Micro Ohmmeter RMO600A

- Lightweight – only 8 kg
- Powerful 5 A – 600 A DC
- High output voltage 5,7 V @600A
- Measuring range 0 – 999,9 mΩ
- Resolution to 0,1 µΩ
- Typical accuracy 0,1 %
- Rmax function
- Mechanical protection IP43

Description

RMO600A is a Micro Ohmmeter based on a state of the art technology, using the most advanced switch mode technique available today. RMO600A generates a true DC ripple-free current with automatically regulated test ramps. During a test the RMO600A ramps with increasing current before measuring and decreasing current after the measurement. This eliminates magnetic transients. After the test current has been set, the automatic test procedure is started by pressing the *START*-button.

The RMO600A instrument can store internally up to 500 measurements. All measurements are time and date stamped. Using the DV-Win software a test can be performed from a user's PC, and the results can be obtained directly on the PC. Communication between the RMO600A and a PC is through an USB (as standard) or an RS232 cable (as an option).

Using the DV-Win the result can be arranged as an Excel spread-sheet which can be later shown as a diagram and printed for a report.

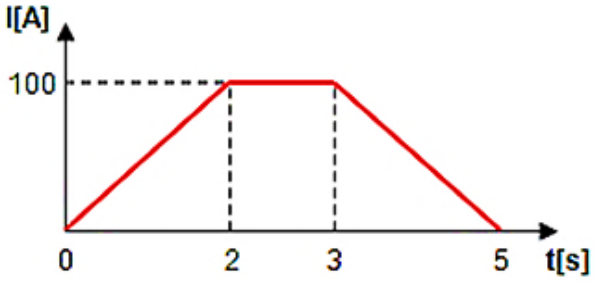
The set is equipped with a thermal and an overcurrent protection. The RMO600A has a very high ability to cancel electrostatic and electro-magnetic interference in HV electric fields. It is achieved by very efficient filtration. The filtration is made utilizing a proprietary hardware and software.

The RMO600A instrument has two separate test modes:

- SINGLE mode
- CONTIN mode

Single Test

The RMO600A instrument generates a filtered (true) DC current and output it in an automatically regulated current ramp. By sloping the current up and down, magnetic transients are virtually eliminated. Below is an example of single test ramp for the 100 A current.



Continuous Test

RMO600A can generate DC current continuously using the **Contin** menu. In this menu the current can be chosen the same way like in the **Single** menu, but the duration of the test can be preset.

The RMO600A current output is rated at 600 A for 20 s, at 500 A for 30 seconds, at 300 A for 90 seconds and 200 A for 2,5 minutes at 25 °C ambient temperature.

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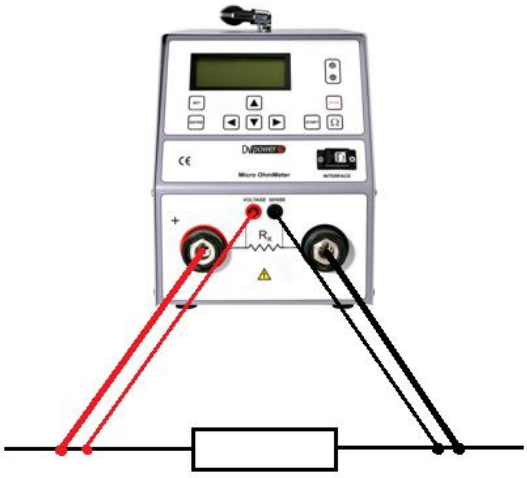
Application

Typical application is measuring resistance of non-inductive test objects:

- High, middle and low voltage circuit breakers
- High, middle and low voltage disconnecting switches
- High-current bus bar joints
- Cable splices
- Welding joints

Connecting the Test Object to RMO600A

With RMO600A turned off, connect RMO600A to the test object (RX) in such a way that the measuring cables from the "Voltage Sense" sockets are attached as close as possible to R_X, and in between the current feeding cables. That way, a resistance of both cables and clamps is almost completely excluded from the resistance measurement.



Test object

Benefits and features

The RMO600A device has very stable and powerful voltage source used for current injecting. A very high voltage output enables wide resistance measurement range even when very high currents are used. In addition, this enables use of thinner/longer test cables, depending of the customer requirement.
The full output is available from the RMO600A at 230 V Mains Supply. A reduced output is available from lower supply voltages.

Supply Voltage	Output Current	Full Load Voltage
230 V	600 A DC smoothed	5,70 V DC
	300 A DC smoothed	5,90 V DC
115 V	600 A DC smoothed	3,70 V DC
	300 A DC smoothed	4,70 V DC

The output current is filtered and has a ripple of less than 1 %.

The instrument has a very high typical accuracy ± (0,1 % rdg + 0,1 % FS), with the best resolution of 0,1 µΩ.
Several advanced features are available as standard/optional accessories:

- Rmax feature *(pass/fail criteria, enabled with the device and the DV-Win software)*
- Built-in thermal printer *(optional accessory)*
- USB / RS232 communication port

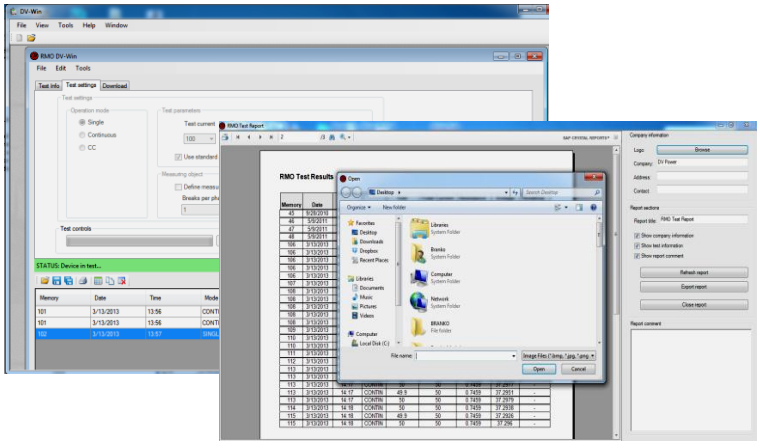
DV-Win software

DV-Win software provides acquisition and analysis of the test results, as well as control of all the RMO functions from a PC. The DV-Win also provides several advanced features as a supplement to multiple functions of RMO devices. Testing in Continuous mode is upgraded with a sample time feature which allows user to record test results in specific time intervals set in seconds.

