

MJÖLNER 600

Micro-ohmmeter

Megger[®]



- Fully automatic testing – micro processor controlled
- Safe test – DualGround™ and remote control
- Remote control from mobile app
- True DC – ripple free current
- Lightweight suitcase – withstands the impact of water, dust or sand
- 5" Touch screen
- PC interface connection

DESCRIPTION

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 micro-ohmmeter 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.

Optional accessories are a remote control and the PC software MJÖLNER Win with export functions for tables to Microsoft® Excel®

APPLICATIONS

MJÖLNER 600 test system is designed to serve a number of applications. The most common are contact resistance measurements of low-, medium- and high-voltage breakers and also at bus-bar joints, and other high current links.

The contact resistance measurements concerning breaker testing are particularly called for in the following standards: IEEE C37.09-2018 and IEC 62271-1:2017.

If the contact resistance is too high this will lead to power loss and temperature rise, which often leads to serious trouble. To avoid such problems, it is necessary to check the resistance at regular intervals.

The following table demonstrates how important low resistance is at high currents:

Current	Contact resistance	Power loss
10 kA	1 mΩ	100 kW
10 kA	0.1 mΩ	10 kW
1 kA	1 mΩ	1 kW
1 kA	0.1 mΩ	100 W

At 10 kA a contact with the resistance 0.1 mΩ gives a power loss of 10 kW. This power loss in one single point will definitely confer a temperature rise, which may result in overheating and possibly premature failure.

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INSTRUMENT OVERVIEW

1. Grounding terminal
2. Connection for mains voltage
3. Switch for mains voltage
4. TEMP. SENSOR
This interface is for connection of a temperature probe for temperature compensating.
5. INTERFACE
For communication with PC and MJÖLNER Win.
6. DATALOGGER
Port to connect a USB stick for datalogging. Results can be viewed with Excel.
7. REMOTE
Remote control connector
The remote controls current value, start /stop of measurement and print out function.
8. 5" Touch display
9. Start/Stop key with status LED
10. Increment/decrement keys for current and values
11. DC+ current output
12. Sensing terminals
13. DC- current output
14. Shunt output
15. Clamp sense input



Suitcase shape

The unit comes close to the body thus making the unit easier to carry. Rugged plastic housing, in most cases no need for an additional heavy transport case.



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SPECIFICATIONS

Specifications are valid at nominal input voltage. Specifications are subject to change without notice.

Environment

Application field The instrument is intended for use in high-voltage substations and industrial environments.

Temperature

Operating -20 °C to +50 °C (-4 °F to +122 °F)

Storage & transport -40 °C to +70°C (-40 °F to +158 °F)

Humidity 5 % – 95 % RH, non-condensing

CE-marking

LVD RL2014-35-EU, EN 61010-1:2020

EMC RL2014-30-EU, EN 61326:2018
EN61000-6-1/2/3/4:2019,

RoHS 2011/65/EU

General

Mains voltage 100 - 120 / 200 - 240 AC, 50/60 Hz

Input current (max) 39 A at 100 V, 18 A at 230 V (3 sec)

Protection Fuses (200 mA and 400 mA)
Thermal fuse, Software
Shut off temperature: 70°C (158°F)
internal temperature

Encapsulation

opened lid IP40

closed lid IP63

Dimensions L 486 x W 392 x H 192 mm (19" x15" x 7.5")

Weight 14.1 kg (31 lbs)
22 kg (48.5 lbs)) incl. cables and soft case

Display 5" IPS touch screen
Resolution 800x480

Available languages English, Deutsch, Français, Español, Svenska, Czech

Measurement section

Range 0 – 999.9 mΩ

Resolution 0.01 μΩ below 100 μΩ
0.1 μΩ below 1.0 mΩ
1 μΩ below 10 mΩ
10 μΩ below 100 mΩ
100 μΩ below 1000 mΩ

Inaccuracy	Typ.	Max.
600 A, Ta 25 °C, R < 100 μΩ	± 0.1 μΩ	± 0.4 μΩ
600 A, Ta 25 °C, R < 20 μΩ	± 0.03 μΩ	± 0.2 μΩ
20 A, Ta 25 °C, R < 20 μΩ	± 0.05 μΩ	± 0.2 μΩ
50 - 600 A, Ta 0 - 40 °C, R < 1 mΩ	± 0.3 μΩ	± 2 μΩ
50 - 600 A, Ta 0 - 50 °C, R < 1 mΩ	± 0.7 μΩ	± 3 μΩ
50 - 600 A, Ta -20 - 50 °C, R < 1 mΩ	± 1.1 μΩ	± 4 μΩ
600 A, Ta 10 - 40 °C, 1 mΩ < R < 10 mΩ	± 6 μΩ	± 50 μΩ
50 A, Ta 10 - 40 °C, 10 mΩ < R < 100 mΩ	± 80 μΩ	± 500 μΩ
5 A, Ta 10 - 40 °C, 100 mΩ < R < 1000 mΩ	± 1 mΩ	± 4 mΩ

Ta: Ambient Temperature

Current shunt

600 A, 60 mV

Sense ranges

0-2 mV, 0-20 mV, 0-200 mV, 0-5 V

Outputs

DC+ / COM

Range

5 – 605 A DC (steps of 1 A), 5 adjustable preset current values.

