

Renewable energies

DL THERMO-A



For what concerns the thermal solar energy, our proposal includes a complete installation, starting from the solar module for the heating of the water (that can also be provided in a "simulator" version for its use inside a classroom) and complete with the distribution and control plant together with an example of application, like, for instance, an electrical heater where the air is heated by the hot water coming from the thermal energy plant. It incorporates six temperature probes available at four different points, and a solar irradiation sensor that is used to calculate energy.

DL WIND-B



For those who cannot control the wind conditions and need to perform the same experiments inside a classroom, we have developed the wind tunnel. With this trainer it is possible to change the flow of the air that reaches the wind turbine and to experiment its operation at different loads in order to observe the brake that the loads generate. It is composed of a wind tunnel in which we have installed: a single-phase industrial fan with electronic speed regulator, a 12V, 40W wind turbine, with a mechanism for a $\pm 30^\circ$ change with respect to the source of the wind, an anemometer, instruments for measuring speed, voltage and current and resistive loads.

DL WIND-A



The study of the wind energy, due to differences in the temperature that are generated by the solar heating, is performed through two trainers. The first one, more traditional, is composed of a classic aero generator, that needs a natural wind source to operate. In this case, we have a 250W, 12V wind generator, a wind sensor and a set of modules to experience loads, dc current generation and dc/ac current conversion through inverter, a battery charge module as well as an actual battery and the necessary meters to measure the relevant parameters.

