

MJÖLNER 600

Microhmmeter



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The MJÖLNER™600 is designed to measure the resistance of circuit breaker contacts, bus-bar joints, contact elements in bus-bars and other high-current links. The product has been designed with safety, ease of use and versatility in mind.

The microhmmeter conducts true DC ripple free current and can be used anywhere to measure a low resistance value with high accuracy. With MJÖLNER 600 it is possible to make measurements according to the DualGround™ method. This means that the test object will be grounded on both sides throughout the test giving a safer, faster and easier workflow.

Choose the MJÖLNER 600 with excessive power resources for demanding applications, superior measurement accuracy and when 300 Amp continuous is required.

The lightweight and rugged suitcase design makes MJÖLNER 600 an excellent choice when you need a portable solution in the field. When the case is closed, the product can withstand the impact of water, dust or sand – it even floats.

Two optional accessories are; a remote control and the PC software MJÖLNER Win that is compatible with IPS–CBEX and have export functions for tables to Microsoft® Excel®.

Application examples

IMPORTANT

Read the User's manual before using the instrument.

Test a circuit breaker using DualGround testing

1. Make certain the line is de-energized on both sides of the circuit breaker.
2. Ground the breaker on both side and make certain it is closed.
3. Ground MJÖLNER 600.
4. Connect the current and sensing cables.
5. Apply an external current clamp to one of the grounding cables and connect the clamp outputs to MJÖLNER 600.
6. Set the test current.
7. In the "Setup Menu", set the current clamp to "On" and key in the proper sensitivity of the current clamp you are using.
8. Press the <START/STOP> key.
9. The result is shown after some seconds.
The result is saved, you can make a printout and/or run a new test

Measuring resistance at bus-bar joints

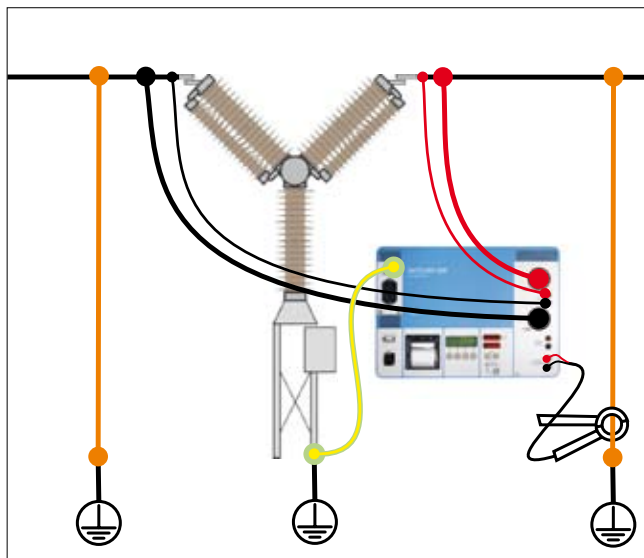
1. Make certain the line is de-energized on both sides of the bus-bar.
 2. Ground the bus-bar on both sides.
 3. Ground MJÖLNER 600.
 4. Connect the current cables Do not connect the sensing cables.
 5. Select "Continuous Mode" in the "Setup Menu".
 6. Set the test current.
 7. In the "Setup Menu", set the current clamp to "On" and key in the proper sensitivity of the current clamp you are using.
 8. Press the <START/STOP> key.
 9. Using an external voltmeter, measure the voltage drop (voltage) across each contact element within every section of the bus-bar being tested.
 10. Stop the measurement by pressing <START/STOP> or <ESC> keys.
 11. Calculate the actual resistance.
Example: If the voltage drop is 0.0067 V at a current of 100 A, the resistance will be $0.0067/100 \Omega$, i.e. $67 \mu\Omega$.
- Note:** The method above can be automated using a TM1800 for measuring and storing the results. It is of course applicable for all resistance measuring on multiple contacts e.g. circuit breaker contacts.

Features

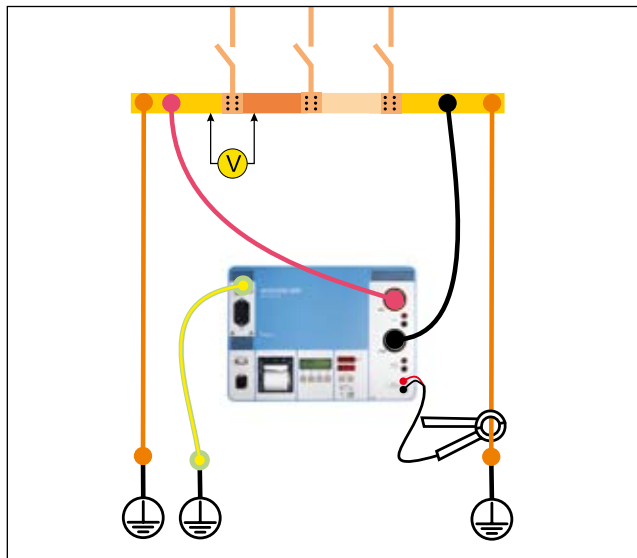
Fully automatic testing	Micro processor controlled
Database	CEBEX/IPS integration
Rugged and portable	Lightweight suitcase design withstands the impact of water, dust or sand
Safe test	DualGround Remote control



Equipment and methods that supports DualGround™ testing are associated with the DualGround symbol. This symbol certifies the use of groundbreaking technology and methods that enables a safe, fast and easy workflow with both sides grounded throughout the test.



