

BASIC PHOTOVOLTAIC SYSTEM



Experimental capabilities

- Identification of the components of a solar photovoltaic system
- Wiring of the electrical circuit through quick connection
- Measurement of the currents and voltages of the network
- Adjustment of the position of the solar panel to get the best power production
- Effect on the power when an area of the panel is hidden
- Analysis of the efficiency of the system

Operating principle

This unit has been designed to study a small solar power plant.

The bench STL400 produces electrical power from the solar power by the means of photovoltaic panels.

The students should first identify the main components of the installation to understand the technology.

After this they should start up the system, adjust the parameters and produce electrical power. Then they should collect the data (voltage, current) and make the complete analysis of the plant (calculate the power generated, the efficiency of the components...)

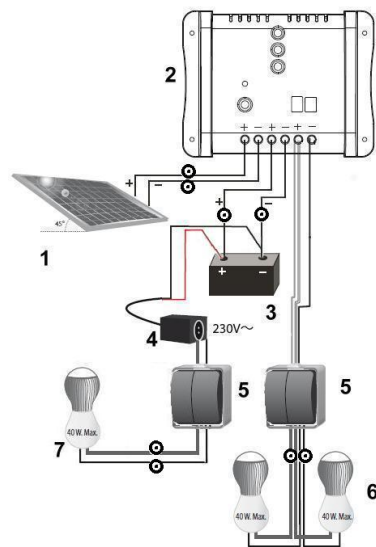
The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.

The manufacture of this equipment complies with the European standard for machinery manufacturing.

This equipment can be used alone or with other compatible equipment from our range (see last section of this document).

Illustrations



Technical details

- Solar panel**
Type: poly crystalline
Maximum power: 60W
Nominal voltage: 17.7VDC
Dimension: 675x800x35mm
- Charge controller**
Nominal voltage: 12VDC
Max load current: 10A
- Battery**
Nominal voltage: 12VDC
Capacity: 55Ah
Dimension: 225x135x210mm
- Voltage transformer (inverter)**
Nominal voltage at the inlet: 12VDC
Nominal voltage at the outlet: 230VAC
Max power: 150W
- Switch**
- Light 12VDC**
- Light 230VAC**

ACCESSORIES INCLUDED :

- all the wires required for the wiring are supplied.
- The system is delivered with a multimeter that comes with a clamp to measure the current (AC&DC).
- A battery loader is also included in case of very low battery.

Services required

- The solar panel should be exposed to the direct sun light
- Dimensions: (LxH mm):
Solar panel : 770x600x650
Main unit : 1050x600x840
- weight (Kg): 60

Documentation

- User's manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine