Technical data sheets detailed on our site

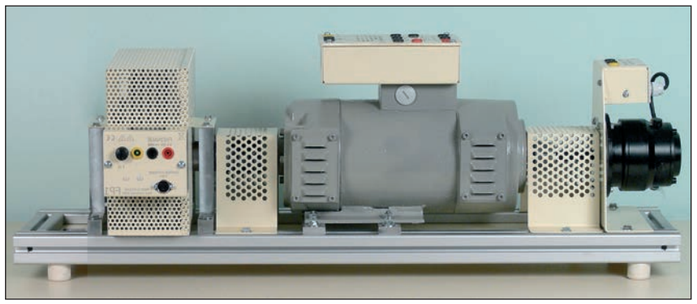
STUDY OF THE DC MOTOR AND THE SYNCHRONOUS MACHINE 300W



COMPOSITION OF THE SET
1 Shunt separated motor 220 / 220V
1 3-phase synchronous machine - alternator
1 Torque sensor
1 DC tachogenerator
1 Display unit torque and speed
1 Power supply inductor DC machine
1 Rheostat
1 Polar wheel power supply
1 Synchronoscope
1 Resistive load
4 Magnétoelectric voltmeters
3 Magnétoelectric ammeters
1 AC & DC multimeter clamp

ref. **PACK-DCAC1**

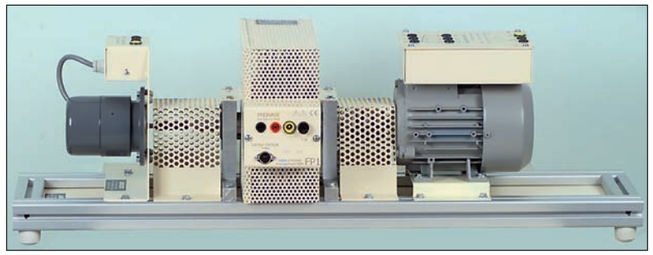
STUDY OF THE DC POLYEXCITATION MOTOR 300W



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

ref. **PACK-DCFR1**

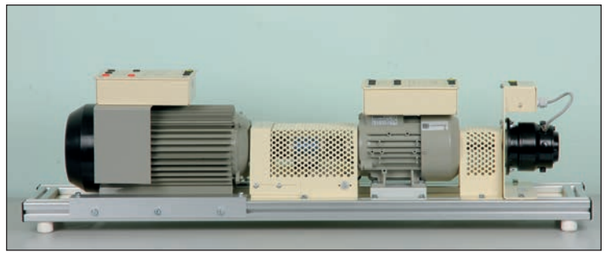
STUDY OF THE 3-PHASE ASYNCHRONOUS MOTOR 300W



COMPOSITION OF THE SET
1 Squirrel cage three-phase induction motor
1 Powder brake
1 Torque sensor
1 DC tachogenerator
1 Variable three-phase power supply
1 Magnetoelectric voltmeter
1 AC & DC Multimeter Clamp
1 Electrical & mechanical quantity display box with acquisition
1 Stand on wheels
1 Safety leads set

ref. **PACK-ACFR1**

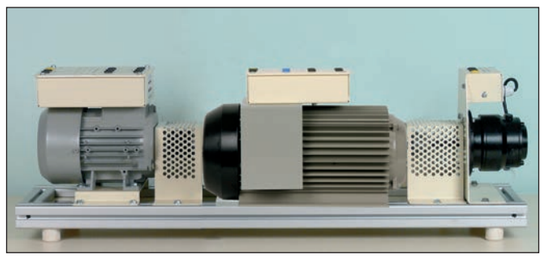
STUDY OF THE 3-PHASE ASYNCHRONOUS MOTOR & THE DC GENERATOR 300W



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

ref. **PACK-ACDC1**

STUDY OF THE 3-PHASE ASYNCHRONOUS MOTOR & THE SYNCHRONOUS MACHINE 300W



COMPOSITION OF THE SET
1 Squirrel cage three-phase induction motor
1 3-phase synchronous machine - alternator
1 Torque sensor
1 DC tachogenerator
1 Variable three-phase power supply
1 Polar wheel power supply
1 Synchronoscope
1 Resistive load
1 Display unit torque and speed
3 Magnétoelectric voltmeters
2 Magnétoelectric ammeters
1 AC & DC multimeter clamp

ref. **PACK-ACAC1**

AC/AC FREQUENCY CONVERTERS (SPEED VARIATORS)

REFERENCES WITH PRIMARY IN 230V SINGLE-PHASE 50/60Hz
Output voltages of these variators: three phase 230V - variable frequency.

REF	ACVAR1	ACVAR1-U	ACVAR5	ACVAR5-U	VAR-BOX	VAR-BOX-03
Emergency stop push button	No	Yes	No	Yes	No	No
For motor power	300W	300W	1500W	1500W	1500W	300W
Constant output current	4,4A	4,4A	8A	8A	8A	4,4A
Maximum transient current	5A	5A	12A	12A	12A	5A

REFERENCES WITH PRIMARY IN 400V 3-PHASE 50/60Hz
Output voltages of these variators: three phase 400V - variable frequency.

