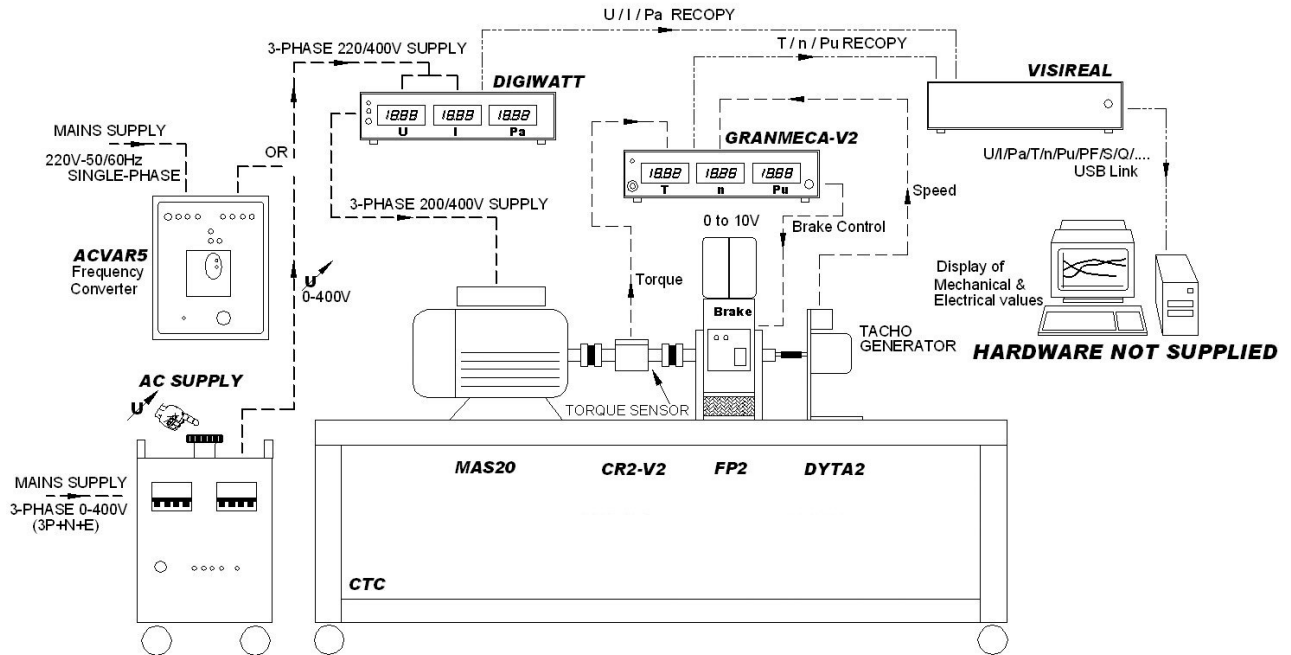


**PACK-AC1: Complete kit for studying the 1.5kW**

The PACK-AC1 power unit kit (power unit + accessories) can be used for studying the short-circuited 220/400V 1500W, three-phase, asynchronous induction motor with rotor in short-circuit. Several measurements can be taken and the motor load properties can be monitored on a PC.

