RENEWABLE ENERGIES

SOLAR POWER PLANT

Modular didactic system for the study of a photovoltaic power system and the operation of a three-phase solar inverter connected to the power grid.

Monitoring and control of the trainer via software.

Complete with connecting cables, experiment manual and software for data acquisition and processing.

DL SPP

TRAINING OBJECTIVES

- Introduction to solar photovoltaic energy.
- Introduction to three-phase PV systems:
  - Main components description
  - Solar Plant installation.
  - Connection to the power grid.
- Three-phase inverter operation:
  - Measuring generated power.
  - MPP (Maximum Power Point) tracking.
  - Grid-tied efficiency.
- Grid operation:
  - Inverter response to voltage variation.
  - Grid fault simulation.

TECHNICAL SPECIFICATIONS

- PV panel arrays emulator for powering the three-phase inverter:
  - Vdc min 200V.
  - Power 600W
  - Short circuit current 10 A
- Solar three-phase inverter:
  - MPP tracking
  - Vdc input voltage 200 ÷ 800V.
  - Power: 1000VA
- Three-phase power circuit breaker with normally closed auxiliary contact.
- Three-phase network monitoring device.
- Bipolar magneto-thermic switch.
- Three-phase residual Current Circuit Breaker.
- Variable resistive load.
- Variable three-phase transformer to simulate different grid conditions.
- Fixed three-phase power distribution module for connection to the mains.
- Data acquisition module to observe the voltage and current waveforms of the 3 phases simultaneously with isolated inputs.