REF	ACVAR1-T	ACVAR1-TU	ACVAR5-T	ACVAR5-TU	VAR-BOX-T	ACVAR6
Emergency stop push button	No	Yes	No	Yes	no	no
For motor power	300W	300W	1500W	1500W	1500W	3000W
Constant output current	1.8A	1.8A	4.8A	4.8A	4.8A	7.1A
Maximum transient current	2.3A	2.3A	6.2A	6.2A	6.2A	10.7A

Schneider Electric

Supplied with SoMove

REF	ACVAR325	ACVAR326
Motor power	up to 1500W	up to 3000W
Power supply	200 to 240V single-phase	380 to 500V 3-phase
Frequency	50/60Hz	
Output voltage	3 x 230V	3 x 400V
Nominal output current	8A	7,1A
Bluetooth	No	
Braking resistance output	On terminals	
Programmation console	Yes	

SIEMENS

REF	ACVAR425	ACVAR426
Motor power	up to 1500W	up to 3000W
Power supply	380 to 480V 3-phase	
Frequency	50/60Hz	
Output voltage	3 x 400V	3 x 400V
Nominal output current	4,1A	7,3A
Braking resistance output	Yes (option)	
Programmation console	On terminals	
Console programmation	Yes	

PDF

Technical data sheets detailed on our site

ECONOMICAL AC/AC FREQUENCY CONVERTERS

Reference	ECOVAR-03	ECOVAR-15	ECOVAR-30
Motor power	up to 400W	up to 2200W	up to 4000W
Supply / Frequency	230V 50/60Hz on terminals	230V 50Hz/single on 2P+E socket	400V 3-phase on industrial socket
Output voltage	230V 3-phase on terminals		400V 3-phase on terminals
Constant output current	4A	10A	8,5A
Output frequency possibility to set a maximum frequency	0 – 400Hz		
Protection against the short-circuits between phase	3-phase on terminals		
Protection against over-current	Yes		

AC/DC SPEED CONTROLLER

The DCVAR22 drive controls DC motors with separate excitation or permanent magnet.
On the front, the "Start / Stop" button allows the motor to start and the potentiometer varies the motor rotation speed.
The mains and the motor are connected to Ø4mm safety terminals.
Supplied with operating instructions.
Dim: 320 x 280mm x 130mm.

Features

- Motor power 1500W
- Power supply 230Vac single-phase.
- Frequency 50/60Hz
- Nominal armature current 16A
- Field system nominal current 2A
- Number of quadrant 1 Quadrant (Motor mode)

ref. DCVAR22

VECTOR CONTROL VARIATOR FOR ENCODER MOTOR

ref. VCV522

Features

- Vector control speed variator 2.2kW / 3Hp Max.
- Power supply 3x400VAC 50/60Hz + Earth.
- Output 3x400V + Earth - 5.5A.
- Output frequency of the variator adjustable from 0.1 to 599Hz.
- Acceleration and deceleration ramp with independent adjustment.
- Vector control of current flow.
- 1024pts encoder input.
- Protection against phase failure, overcurrent, overvoltage, thermal….
- Dimensions: 390 x 280 x 185mm.

Schneider Electric

Supplied with SoMove

STAND-ALONE DC AND 3-PHASE POWER SUPPLIES

Transportable variable supplies unit (2000W or 4000W)
Supply from mains: 3-phase 380V/400V + neutral + earth
Outputs: 2 variable DC supplies 0-250V and 1 variable AC 3-phase supply 0-430V

PROTECTION OF THE USER IN DC

- DC supplies are isolated from mains by an insulation transformer.
- The outputs are protected against surges and short-circuits.

OTHER SPECIFICATIONS

- The DC power supply is delivered from a Graetz bridge (Ripple 4%)
- The DC auxiliary outputs is with a double alternation rectification of which the ripple rate changes with the load
- Emergency stop push button - key reset
- Voltage regulation by two autotransformers
- Power cable with industrial 3-phase plug supplied
- Hard-wearing LED lamps
- Outputs on safety terminals Ø 4mm.
- Dimensions 710 x 600 x 375mm - Weight COMPAK20 : 82kg - Poids COMPAK40 : 89kg.

Réf.	COMPAK20	COMPAK40
OUTPUT 0-250VDC	8A + voltmeter & ammeter	16A + voltmeter & ammeter
OUTPUT 0-430V 3-PHASE	5A + voltmeter & ammeter	6A + voltmeter & ammeter
AUXILIARY OUTPUT 0-250V	2.5A + voltmeter & ammeter	2.5A + voltmeter & ammeter

Version with rotating shelf in 19mm melamine - Dimensions: 500 x 280 x H350mm

Réf.	COMPAK20-TAB	COMPAK40-TAB

HIGH POWER DC AND 3-PHASE POWER SUPPLIES

This power supply, which is varied using an autotransformer, can be networked so that it can power other stations. The DC outputs are insulated from the mains, as stipulated in the standard, and monitored by a continuous insulation monitoring device for the safety of users. This monitoring allows the DC output to be networked. The transformer complies with the NFEN6158 norm.