**TUTORIALS DESCRIBED IN THE INSTRUCTIONS SUPPLIED WITH MOTOR PACK REF. PACK-AC1**

- **Study of the star/triangle coupling of the asynchronous motor.**
  - Understanding and undertaking motor wiring.
  - Measurements and comparison of the various voltage and current values according to the coupling type selected.
  - Measurement of properties on a PC.
- **Study of the operation of the motor controlled by the speed controller (frequency converter)**
  - Understanding and undertaking the wiring of the speed controller to the motor.
  - Adjustment of speed controller settings.
  - Adjustment of motor acceleration and deceleration rotation speed settings.
  - Measurement on a PC of the rotation speed properties as a function of time.
- **Study of motor operation with no load, with a load and with an overload, using the 230/400V three-phase power supply.**
  - Theoretical reminders of the mathematical formulae concerning an asynchronous induction motor.
  - Understanding and undertaking motor wiring with measuring and monitoring devices.
  - Calculation of the electrical and mechanical quantities of the motor based on its identification plate, such as:
    - ✓ Synchronism speed
    - ✓ Slip
    - ✓ Power consumption
    - ✓ Reactive power
    - ✓ Number of pairs of motor poles
    - ✓ Power consumption
    - ✓ Efficiency
    - ✓ Apparent power
  - Creation of a table containing calculations and measurements of electrical and mechanical quantities at various points of the motor load:
    - ✓ Current consumption
    - ✓ Rotation speed
    - ✓ Motor torque
    - ✓ Apparent power
    - ✓ Slip
    - ✓ Power consumption
    - ✓ Useful power
    - ✓ Power factor
    - ✓ Reactive power
    - ✓ Efficiency
  - Monitoring on the PC and comments about the various motor load curves
  - Comparison of the theoretical calculation of values with those values measured during the motor tests
  - Plotting of properties based on motor measurements such as:
    - ✓ Torque as a function of the speed\*
    - ✓ Torque as a function of useful power\*
    - ✓ Efficiency as a function of useful power\*
    - ✓ Reactive power as a function of useful power\*
    - ✓ Current as a function of useful power\*
    - ✓ Power factor as a function of useful power\*
    - ✓ Rotation speed as a function of useful power\*
    - ✓ Slip as a function of useful power\*

\* or other variable

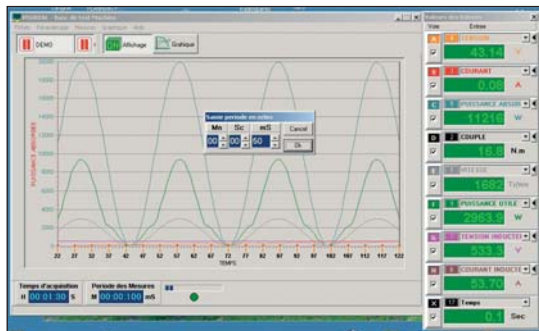
# asynchronous motor with PC monitoring

## OPERATING PRINCIPLE

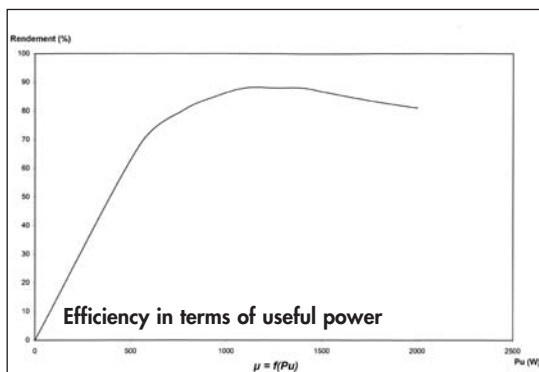
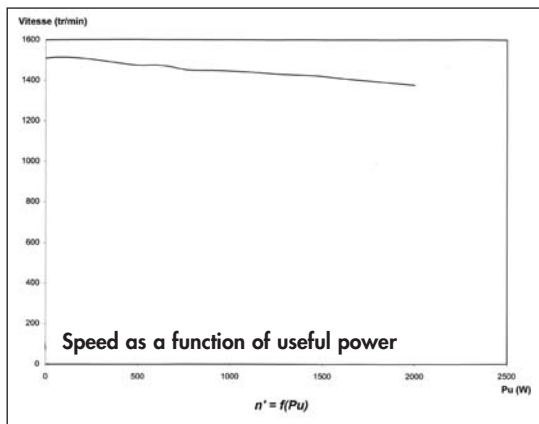
A speed controller, constant V/F frequency converter, controls the motor's rotation speed according to the various acceleration or deceleration ramps. A three-phase power supply on casters is also used to supply power to the motor, replacing the speed controller.