Max. output voltage

5.0 V at 605 A

Max. ripple

80 mV_{pp}, 28.3 mV_{rms}
at 0 - 50°C (+32°F to +122°F)

Max load capacity*

300 A (max) continuous

*) At 25 °C (77°F) ambient temperature

Current will start to derate if the inside temperature reaches 50°C.

SHUNT 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)

Max. 20 V between terminals and to protective earth(ground)

INPUT

DC current clamp

Input voltage

Max ±1 V

Input sensitivity

Adjustable 0.1 – 20 mV/A

Input impedance

>1 MΩ

Data interface

USB comport or RS232 Remote, various measuring protocols may be set (Modbus RTU, Mjölner Win, data output, data control). For full access software license is needed.

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OPTIONAL ACCESSORIES

Remote control



BD-90010

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.

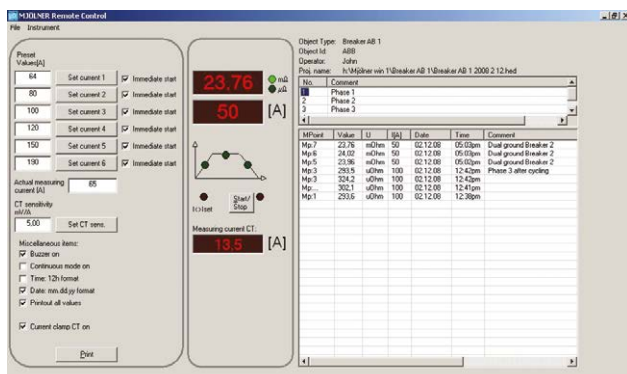
Temperature probe



BD-90012

The temperature probe is used for temperature compensation of conductors (copper and other metals).

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.

Extension cables



Extension cable sets, 5 m and 10 m.
5 m set, GA-03209
10 m set, GA-03210

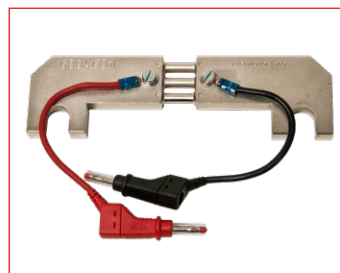
DualGround kit



XA-12992

Dual Ground kit, XA-12990(max 200A), XA-12992(max 1000A)
Max conductor size 50mm diameter(2"). Test cables 5m.
Note: XA-12992 included in ordering art no. BB-59093

Calibration shunt and XLR Bluetooth dongle



Calibration shunt,
600 A/60 mV (BB-90020)



XLR Bluetooth dongle
(BD-90011)

INCLUDED ACCESSORIES



Ground cable GA-00200



Current cables GA-03555



Sensing cables Red KG-00522



Sensing cables Black KG-00520



Lead and accessory bag 2012-180

ORDERING INFORMATION

Item	Cat. No.
MJÖLNER 600	
Incl. Cable set, current cables 2 x 5 m (16 ft), 35 mm ² (GA-03555) Sensing cables 2 x 5 m (KG-00520, KG-00522) Ground cable, 5 m (16 ft) 2.5 mm ² (GA-00200) Cable bag (2012-180)	BB-59091
Incl. Cable set, current cables 2 x 5 m (16 ft), 35 mm ² (GA-03555) Sensing cables 2 x 5 m (KG-00520, KG-00522) Ground cable, 5 m (16 ft) 2.5 mm ² (GA-00200) Cable bag (2012-180) Dual Ground kit (XA-12992)	BB-59093
Optional accessories	
MJÖLNER Win	
Including XLR Bluetooth dongle (BD-90011) MJÖLNER Win can be downloaded from: "www.megger.com", search for MJÖLNER 600	BD-8010X
Remote control	
With connection cable, 5 m (16 ft)	BD-90010
XLR Bluetooth dongle	BD-90011
Temperature probe	BD-90012
Extension cable set 5 m	
Current cables 2 x 5 m, 35 mm ² and sensing cables 2 x 10 m	GA-03209
Extension cable set 10 m	
Current cables 2 x 10 m, 35 mm ² and sensing cables 2 x 15 m	GA-03210
Calibration shunt	
600 A/60 mV shunt	BB-90020
DualGround kit	
DC Current clamp 200 A and test cables 2 x 5 m (16 ft)	XA-12992
DC Current clamp 1000 A and test cables 2 x 5 m (16 ft)	XA-12990

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MJÖLNER-600_DS_en_V13a

ZI-BB01E Doc. BB0383ME 2022
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