You can make tests with both sides of the test object grounded, an additional safety feature.



Using an external voltmeter, measure the voltage drop (voltage) across each contact element within every section of the bus-bar being tested.

- 1 Grounding terminal
- 2 Connection for mains voltage
- 3 Switch for mains voltage
- 4 Serial interface for PC (RS232)
- 5 Remote control connector
- 6 Printer
- 7 LCD Display
- 8 Keys to control the menu functions
- 9 LED displays indicating the value of R and I
- 10 Adjustment keys to set the measuring current and all menu values
- 11 Status LED's indicating the actual measuring status
- 12 Error LED when the adjusted current could not be reached
- 13 Start/Stop key with status LED
- 14 DC+ current output
- 15 Sensing terminals
- 16 DC- current output
- 17 Shunt output
- 18 Clamp sense input



Specifications MJÖLNER 600

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

Environment	
Application field	For use in high-voltage substations and industrial environments.
Temperature	
Operation	-20 to +50°C (-4°F to +122°F)
Storage	-40°C to +70°C (-40°F to +158°F)
Relative humidity %RH	5%-95%, non condensing
CE-marking	
LVD	EN 61010-1:2001
EMC	EN 61326:1997 + A1:1998 + A2:2001 + A3:2003

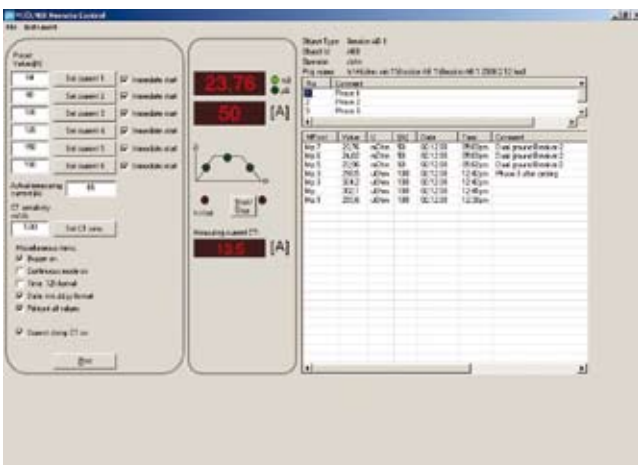
General	
Mains voltage	100- 120, 200-240 V AC, 50 / 60 Hz
Power consumption	(max) 39 A at 100 V, 18 A at 230 V
Protection	Thermal fuses, Software
Dimensions	486 x 392 x 192 mm (19" x 15.4" x 7.6")
Weight	13.8 kg (30.4 lbs)

Measurement section	
Measuring range	0 – 999.9 mΩ
Resolution	0.1 μΩ below 1.0 mΩ 1 μΩ below 10 mΩ 10 μΩ below 100 mΩ 100 μΩ below 1000 mΩ
Inaccuracy, 50 – 600 A, ta 10 - 40°C, R < 1 mΩ	Typ ±0.3 μΩ, Max. ±2 μΩ

Outputs	
DC+ / COM	
Range	5 – 600 A DC (steps of 1 A)
Output voltage (max)	5.25 V DC at 600 A

OUTPUT 100 μV/A	
Shunt output	From internal shunt 60 mV at 600 A
Inaccuracy	±1%

Inputs	
SENSE	Max. 20 V between terminals and to protective earth (ground).
INPUT DC current clamp	Max. 20 V between terminals and to protective earth (ground).
Input sensitivity	Adjustable 0.1 – 20 mV/A
Input impedance	>1 MΩ



MJÖLNER Win



Remote control

Optional accessories

MJÖLNER Win

The Windows program makes it easy to manage / save all test results in a simple way. All information, meta-data of the test object e.g. a circuit breaker and the test results are stored together and they can easily be transferred to Microsoft® Excel for further analysis.

Remote control

Many times, you place the test equipment on the ground while the cables are connected high up on a circuit breaker. In these situations, it can save a lot of time using a remote control during the test. The remote control has most of the functionality in the MJÖLNER 600 such as starting and stopping, setting the test current and read out the test values.

Ordering information

	Art.No.
MJÖLNER 600	
Incl. Std. cable set 3 m, (current cables 2 x 3 m, 35 mm ² and sensing cables 2 x 3 m) Ground cable	BB-59090
Incl. Std. cable set 5 m, (current cables 2 x 5 m, 35 mm ² and sensing cables 2 x 5 m) Ground cable	BB-59091
Incl. Std. cable set 3 m, (current cables 2 x 3 m, 35 mm ² and sensing cables 2 x 3 m) Ground cable and DC Current clamp (200 A/20 mV)	BB-59092

Optional accessories

MJÖLNER Win Windows® software	BD-8010X
Remote control	BD-90010
Temperature probe	BD-90012
Thermal paper roll (for printer)	GC-00050
Extension cable set 5 m (current cables 2 x 5 m, 35 mm ² and sensing cables 2 x 8 m)	GA-03206
Extension cable set 10 m (current cables 2 x 10 m, 35 mm ² and sensing cables 2 x 13 m)	GA-03208
Calibration kit 200 A/20 mV shunt and instruction	BD-90022
DualGround kit DC Current clamp 200 A (incl. cables)	XA-12792

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