



## SOLAR THERMAL ENERGY TRAINER



### DL THERMO-A2

Didactic system for the theoretical and practical study of solar power facilities used to obtain hot water for sanitation, air conditioning and similar services.

It is a forced circulation system with a wide range of didactic applications. It incorporates six temperature probes available at four different points, and a solar irradiation sensor that is used to calculate energy.

Complete with connecting cables, experiment manual and software for data acquisition from the solar controller and processing.

#### TRAINING OBJECTIVES

- Identification of all components and how they are associated with its operation.
- Interpretation of the technical parameters of all components.
- Local control of the processor
- Heating and check of the convector heater
- Forcing the reserve energy
- Forcing the recirculation pump
- Sizing criteria for ACS facilities, air conditioning, etc.
- Assembly and maintenance criteria for facilities.
- Interpretation of situational data supplied by the control.

Average training hours: 8h

Approx. packing dimensions: 1.37 x 1.47 x 2.12 m.

Gross weight: 375 kg.

Net weight: 216 kg.

#### ALTERNATIVE: DL THERMO-A1

Trainer with a simulator of a solar panel supplied by the mains, instead of a real solar panel, to allow performing the practical exercises in a classroom.

#### TECHNICAL SPECIFICATIONS

The trainer is composed of three operating units, as follows:

##### MAIN MODULE

Dimensions 1000 x 650 x 1650 mm., front panel with the block diagram of the system. It contains the components for the circulation, storage and control of the liquid in the primary and secondary circuits. These components are placed vertically on a base, facilitating comfortable access to all parts for assembly and disassembly operations carried out during the practical sessions described in your handbook. The front control panel is placed in the top part of the main module and it is composed of: block diagram of the system, electronic control centre with an LCD screen for the visualization of the data, situation lights. The hydraulic sockets for cold water inlet, hot sanitary water outlet, connection to the solar panel, etc., are located at the back of the module.

##### SOLAR PANEL

Trainer with a real solar panel placed in a metal structure and connected to the main module through flexible pipes, provided with discharge, safety and filling valves.

##### CONVECTOR HEATER

As a means of applying the hot water produced, a convector heater is available for use. It is connected through flexible pipes. This component allows us to experiment with the effects of hot water obtained with this system. However, the system is sufficiently open to permit easy use with other applications, such as hot sanitary water supply, under-floor heating, etc.