PV-KLA

I-V Curve Analyser for Photovoltaics

The I-V curve analyser for photovoltaics PV-KLA can be used on many terms for I-V curve tracing of PV modules and generators in research and industry. Because of its flexibility it can be used for indoor tests as well as for outddor tests. Several devices are in action at german and international producer sites and research institutes. The PV-KLA is directly and comfortably controlled via the com port of a PC by using the software PVK.

Functional Description

For I-V curve tracing of PV generators the device uses a capacitive load. For a wide range of different PV generators the device uses only one capacitor without the need to exchange hardware. Optimization is done only by software. All 4 channels (voltage, current, irradiance and temperature) are sampled at the same time. The maximal sampling rate for one voltage-current-irradiance-temperature value is 66 kHz.

The portable, accu supplied device is suitable for indoor laboratory tests as well as for portable outdoor test. Large memory for every I-V curve, high accuracy and high sampling rates in combination with irradiance and temperature measurement in standard version enable the device to take curves with high quality. Meteorological sensors are sampled and displayed with 1 Hz. With optional specific adaptors the PV-KLA can be expanded for additional usage.

The meteorological adaptor multiplexes the temperature channel, so that 7 additional channels for the use of several meteorological sensors (Pt100 sensors, wind, pyranometer) are free.

The cell adaptor gives the opportunity to measure the I-V curve of single PV cells. It is the ideal partner for the steady-state solar simulator Mini-SuSi produced by our bureau.

The comfortable control software PVK is programmed object orientated (german and english versions are available) and shows in only one measuring window all relevant parameters for the I-V curve, incl. the curve as graphics.

It can be controlled by using the mouse or the keyboard. Long-time measurements with user defined time periods are possible as well as calculation of temperature coefficients for parameters like open-circuit voltage, short-circuit current or power within the maximum-power-point (MPP).

A multiplexer for up to 8 PV modules or generators is also available. It is controlled via the parallel port of the PC.

INGENIEURBÜRO
Mencke & Tegtmeyer
Meßgeräte für die Solartechnik

INGENIEURBÜRO
Mencke & Tegtmeyer

Hohe Linden 8F
D-31789 Hameln
Germany
Tel: +49 (0) 5151 / 40 36 99 - 0
Fax: +49 (0) 51 51 / 40 36 99 - 19
email: info@ib-mut.de
http://www.ib-mut.de

Banking account:
Stadtsparkasse Hameln
(BLZ 254 500 01)
Kto.-Nr. 10 00 38 38

USt-IdNr. DE160212135

PV-KLA

I-V Curve Analyser for Photovoltaics

Technical Data

- Basic accuracy: ±0,2 % fsr
  Meteorological sensors depend of used sensor type
- Voltage ranges: 25, 50, 100, 200 and 400 V
  (1 V option for cell adaptor)
- Current ranges: 4, 8, 16 and 32 A
  (1, 2, and 4 A option for cell adaptor)
- All current and voltage ranges can be combined to each other
- Irradiance range: 1300 W/m²
- Temperature range: 0 to 100 °C
- Maximal sampling rate for one current-voltage data pair: 66 ksamples/s
- Sampling of all channels by using 4 sample and hold devices
- Measuring time for I-V curve: 10 to 500 ms
  (about 6 I-V curves per minute possible)
- Maximal measuring quadruples for I-V curve: 8192
- User interface: controlled directly via PC und Software PVK
- Power supply: 6 V, 5*accu (baby type)
- PC port: RS232 (19,2 kBaud)
- Dimensions / weight (incl. acckus): 30 cm*20 cm*6 cm (DIN A4) / 1.800 g

SI-01TC

Silicon Irradiance Sensor

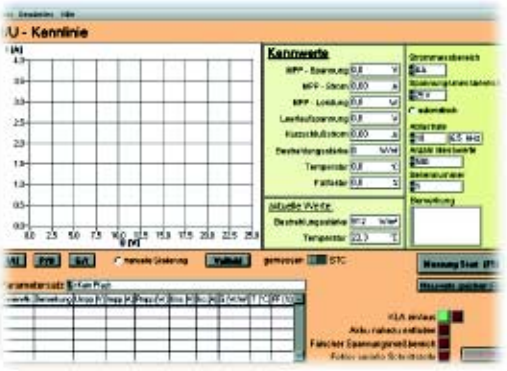
Technical Data

- Silicon irradiance sensor with active temperature compensation
- Calibration value for irradiance: 1 V for 1000 W/m²
- Monocristalline solar cell, embedded in ethylen-vinyl-acetat (EVA) between glass and Tedlar
- Eloxadized aluminium case

EXTEND OF SUPPLY

Standard version

Complete device PV-KLA with following accessories:



- Serial com port (RS232), incl. cable
- Charging unit for charging of accus
- Silicon irradiance sensor Si-01TC with active temperature compensation (incl. 2m sensor cable, uv- and heat resistant)
- Pt100 sensor for measurement of module temperature (incl. 2m cable)
- Control software PVK for Windows
- Manual

OPTIONS

- Meteorological adaptor for 7 additional meteorological sensors such as Pt100 sensors, pyranometer, silicon irradiance sensors, wind, and so on (temperature channel is multiplexed)
- Cell adaptor for I-V curve tracing of PV cells
- Module multiplexer for I-V curve tracing of up to 8 PV modules or generators without changing of cabling
- Personal software, output masks for data sheets on request
- Different current and voltage channels on request

Detailed infos, reference lists and demo versions of software PVK with complete manual on request or under www.ib-mut.de.