INTRODUCTION AND DESCRIPTION:

- Sheet metal cabinet, fitted on a wheeled base.
- For 3-phase 400V + Neutral + Earth supply from mains
- Voltages can be adjusted using a flywheel.
- One disconnecting switch.
- Hardwearing indicator lights
- One key-operated emergency-stop circuit breaker.
- One ammeter for the DC
- One three-position switch: DC / 0 / three-phase
- Two voltmeters: one for the DC and one for the three-phase
- Outputs: Can be connected in one of two ways – either using an internal terminal for a network cable, or safety terminals for direct use with safety leads.
- Protection: by circuit breakers
- insulation checking by a continuous insulation monitoring device
- UNIT Height: 1000mm / Width: 600mm / Depth: 350mm
- BASE Height: 100mm / Width: 810mm / Depth: 600mm

For safety the DC outputs are separated from the mains by safety isolating transformer

Ref.	PSY40K	PSY60K	PSY90K	PSY120K	PSY150K
I MAX EN CONTINU 0-250V	16A surveillé	24A surveillé	36A surveillé	48A surveillé	60A surveillé
I MAX EN TRI 0-450V	8A	13A	13A	20A	20A
PUISSANCE TOTALE	4.000VA	6.000VA	9.000VA	12.000VA	15.000VA
POUR SECTEUR	TRI + N + T / 400V				

AC/DC PORTABLE POWER SUPPLY

Adjustable from 0 to 230V in DC or AC, this power supply delivers a constant current of 3A.
Protected by a thermal-magnetic circuit breaker, the safety of users is ensured by the separation of circuits.

• Mains input	Mains cable
• On/Off	General luminous switch
• DC variable output	0-240 V
• AC variable output	0-230 V
• Variable voltage setting	rotating knob onto the unit
• Max current DC or AC	3A
• Output displays	1 voltmeter and 1 ammeter
• Input protection	by time delay fuse
• Output protection	thermal-magnetic circuit-breaker
• User's safety	all outputs are insulated from mains
• DC output smoothing	by capacitors, without electronic regulation
• AC/DC commutation	CC – 0 – CA by rotary switch
• Connecting	Safety terminals 4mm
• Dimensions / Weight	210 x 245 x 350mm / 14kg

COMPATIBLE WITH 300W MOTORS

ref. ISOSEC1

AC/DC POWER SUPPLY ON WHEELS (10A)

Supply of AC or DC current in 10A max.AC/DC selector switch on the front of the unit.
Mains cable of 3 metres with plug.

• Mains supply	230V, single-phase
• ON/OFF	push button + LED lamp
• Emergency stop	with key
• DC output	0-230V
• AC output	0-230V
• Adjustement	by a rotary button on the top
• Max output current	10A
• Outputs display	1 voltmeter et 1 ammeter
• Input protection	by fuse
• Outputs protection	by circuit breaker
• Users protection	by insulation from mains (in DC mode only
• Filtering ACDC10	no filtering. double alternation rectification
• Filtering DC10	with filtering. 5% of residual ripple at 10A.
• Switching	DC – 0 – AC (by rotary switch)
• Dimensions / Weight	H 510 x P 280 x P 330 mm / 49 kg
• Wheels	4 (2 of them have a brake)

COMPATIBLE WITH 1500W MOTORS

ref. ACDC10

DUAL DC PORTABLE POWER SUPPLY

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 :	230V / 1A
• Input protection:	by time delay fuses
• Output protection :	by thermal magnetic circuit-breakers
• Smoothing :	by capacitors
• Dimensions / weight :	210 x 245 x 350mm / 20kg.

COMPATIBLE WITH 300W MOTORS

ref. ISOSEC2

PORTABLE CAPACITIVE LOADS 0,5 TO 6 KVAR

- The CH is a capacitve load useable from 0 to the rated power. 4 jump leads to plug in safety terminals, connect a bank of capacitors in 3-phase star 400V, delta 240V or single-phase 240V.
- 6 switches 5%, 10%, 15%, 20%, 25%, 25% regulate the load from 0 to the rated power without interupting the load (ie 0 to 4kVAR for CH40).
- Safety : a discharge resistor is placed at the terminals of each capacitor.
- Male earth socket in standard. Female earth socket upon request.
- Portable unit (in steel). Dim. 500 x 300 x 200mm.
- CEI1010 CATIII 1000Vrms pol2

Réf	CH05	CH05-RP	CH20	CH20-RP	CH40	CH40-RP	CH60	CH60-RP
Power	500VAR		2KVAR		4KVAR		6KVAR	
Nb of switch	6							
Variation in	steps of 5%							
Type	portable	on wheels	portable	on wheels	portable	on wheels	portable	on wheels
Weight	11kg		12kg		13kg		16kg	

SAFETY RESISTIVE LOADS 0,5 TO 8 KW

- The high quality of loads depends directly of the quality of switches used. All of our loads use ultra fast breaker switches, capable of breaking a DC current with an inductive load, for example the current generated by a 3kW dynamo.
- The resistive elements consist of a wire coil wound onto a ceramic core and have a good life because they are coating against the oxydation.
- The input terminals are double insulated and accept equally Ø4mm standard or safety leads.