A 1500W ventilated powder brake loads the motor with values of between 0 and 125% inclusive of the rated load. A brushless torque sensor (requiring no maintenance) measures the various torque values, whereas a DC tachogenerator provides an image signal of the motor's rotation speed. A first unit, with three digital displays, shows the electrical quantities such as voltage, current and power used by the motor. The second unit, which also has three displays, shows the mechanical quantities such as torque, rotation speed and useful power.

All of these quantities, as well as the motor load curves, can be displayed in real time on a PC, before being printed out.

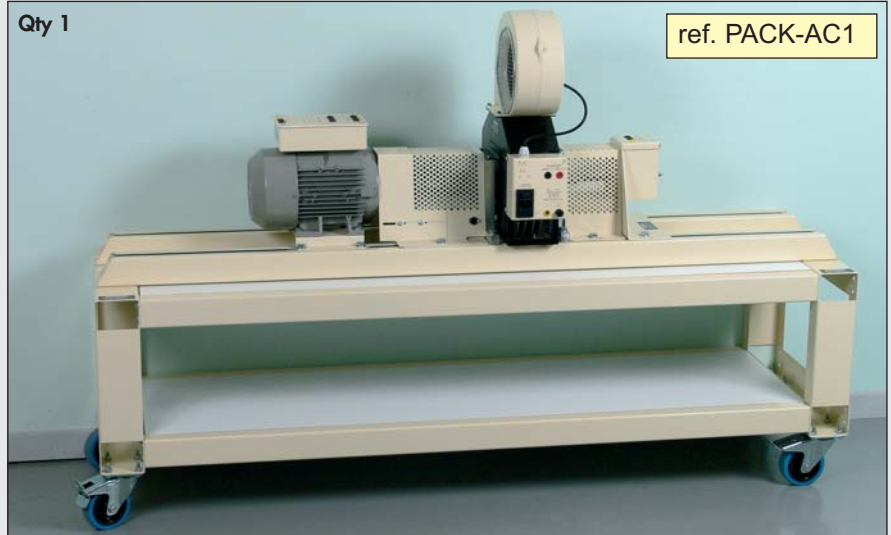


Example of monitoring with a display of curves and values



## DESCRIPTION OF THE 11 ITEMS INCLUDED IN PACK-AC1 REFERENCE

Qty 1



ref. PACK-AC1

**3-phase asynchronous motor**

Ref. MAS20 - Qty 1

(features P. 62)

**Rotary torque sensor**

Ref. CR2-V2 - Qty 1

(features P. 63)

**Powder brake**

Ref. FP2 - Qty 1

(features P. 63)

**DC tachogenerator**

Ref. DYTA2 - Qty 1

(features P. 63)

**Transport carriage**

Ref. CTC - Qty 1

(features P. 72)

Qty 1



**3-phase supply on wheels**

Ref. TRT8PE

(features P. 84)

Qty 1

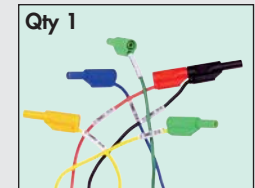


**Frequency converter**

Ref. ACVAR5

(features P. 74)

Qty 1



**Set of safety leads**

Ref. 300S

(features P. 227)

Qty 1



**Digital wattmeter**

Ref. DIGIWAT

(features P. 68)

Qty 1

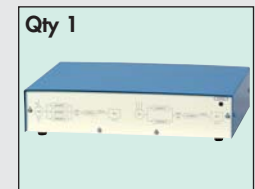


**Measurement of mechanical quantities**

Ref. GRANMECA-V2

(features P. 67)

Qty 1



**Real time and monitoring system**

Ref. VISIREAL

(features P. 69)

Instructions are supplied with the motor kit, including measurements, curves and theoretical reminders.

ALSO AVAILABLE IN 300W.  
CONTACT US.