After performed measurements results can be saved in a various formats and test report can be generated and saved or printed. Result can also be downloaded from the device to the PC by use of several different search filters.
For the RMO form of DV-Win software there is Help menu available, with detailed instructions and explanations of all functions and features.

DV-Win Main Features

- Full control of the device in test
- Test reports *available in several formats
- Several filters for results download to PC
- Test plans
- Sampling time feature for CONTIN mode



Technical data

Mains power supply

- Connection according to IEC/EN60320-1; C320
- Mains supply: 90 V – 264 V AC
- Frequency: 50 / 60 Hz
- Input power: 4 560 VA (230 V AC);
  4 040 VA (115 V AC);
- Fuse: 20 A / 250 V, type F

Output data

- Test current: 5 A – 600 A DC in 1 A steps
- Max load interval (at 600 A): 20 s
- Full Load Voltage (at 600 A): 5,7 V
  *At 230 V of supply voltage

Measurement

- Resistance range: 0,1 µΩ – 999,9 mΩ
- Resolution

0,1 µΩ - 999,9 µΩ	0,1 µΩ
1,000 mΩ - 9,999 mΩ	1 µΩ
10,00 mΩ - 99,99 mΩ	10 µΩ
100,0 mΩ - 999,9 mΩ	0,1 mΩ

- Typical accuracy:

Voltage:	± 0,1 % ± 0,1 mV
Current:	± 0,1 % ± 0,1 A
Resistance:	± (0,1 % rdg + 0,1 % FS)

Display

- LCD screen 20 characters by 4 lines;
- LCD display with backlight, visible in bright sunlight.

Interface

- RMO600A is equipped with an USB port
- optional: RS232 (connection to an external computer)

Test Result Storage

- RMO600A can store up to 500 measurements

Environmental conditions

- Operating temperature:
  -10 ºC - +55 ºC / +14 ºF - +131 ºF
- Storage & transportation:
  -40 ºC - +70 ºC / -40 ºF - +158 ºF
- Humidity 5 % - 95 % relative humidity

Environmental protection

- Ingress protection rating: IP43

Printer (optional)

- Thermal printer
- Paper width 80 mm / 3.2 in

Dimensions and weight

- Dimensions (W x H x D)

  198 mm x 255 mm x 380 mm
  7.8 in x 10 in x 15 in

- Weight: 8 kg / 17.5 lbs.

Applicable Standards

- Installation/overvoltage: category II
- Pollution: degree 2
- Safety: LVD 1006/95/EC (CE Conform)
  EN 61010-1
- EMC: Directive 1004/108/EC (CE Conform)
  Standard EN 61326-1:1006
- CAN/CSA-C22.2 No.61010-1, 2nd edition, including Amendment 1

Warranty

- 3 Years

All specifications herein are valid at ambient temperature of + 25 °C and recommended accessories.
Specifications are subject to change without notice.

Voltage sense cables

Current cables

Extension cable

Test shunt

Cable bag

Transport case

* Besides battery clamps, current cables are also available with C clamps or with alligator clamps (as option)
** Besides semi-isolated alligator (A1) clamps, sense cables are also available with isolated alligator (A2) clamps or with TTA clamps (as option)

Order info

Instrument with included accessories	Article No
Micro Ohmmeter RMO600A	RMO600A-N-00
DV-Win PC software including USB cable	
Mains power cable	
Ground (PE) cable	

Recommended accessories	Article No
Current cables 2 x 5 m (16.4 ft.), 50 mm^2 (1/0 AWG) with battery clips	C2-05-50MVB3
Sense cables 2 x 5 m (16.4 ft.) with alligator clips	S2-05-02BPA1
Cable bag	CABLE-BAG-00
Device bag	DEVIC-BAG-00

Optional accessories	Article No
Transport case	HARD-CASE-ME
Cable plastic case – medium size	CABLE-CAS-02
Test shunt 100 µΩ (600 A/60 mV)	SHUNT-600-MK
Current cables 2 x 10 m (32.8 ft.), 50 mm² (1/0 AWG) with battery clips	C2-10-50VMB3
Current cables 2 x 15 m (49.2 ft.), 70 mm² (2/0 AWG) with battery clips	C2-15-70VMB3
Current cables 2 x 15 m (49.2 ft.), 95 mm² (3/0 AWG) with battery clips	C2-15-95VMB3
Current extension cable 2 x 10 m (32.8 ft.), 70 mm² (2/0 AWG)	E2-10-70VMVF
Sense cables, extension 2 x 10 m (32.8 ft.)	E2-10-02BPBP
Sense cables 2 x 10 m (32.8 ft.) with alligator clips	S2-10-02BPA1
Sense cables 2 x 15 m (49.2 ft.) with alligator clips	S2-15-02BPA1
Built-in thermal printer	PRINT-080-00

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