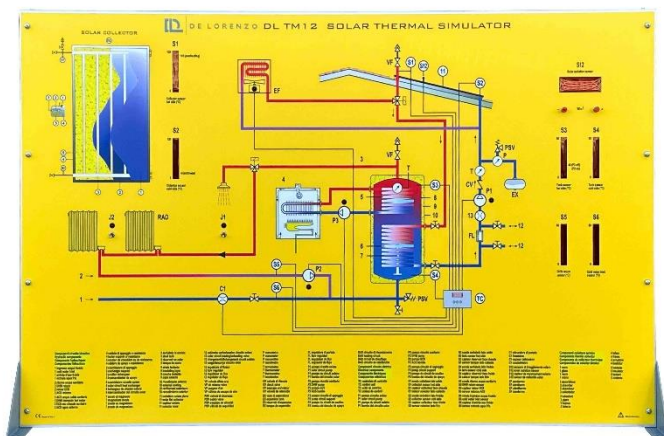




SOLAR THERMAL HOME PLANT SIMULATOR



DL TM12

Didactic system for the theoretical study of solar plants that are used to get hot water for sanitary and air conditioning purposes or other civil applications.

The simulator allows a wide range of didactic applications. It also simulates six temperature probes available in different points of the circuit and a solar irradiation sensor that is used to calculate the absorbed energy.

TRAINING OBJECTIVES

It allows performing the following teaching activities:

- Identification and study of all the components of solar thermal circuits and of their connections.
- Interpretation of the technical parameters of all the components.
- Dimensioning criteria for of sanitary hot water installations, etc.
- Criteria for assembly and maintenance of the plants.
- Interpretation of the data provided by the control system.

Average training hours: 10h (including 2h for fault finding).

Dimensions: 0.66 x 1.04 x 0.35 m.

Net weight: 16 kg.

The system is supplied with a manual containing exercises and the theory about solar thermal systems and that addresses the following topics:

- The solar energy
- Systems for exploiting the solar energy
- Types of solar thermal systems
- Main components of a solar thermal system
- Sizing of collectors, pipes and tanks
- Examples of how to dimensioning a plant

TECHNICAL DESCRIPTION

The trainer simulates the following three operating sections:

PRIMARY SYSTEM

Represented on the panel by the diagram of the circulation of the liquid, coming from the collector, that heats the water contained in the storage tank.

SOLAR THERMAL COLLECTOR

Provided with two temperature probes for the hot (inlet) and cold (return) liquid. A light sensor detects the solar radiation and allows the plant to be operational or not operational (night). This part of the circuit is complete with an automatic lowering of the temperature where it is too high in the primary circuit.

SECONDARY CIRCUIT (use of the hot water)

As an application of the production of hot water, the circuit of the use of the hot water that has been obtained is here represented. In this part of the circuit we have: a tank sensor on the hot side, one on the cold side, one at the cold water inlet and one at the used hot water outlet. Displays and led bars allow the visualization of the temperature values in order to control the operation of the plant.