Réf	RH20	RH40	RH40S	RH60	RH80
W	2kW	4kW		6kW	8kW
Commut.	6		7	6	
Variation par	steps of 5%		steps of 2,5%	steps of 5%	
Type	on wheels				
Poids	44kg			53kg	50kg

Ref	RHP05	RHP05-RP	RHP20	RHP20-RP	RHP40	RHP40-RP
W	0,5kW		2kW		4kW	
Nb switches	6					
Variation in	steps of 5%					
Type	portable	on wheels	portable	on wheels	portable	on wheels
Weight	15kg		19kg		18kg	

OPERATING MODE

- The selection of the operating mode is by 4 insulated input switches
  DC mode or 240V single-phase.
  3-phase star 400V.
  3-phase delta 240V.
  (Exists also for voltages 127/230V in 4kW upon request)

VARIATION

- 6 switches (7 on RH40S model) with the gradation 5%, 10%, 15%, 20%, 25%, 25% allow a continual progression without a break of the load from 0 to 100% in steps of 5% (2.5% on the RH40S).
- All of the intermidiate values are obtained by turning 1 or 2 switches which can be made simultaneously using 2 hands.

Technical data sheets detailed on our site

RESISTIVE & CAPACITIVE SAFETY LOADS

Réf	RCH05-RP	RCH20-RP	RCH40-RP
Power	0,5kW / 500VAR	2kW / 2kVAR	4kW / 4kVAR
Nb of switch	6		
Variation in	steps of 5%		
Type	on wheels	on wheels	on wheels
Weight	30kg	35kg	35kg

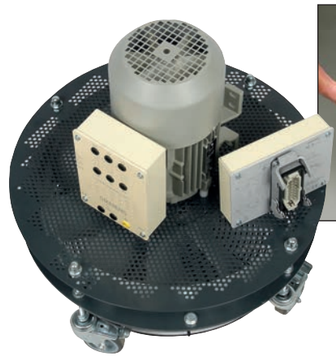
These resistive and capacitive loads have the same technical characteristics as the RHP** and CH** models opposite. Dimensions: 600 x 900 x H1150mm.

MOBILE INDUCTIVE LOADS 2 TO 6 KVAR

Ref.	LH20	LH40	LH60
Reactive rated power	2kVAR	4kVAR	6kVAR
Constant current by phase	3A	6A	9A
Resistance of each coil	2,5 Ω		1,1 Ω
Weight	78kg		75kg

The inductor LH** can vary the power factor continuously from 0.9 to 0.1 in single-phase and 3-phase.

PROPELLER FAN



Ref. VH20-400

ref. VH20 motor 230/400V + interface

ref. VH20-N motor 230/400V

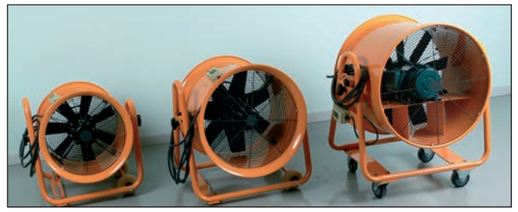
ref. VH20-400 motor 400/690V + interface

ref. VH20-400-N motor 400/690V

On the base of a propeller fan, a 1500W motor is direct-coupled to the propeller in a 500mm diameter shaft. In this way, this small group forms a dynamic load designed for studying the load currents of a motor.

- Four wheels
- Height: 560mm
- Max. external diameter: 530mm
- Power consumption: 0.5kW
- Total weight : 27Kg

INDUSTRIAL FAN MODELS



Réf.	SHT-31	SHT-41	SHT-51
Puissance absorbée	300 W	650 W	1100 W
Vitesse de rotation à 50Hz	1450	1400	1450
Courant par phase en A	0,8	1,6	2,6
Cos phi	0,55	0,6	0,65
Débit en m3/min	92	130	240
Pression en Pa	400	400	480
Bruit dB(A) à 1 mètre	72	74	80
Poids en kg	20	22	39
Diamètre en mm	400	500	600
Dimensions hors tout mm	345x540x650	350x620x720	470x770x885

- Supply: 3-phase 400V + earth
- On/Off switch on the housing of the fan
- Power cord of 5 metre without plug
- Compatible with the 3-phase 400V frequency converter

RHEOSTATS WITH SAFETY TERMINALS 4mm

MODELS 320W - 640W - 1300W - 1900W

Very solidly built, these rheostats with mobile sliders offer a resistance variation from zero to the maximum value of each reference.
The tolerance of the values evolves according to the series and temperatures: +/- 10%.
If the resistance value allows it, the maximum operating voltage is 600V.
Construction according to standard EN-61010-1.
Laboratory use. IP20 protection rating.

