

HYPERSYNCHRONOUS STUDY SET



3-phase asynchronous motor
Ref. MAS22 - Qty 2
 230/400 VAC- 1,5KW
 with housings

Stand on wheels
Ref. CTA - Qty 1
Guide rails
Ref. RGA - Qty 1



Display unit of the power factor
Ref. PSY-C - Qty 1
 Indicates from 0.5 inductive to 0.5 capacitive with "1" vertical in the center of the dial.



Display unit of the central zero power
Ref. PSY-W - Qty 1
 Indicates from -1.5kW to 1.5kW with the vertical zero in the center of the dial.



Speed controller
Ref. ACVAR5 - Qty 1
 Mains single-phase 230VAC,
 output 3 x 230VAC- 1.5KW



1 Capacitive load bank
Ref. CH20 - Qty 1
 Widely sized



Set of 47 safety leads
Ref. 300S - Qty 1 set

1 switching case
 For an easy synchronization on the national electrical network

An asynchronous motor can convert mechanical energy into electrical energy. To perform this conversion, it has to be driven above the synchronous speed. PACK-HYPER is a set of 2 asynchronous motors mounted on the same axis of rotation with accessories to study hypersynchronous behaviour. The speed controller drives the first motor above its synchronous speed so that the second becomes a three-phase generator. A central zero wattmeter indicates the direction of the electrical energy consumed or fed in the case of feeding into the grid. A central COS ϕ phase-meter demonstrates the change of COS ϕ following the addition of capacitors or speed variation.

EDUCATIONAL OBJECTIVES

- Studying the hyposynchronous and hypersynchronous operations of an asynchronous motor.
- Studying the effect of a battery of capacitors on the COS ϕ value.
- Studying synchronisation with the national grid.
- Studying energy use at an isolated site.
- Calculating the outputs of an energy production system.
- Using a clamp ammeter.

TEACHING RESOURCES STUDENT & TEACHER

Proposed practical work

- Procedure of synchronisation with the national grid.
- Hyposynchronous and hypersynchronous measurement.
- Reading COS ϕ using a battery of capacitors and consequences.
- Plotting of the electrical characteristics of the energy production system.
- Calculation of the overall output.
- Study of the operation at an isolated site.

ref. PACK-HYPER

