

Photovoltaic - simulators



Model line PV - ES 150 to PV - ES 18.000

For the development and research of photovoltaic system components experiments on photovoltaics generators are absolutely essential.

Since real PV generators depend on temporal and meteorological influence factors they are unsuitable for a continuous laboratory operation with reproducible conditions needed.

That's why for tests and certifeing of different devices PV-simulators are used. They have the one advantage of beeing cheap and easy in construction, even for high demanding relating to the dynamics.



Technical Concept

The PV-Simulator is controlling one or several DC power supplies in a way, that their characteristics simulate those of a PV-generator.

By using the operating panel it is possible to effect „on-the-fly“ changes concerning environmental influences such as solar irradiation [w/m^2] and temperature [$^{\circ}\text{C}$].

For this procedure, two potentiometers are used and the LC-display is monitoring the set values in real-time.

The PV-Simulator is built in a metal housing. The supply voltage of the PV-Simulator is 90 - 250 V AC, 50 - 60 Hz. In the simulation mode, the simulated solar irradiation and temperature are monitored.

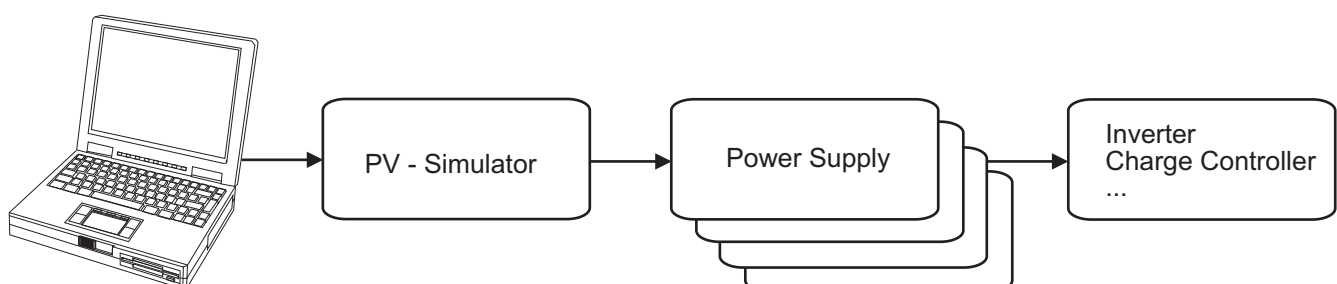
The PV-Simulator is capable of handling a maximal Output voltage from the Power Supply up to 1000 V, the PV-Simulator is programmed with the following parameters (condition of delivery):

off-load voltage (U_0) 240 V, short circuit current (I_K) 8A, UMPP 200 V, IMPP 7,0 A, Temp. coefficient $-1000 \text{ mV}/^{\circ}\text{C}$

By means of a terminal program or with the supplied demo software these values can be adjusted for other panels.

For the input of the voltage and current values an entry of 0.1 V and 0.01 A steps is possible.

Equivalent circuit diagram



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Power Supply

Different power supplies according to the requirements of the range of voltage, current and power are deliverable.



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