ECO1/2

Rheostats 320W	
Ref.	**VALUES**
ECO1/2-1	0 to 1Ω / 18A
ECO1/2-10	0 to 10Ω / 5,7A
ECO1/2-15	0 to 15Ω / 4,5A
ECO1/2-33	0 to 33Ω / 3,1A
ECO1/2-47	0 to 47Ω / 2,6A
ECO1/2-220	0 to 220Ω / 1,2A
ECO1/2-330	0 to 330Ω / 1A
ECO1/2-470	0 to 470Ω / 0,8A
ECO1/2-680	0 to 680Ω / 0,7A
ECO1/2-1000	0 to 1000Ω / 0,6A
ECO1/2-3300	0 to 3300Ω / 0,3A

Dim. : 270 x 92 x 163mm / 1,9kg

ECO2

Rheostats 1300W	
Ref.	**VALUES**
ECO2-0.5	0 to 0,5Ω / 50A
ECO2-1.6	0 to 1,6Ω / 28A
ECO2-5	0 to 5Ω / 16A
ECO2-11.5	0 to 11,5Ω / 10A
ECO2-16.5	0 to 16,5Ω / 8.7A
ECO2-23.4	0 to 23,4Ω / 7.2A
ECO2-33	0 to 33Ω / 6A
ECO2-50	0 to 50Ω / 5A
ECO2-106	0 to 106Ω / 3.3A
ECO2-165	0 to 165Ω / 2.8A
ECO2-500	0 to 500Ω / 1.6A
ECO2-1650	0 to 1650Ω / 0.9A
ECO2-5000	0 to 5kΩ / 0.5A

Dim. : 470 x 164 x 163mm / 5,5kg

ECO1

Rheostats 640W	
Ref.	**VALUES**
ECO1-1	0 to 1Ω / 25A
ECO1-3.3	0 to 3,3Ω / 14A
ECO1-4.7	0 to 4,7Ω / 12A
ECO1-6.8	0 to 6,8Ω / 10A
ECO1-10	0 to 10Ω / 8A
ECO1-15	0 to 15Ω / 6,5A
ECO1-25	0 to 25Ω / 5A
ECO1-33	0 to 33Ω / 4,4A
ECO1-50	0 to 50Ω / 3,6A
ECO1-68	0 to 68Ω / 3A
ECO1-150	0 to 150Ω / 2A
ECO1-650	0 to 650Ω / 1A
ECO1-1000	0 to 1000Ω / 0,8A
ECO1-1500	0 to 1500Ω / 0,65A
ECO1-2200	0 to 2200Ω / 0,54A
ECO1-4700	0 to 4700Ω / 0.37A
ECO1-10000	0 to 10kΩ / 0,25A

Dim. : 470 x 92 x 163mm / 3kg

ECO3

Rheostats 1900W	
Ref.	**VALUES**
ECO3-0.33	0 to 0,33Ω / 76A
ECO3-1.1	0 to 1,1Ω / 42A
ECO3-3.3	0 to 3,3Ω / 24A
ECO3-11	0 to 11Ω / 13A
ECO3-333	0 to 333Ω / 2,4A
ECO3-1100	0 to 1100Ω / 1,4A
ECO3-3300	0 to 3300Ω / 0,76A

Dim. : 470 x 248 x 163mm / 8,3kg

3-PHASE RHEOSTAT 3 RESISTANCES

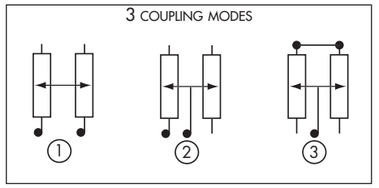
Rheostats 1900W	
Ref	**VALUES**
ECOTRI-1	0 to 3 x 1Ω / 3 x 25A
ECOTRI-3.3	0 to 3 x 3,3Ω / 3 x 14A
ECOTRI-10	0 to 3 x 10Ω / 3 x 8A
ECOTRI-33	0 to 3 x 33Ω / 3 x 4.4A
ECOTRI-100	0 to 3 x 100Ω / 3 x 2.5A
ECOTRI-330	0 to 3 x 330Ω / 3 x 1.4A
ECOTRI-1000	0 to 3 x 1kΩ / 3 x 0.8A
ECOTRI-3300	0 to 3 x 3,3kΩ / 3 x 0.44A
ECOTRI-10000	0 to 3 x 10kΩ / 3 x 0.25A

Dim. : 470 x 248 x 163mm / 8,3kg

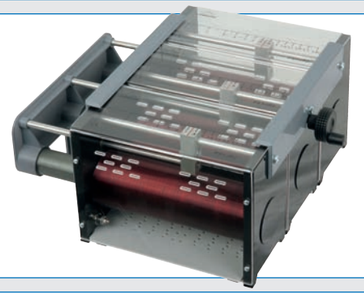
- There are 3 resistors inside this rheostat all insulated from each other
- One button allows the varying of the resistance of all of them simultaneously.
- Connected in star or delta, these rheostats act as a balanced 3-phase load.
- 9 safety terminals + 1 earth terminal.

