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4-Point Sheet Resistivity Measuring Instrument type SD-600

- High precision
- Automatic sensor-contact-control
- Several measurement ranges
- Measuring contacts with hard-gold plating
- Spring-loaded contact tips
- 16-position digital display
- Multiple-input key + jog-dial
- Storage of calibration and correction values
- “Hold”- and auto-“hold”-function
- Serial interface
- Line current or battery power supply
- Compact design, sturdy structure, ease of portability
- Many useful additional features

General

The surface-resistance measurement device SD-600 is designed to measure the electric resistance of conductive layer on insulating materials. The device uses the 4-point measuring technique, which is a well known, reliable and precise method for measuring the exact resistance of a layer. It displays directly, relative to the surface unit (cm^2) the electric resistance of the measured surface. This resistance is directly related to the thickness of the layer, which can be calculated if the specific resistance of the layer’s material is known.
The device excels by its high sensitivity and a weak measuring current. Thus no damages can occur to the metal layer being measured.
The device includes an **automatic contact control** feature. It reduces the risk of erroneous measurements because of improper placement of the sensor.

A storage feature allows a large number of measurement results to be recorded. You may evaluate the recorded results at once or later. It is possible to determine maximum and minimum values as well as an average and the standard deviation.
You can easily change or correct the zero-point setting (with calibration box type E-500) and the calibration. You also may enter corrections for sensor settings (all important features are password-protected!).

The last measurement result stays on the dispaly even if the probe is taken off the specimen. (auto-hold function).
Seven measurement ranges provide a broad range of resistance measurements.
The device’s serial interface allows you to have the measurement results printed on a printer or have them transmitted to a computer manually or automatically after each contact with the sample.
The device is powered by its rechargeable batteries and line current.
The device comes in a handsome desk-top casing.
Its high resolution and precision combined with its light-weight construction, a 2x16-position LCD and its ease of use, makes the device suitable for use at laboratory as well as on site, in research and development and also in a service and test environment.

Technical Description

You perform measurements by touching the particular layer with the tip of the **probe**. There are four electrodes mounted into the edge of the probe. The two on the outside supply the measurement current while the inner two sense the resulting voltage drop. The electrical resistance ensue from these data.
The probe’s design (hard-gold-plated and spring-loaded contacts tips) ensures excellent contact with the metallization.
We provide different kind of probes. The standard probe has a tip-distance of 2.5 mm and slightly

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rounded tips (SDKR-25). The probe SDKR-13 has a tip-distance of 1.3 mm and it is designed for measuring small surfaces (structured or segmented foil, etc.). These probes are suitable for normal metal surfaces.
In the capacity of its design the probes enable good contact with the surface. The red LED next to the text-display indicates the **correct contact** with the surface. If the probe was not placed correctly onto the sample, the display will show "##" due to the too high crossing-resistance. In this case the measured value is invalid.
The measured values will be displayed on a 2x16-position **LCD**. The dimension of the LCD allows to display the determined value, function and error-messages at once, and thus makes it easy to use the device.
You can "**freeze**" the display, i.e. hold the last measurement result ("Hold"-function). Or simply activate the **auto-hold**: this will make the device to hold (or print) the measured value after a preset time.
The switchable measuring ranges makes it possible to carry out accurate measurements in low-ohm as well as in high-ohm ranges.

The calibration of the device is valid for infinite-sized surfaces. While measuring smaller areas the measured value would be false. Using a 2.5 mm probe (standard probe) on a 40x40 mm surface the error would be about 3%. Measuring a 25 mm width strip the error would be about 7%. The device offers the possibility to enter the width and the length of the sample in mm and it will automatically calculate the correction factor. Thus the correct value will be displayed.

A **zero-point calibration** can be performed using the calibration box type E-500.

The device has **9 keys + 1 jog-dial**.

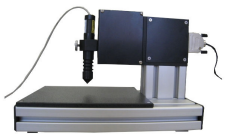
The device is equipped with two **limit-control circuits**. The user may set limits (upper and/or lower limits) which will be controlled automatically. Whenever a limit is exceeded, a contact-controlled signal is generated. By their conditions, these contacts indicate whether the current measurement is "Lo" (too low) "ok" (within the set limits) or "Hi" (too high). These signals can be used for the control of an alarm, of indicator lamps, of a sorting equipment, etc. The findings by the limit-control circuits are indicated by symbols on the display.

The circuitry of the device uses highly integrated elements of the CMOS technology. It comes in a handsome **metal casing**.

Technical Specification

Measuring ranges:	Measuring current:
1: 0...0,2 Ω	100 mA
2: 0...2 Ω	10 mA
3: 0...20 Ω	1 mA
4: 0...200 Ω	100 µA
5: 0...2 KΩ	50 µA
6: 0...20 KΩ	5 µA
7: 0...200 KΩ	5 µA
Measuring method:	4-point method
Maximum error of the device:	
Without probe:	0,2%
With probe:	3% (typically 2%)
Calibrating the device can increase accuracy. The give accuracy refers to 23°C ±2°C environmental temperature.	
Temp.-coefficient:	50 pp/K within 0...45°C
Memory:	min/max/avg of 1000 measurements
Meas.-speed:	2/sec.
Serial interface:	V.24-compatible (RS-232)
Environmental conditions:	
Operating temp.:	+5...45°C
Storage temp.:	-20...+75°C
Rel. humidity:	max. 80%, without dewing
Power supply:	100-240V (+10, -15%), 50/60Hz or internal batteries (chargeable)
Power consumption:	about 8VA
Battery live:	4-6 hours
Display:	2x16 text-LCD, 8 mm characters
Weight:	about 2,0 Kp
Casing:	portable metal casing
Dimensions:	300 x 290 x 120 mm

Optional accessories



- Probe type SDKR-25
- Probe type SDKR-13
- Calibration box type E-500
- Measuring Probe Positioner MPP-1
- Data cable for RS-232 (PC connection)

We also develop and build **non-contact** measuring devices for **on-online** (in-situ) applications or special measuring equipment for structured capacitor foil. Please contact our sales department.

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