

SIMULATOR OF SOLAR THERMAL COMBISYSTEM FOR SPACE HEATING AND DOMESTIC WATER HEATING

Mod. SIM-BSC/EV

INTRODUCTION

The simulator, properly designed on educational purposes, allows to study the operation of active solar thermal systems for both space heating and domestic water heating for individual users.

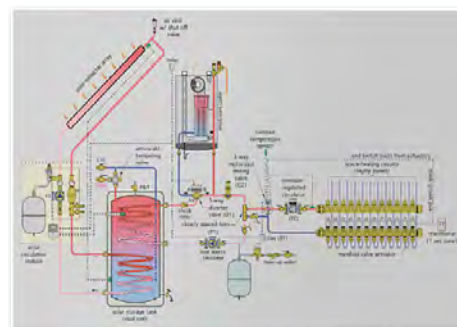
It must necessarily be connected to the PC (not included).

TRAINING PROGRAM:

- Instantaneous solar collector efficiency
- Flat plate collectors and evacuated tube collectors
- Controllers for solar thermal systems
- Outdoor reset controller
- Freeze protection methods:
 - Antifreeze based systems
 - Drainback systems
- Coil or plate heat exchangers
- Single-tank and two-tank systems
- Mixing and diverting valves

TECHNICAL SPECIFICATIONS:

- Coloured panel reproducing a typical solar thermal combisystem for space heating and domestic water heating
- Data acquisition and actuators control board
- PC connection via USB cable
- 9 potentiometers to simulate the following analog inputs:
 - Solar collector outlet temperature
 - Temperature at the tank bottom
 - Solar controller setpoint
 - Temperature at the tank top
 - Domestic hot water tank setpoint
 - Temperature at the 2nd tank bottom
 - Temperature at the 2nd tank top
 - Outdoor temperature
 - Space heating supply water temperature
- 3 bar-LEDs to simulate the following analog outputs:
 - Space heating water supply temperature based on outdoor reset control
 - Space heating mixing valve control signal
 - Space heating pump speed
- 4 switches to simulate the following digital inputs:
 - System enabling
 - Room thermostat
 - 2nd room thermostat
 - Domestic hot water request
- 6 LEDs to simulate the following digital outputs:
 - Solar circuit pump status



- Solar circuit diverting valve status
- DHW integration electric heater status
- Primary and secondary loop space heating pump state
- Primary loop diverting valve and burner state
- "drainback" system DHW primary loop pump status
- Application software developed in LabVIEW

Power supply: 230 Vac 50 Hz single-phase - 200 VA
(Other voltage and frequency on request)

Dimensions: 42 x 40 x 12 cm

Net weight: 6 kg

REQUIRED

PERSONAL COMPUTER
- NOT INCLUDED -



SUPPLIED WITH

THEORETICAL-EXPERIMENTAL HANDBOOK