RHEOSTATS WITH 3 RANGES ACCORDING TO THE COUPLING

Ref.	MODE 1	MODE 2	MODE 3
SPECO-2	0 to 2Ω / 25A	0 to 1Ω / 25A	0 to 0.5Ω / 50A
SPECO-6	0 to 6.6Ω / 14A	0 to 3.3Ω / 14A	0 to 1.6Ω / 28A
SPECO-20	0 to 20Ω / 8A	0 to 10Ω / 8A	0 to 5Ω / 16A
SPECO-50	0 to 46Ω / 5A	0 to 23Ω / 5A	0 to 11.5Ω / 10A
SPECO-66	0 to 66Ω / 4.4A	0 to 33Ω / 4.4A	0 to 16.5Ω / 8.8A
SPECO-100	0 to 92Ω / 3.6A	0 to 46Ω / 3.6A	0 to 23Ω / 7.2A
SPECO-136	0 to 132Ω / 3A	0 to 66Ω / 3A	0 to 33Ω / 6A
SPECO-200	0 to 200Ω / 2.5A	0 to 100Ω / 2.5A	0 to 50Ω / 5A
SPECO-420	0 to 420Ω / 1.7A	0 to 210Ω / 1.7A	0 to 105Ω / 3.4A
SPECO-660	0 to 660Ω / 1.4A	0 to 330Ω / 1.4A	0 to 165Ω / 2.8A
SPECO-1,3K	0 to 1.3kΩ / 1A	0 to 650Ω / 1A	0 to 325Ω / 2A
SPECO-2K	0 to 2kΩ / 0.8A	0 to 1kΩ / 0.8A	0 to 500Ω / 1.6A
SPECO-6K	0 to 6.6kΩ / 0.44A	0 to 3.3kΩ / 0.44A	0 to 1.6kΩ / 0.9A
SPECO-20K	0 to 20kΩ / 0.25A	0 to 10kΩ / 0.25A	0 to 5kΩ / 0.5A



VARIABLE INDUCTIVE LOAD (SINGLE & 3-PHASE)



Normal reactive power	1 kVAR
Reactive power for 10 min	1.5 kVAR
Constant current by phase	2A max
Variation of inductance for each phase	3 x 0.1 to 1.4H

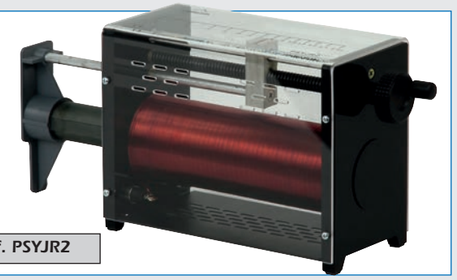
ref. LH10-2

- Dims 320 x 320 x 320 mm.
- Weight 8 kg.
- CEI1010 CATIII 1000Vrms pol2

SAFETY VARIABLE INDUCTANCE

Inductor equipped with safety terminals. The inductance coil is fitted in a transparent case.
- Inductance: progressively adjustable from 0.15 to 1.4H.
- Resistance: 18Ω
- Max. current: 2A
- Max voltage : 250V
- Overvoltage factor: 22
- Graduated in Henry.
- Dimensions: 320 x 110 x 170mm / Weight: 2.6kg

ref. PSYJR2



COVERED SINGLE-PHASE INDUCTION COILS (SAFETY TERMINALS)

	1mH	3mH	10mH	30mH	100mH	300mH	1H	3H
0,1A	/	/	/	/	/	/	***L101***	***L301***
0,5A	/	/	/	***L30M05 (4,70Ω)***	***L100M05 (11Ω)***	***L300M05 (10,3Ω)***	***L105 (23Ω)***	***L305 (30,8Ω)***
1A	***L1M1 (0,25Ω)***	/	***L10M1 (0,6Ω)***	***L30M1 (1,74Ω)***	***L100M1 (2,27Ω)***	***L300M1 (2,80Ω)***	***L11 (8Ω)***	***L31 (18,00Ω)***
2A	/	/	***L10M2 (0,5Ω)***	***L30M2 (0,80Ω)***	***L100M2 (1,40Ω)***	***L300M2 (4,00Ω)***	***L12 (4,70Ω)***	***L32 (8,30Ω)***
3A	/	***L3M3 (0,24Ω)***	***L10M3 (0,34Ω)***	***L30M3 (0,66Ω)***	***L100M3 (1,00Ω)***	***L300M3 (0,90Ω)***	***L13 (4,30Ω)***	***L33 (6,40Ω)***
4A	***L1M4 (0,16Ω)***	***L3M4 (0,20Ω)***	***L10M4 (0,29Ω)***	***L30M4 (0,44Ω)***	***L100M4 (0,85Ω)***	***L300M4 (4,10Ω)***	***L14 (2,00Ω)***	/
5A	***L1M5 (0,09Ω)***	***L3M5 (0,13Ω)***	***L10M5 (0,19Ω)***	***L30M5 (0,20Ω)***	***L100M5 (0,52Ω)***	***L300M5 (1,70Ω)***	***L15 (2,30Ω)***	/
6A	***L1M6 (0,09Ω)***	***L3M6 (0,13Ω)***	***L10M6 (0,19Ω)***	***L30M6 (0,40Ω)***	***L100M6 (0,60Ω)***	***L300M6 (0,90Ω)***	***L16 (1,60Ω)***	/
8A	***L1M8 (0,04Ω)***	***L3M8 (0,07Ω)***	***L10M8 (0,12Ω)***	***L30M8 (0,15Ω)***	***L100M8 (0,30Ω)***	***L300M8 (0,66Ω)***	/	
10A	***L1M10 (0,04Ω)***	***L3M10 (0,066Ω)***	***L10M10 (0,15Ω)***	***L30M10 (0,16Ω)***	***L100M10 (0,40Ω)***	***L300M10 (0,51Ω)***	/	
15A	***L1M15 (0,021Ω)***	***L3M15 (0,041Ω)***	***L10M15 (0,07Ω)***	***L30M15 (0,13Ω)***	***L100M15 (0,30Ω)***	***L300M15***	/	
20A	***L1M20 (0,019Ω)***	***L3M20 (0,03Ω)***	***L10M20 (0,06Ω)***	***L30M20 (0,09Ω)***	***L100M20***	***L300M20***	/	

