INTEGRATED CIRCUITS

ELECTROINC INDUSTRIES

SOLAR THERMAL TRAINER
IC-RW-SL-I04

2024

1. Overview

The IC-RW-SL-I04 – Solar Thermal Trainer is designed to help students understand the fundamental principles of thermal energy and its applications. It enables hands-on learning in collecting, storing, and utilizing solar thermal energy. Users gain experience in system installation, operation, and measurement of key parameters such as pressure, temperature, and flow rate, making it ideal for renewable energy and thermal system training.

Fig: IC-RW-SL-I04

2. Specification

- Mobile stand made from powder coated galvanize steel.
- Evacuated tube Solar Collector with Temperature Sensor.
- Water storage tank with circulation unit.
- Capacity of water storage tank approx. 40 liters at least.
- Electric Heater as an auxiliary heating system.
- Circulation unit including water pump, shut off valves, dial pressure gauge, expansion vessel tank and connection line.
- Control panel with instrumentation including voltmeter, ampere meter, liquid flow meter, pump controls and temperature display panel meters.
- Data Acquisition Hardware & Software for monitoring and analysis of system performance with USB computer interface.

3. Experiments to be done

1-Familiarization of Solar Thermal Trainer, Evacuated Tube Solar Collector Type.

2-Normal Operation of Solar Thermal Trainer, Evacuated Tube Solar Collector Type.

3-System Performance of Solar Thermal Trainer, Evacuated Tube Solar Collector Type.

4-Effect of Water Flow Rate on Solar Thermal trainer, Evacuated Tube Solar Collector Type.

5-Effect of Angle of Incidence on Solar Thermal Trainer, Evacuated Tube Solar Collector Type.

6-Effect of Illuminances on Solar Thermal Trainer, Evacuated Tube Solar Collector Type.

7-Water Flushing Procedure on Solar Thermal Energy Trainer, Evacuated Tube Collector Type.

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