STANDARD TRANSFORMERS

From 63 to 160VA transformers are moulded.
For higher power, transformers are covered (steel protective cover).
Summary table of the single-phase transformers the most frequently sold.

Ref.	Type	Power	Primary 230V	Secondary	
MN00-10	single-phase steel-covered	40VA	■	230V	■
MN00-15	single-phase moulded	40VA	■	12V	■
MN01-02	single-phase moulded	63VA	■	24V	■
MN01-13	single-phase moulded	63VA	■	2 x 12V	■
MN02-02	single-phase moulded	100VA	■	24V	■
MN02-03	single-phase moulded	100VA	■	2 x 12V	■
MN02-13	single-phase moulded	100VA	■	2 x 12V	■
MN03-02	single-phase moulded	160VA	■	24V	■
MN03-12	single-phase moulded	160VA	■	24V	■
MN03-13	single-phase moulded	160VA	■	2 x 12V	■
MN05-02	single-phase steel-covered	250VA	■	24V	■
MN08-00	single-phase steel-covered	500VA	■	230V	■

PRIMARY 230V ON SAFETY TERMINALS

PRIMARY 230V ON MAINS CABLE

SECONDARY ON 3 SAFETY TERMINALS

SECONDARY ON 2 SAFETY TERMINALS

SINGLE-PHASE TRANSFORMERS

Insulation transformers which conform to standard NFEN61558 with protective cover (contact us regarding bare models).
- Tolerance 10%
- Value at 100Hz (or 50Hz in fullwave)

CONNECTION METHOD to be specified when ordering

Réf.	Puissance VA	Type
MN00	40	Surmoulé
MN01	63	Surmoulé
MN02	100	Surmoulé
MN03	160	Surmoulé
MN04	200	Capoté
MN05	250	Capoté
MN06	300	Capoté
MN07	400	Capoté
MN08	500	Capoté
MN09	630	Capoté
MN10	750	Capoté
MN11	1000	Capoté
MN12	1600	Capoté
MN13	2500	Capoté
MN14	3000	Capoté
MN15	4000	Capoté

SAMPLE OF ORDER

LABORATORY SINGLE-PHASE TRANSFORMER

POWER ——— 750VA (see selection table opposite)
REF. ——— MN10 (see selection table opposite)

PRIMARY ——— 230V (SELECT)
CONNECTION METHOD — MAINS CABLE
ou — X SAFETY TERMINALS

SECONDARY ——— 24V (SELECT)
CONNECTION METHOD — X SAFETY TERMINALS
ou — POWER SOCKET (2P)

VARIABLE TRANSFORMER (INSULATED)

Ref.	SEC1	SEC2	SEC3	SEC4
Output voltage	0-240V		0-48V	
Current	2,5A	5A	12,5A	25A
Weight	19kg	25kg	27kg	26kg

- The case contains one insulation transformer and one variable autotransformer.
- The secondary can be connected by secure terminals of Ø4mm. Dims : 210 x 245 x 350mm.

PDF
Technical data sheets detailed on our site

3-PHASE TRANSFORMERS

Ref.	Power VA
TR05	250
TR08	500
TR09	630
TR10	750
TR11	1000
TR12	1600
TR13	2500
TR14	3000
TR15	4000

The transformers of this table are with 3 windings at the primary and 3 windings at the secondary, without intermediate taps.
In other cases, please contact us.

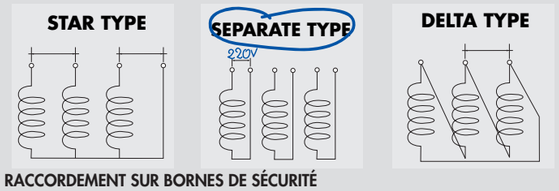
Insulated transformers which conform to standard NFEN61558, with protective cover.
Contact us regarding bare model

SAMPLE OF ORDER

LABORATORY 3-PHASE TRANSFORMER

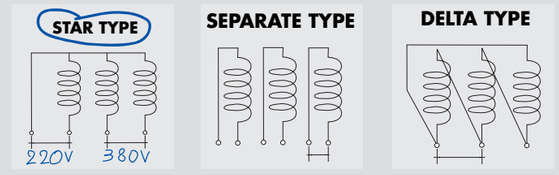
POWER ——— 1000VA (see selective table)
REF. ——— TR11 (see selective table)

PRIMARY (choice of couplings and voltage)



RACCORDEMENT SUR BORNES DE SÉCURITÉ

SECONDARY (choice of couplings and voltage)



CONNECTION TO SAFETY TERMINALS

ZIG-ZAG TRANSFORMERS

	POWER		All couplings
REF	**Secondary**	**Primary**	**Secondary**
ZIG11	1000VA	230/400 V	6x115V or 6x133V
ZIG12	1600VA	230/400 V	6x115V or 6x133V
ZIG13	2500VA	230/400 V	6x115V or 6x133V
ZIG14	3000VA	230/400 V	6x115V or 6x133V
ZIG15	4000VA	230/400 V	6x115V or 6x133V

PRINCIPLE

Our primary zig-zag transformer comprises three windings, whereas the secondary one comprises six half-windings. All of these windings are galvanically isolated from each other. Students practise wiring the primary winding into a star or delta, and the secondary winding into a star, delta or zig-zag. In total, this is six schematics: Yy , Yd , Yz , Dy , Dd , Dz.
The coils are designed in such a way that the voltage outputs always correspond to the 230/400V standard. The section of the wire is calculated in such a way that the rated power in the secondary is available regardless of the connection schematic used.
Interconnections are made using safety cables, directly on the terminal board. The following are symbolised on the terminal board:

- the coils
- with a point, the direction of the coil
- with upper case letter, the terminals of the primary transformer
- with lower case letters, the terminals of the secondary transformer.
- the safety conductor

Comprehensive instructions with Fresnel diagrams explain how the combination of coils alters the phase-to-ground and composite voltages. They explain how to determine the time index.

A method shows how to find out the direction of the coils in an unmarked zig-zag transformer.

VARIABLE AUTOTRANSFORMERS

These variable autotransformers are available in 3 designs.
- Bare for references finishing with a "N"
- With a stainless steel case for references finishing with "A" or "P"
- Protected by a case, fitted with 4 casters, circuit breaker and ON/OFF LED for references finishing with a "PE"

Covered (P and PE) units have a mains cable at the primary and safety terminals at the secondary.

BARE DESIGN


TRT8N

Single-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
ALT5N	1,25kVA	220/240V	0-250V	5A	5,2kg	151 x 151 x 123mm
ALT7N	1,85kVA	220/240V	0-260V	7A	7,7kg	175 x 175 x 123mm
ALT13N	3,38kVA	220/240V	0-260V	13A	13,3kg	233 x 233 x 123mm

Three-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
TRT5N	3,72kVA	380/400V	0-430V	5A	19kg	155 x 155 x 407mm
TRT8N	6,23kVA	380/400V	0-450V	8A	27kg	181 x 181 x 407mm
TRT13N	10,13kVA	380/400V	0-450V	13A	39kg	233 x 233 x 422mm
TRT20N	15,60kVA	380/400V	0-450V	20A	56kg	310 x 310 x 402mm


ALT5N

COVER DESIGN - PRIMARY ON MAINS CABLE


TRT30A

Single-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
ALT7A*	1,85kVA	220/240V	0-260V	7A	8,8kg	Ø202 x 157mm
ALT13A*	3,28kVA	220/240V	0-260V	13A	13,5kg	Ø268 x 157mm
ALT15A	3,90kVA	220/240V	0-260V	15A	22kg	286 x 286 x 200mm

* fuses at secondary

Three-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
TRT8A	6,23kVA	380/400V	0-450V	8A	33kg	200 x 200 x 468mm
TRT13A	10,13kVA	380/400V	0-450V	13A	48kg	286 x 286 x 468mm


ALT5A


ALT15A

COVER DESIGN WITH CIRCUIT BREAKERS & LIGHT - PRIMARY ON MAINS CABLE


TRT8-PE

Single-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
ALT5-PE	1,25kVA	220/240V	0-250V	5A	8,9kg	230 x 140 x 250mm
ALT7-PE	1,85kVA	220/240V	0-260V	7A	11,5kg	230 x 140 x 250mm
ALT13-PE	3,28kVA	220/240V	0-260V	13A	14,6kg	230 x 140 x 250mm

Three-phase						
Ref	**Power**	**Primary**	**Secondary**	**Secondary**	**Weight**	**Dims mm**
TRT5-PE	3,72kVA	380/400V	0-430V	5A	30kg	280 x 340 x 510mm
TRT8-PE	6,23kVA	380/400V	0-450V	8A	37kg	280 x 340 x 510mm
TRT13-PE	10,13kVA	380/400V	0-450V	13A	48kg	280 x 340 x 530mm
TRT20-PE	15,60kVA	380/400V	0-450V	20A	71kg	350 x 360 x 600mm

Models on wheels


ALT5-PE

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