MOM690
Micro-ohmmeter

Megger

- **Easy-to-use**
- **Automatic range setting**
- **800 A output current**

DESCRIPTION

Measuring resistance is an important part of maintaining high-voltage breakers and disconnecting switches. Instruments that measure the resistance of high-current contacts and other transmission elements have been included in the Megger line of products for many years.

The built-in software enables you to carry out an individual test or an entire series of tests and store the results.

With the optional MOMWin™ software you can also export the test results to a PC for further analysis and reporting. Ranges are set automatically, resistances are measured continuously and test results can be automatically captured at a preset test current. What could be simpler?

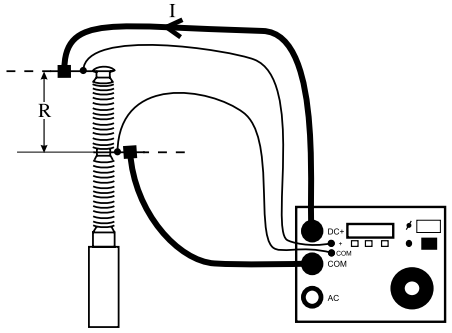
After testing a breaker with a CT mounted in its current circuit, e.g. dead tank and GIS breakers, some standards recommended that the CT is demagnetized. This troublesome task can be accomplished quickly and easily thanks to the MOM690's AC output. The AC output can also be used as a general multi-purpose current source in different applications.

APPLICATION EXAMPLE

IMPORTANT!
Read the User's manual before using the instrument.

Measuring the resistance of a breaker

1. Make certain the line is de-energized on both sides of the breaker.
2. Ground the breaker on one side and make certain it is closed.
3. Ground the micro-ohmmeter.
4. Make certain the micro-ohmmeter's ON/OFF switch is OFF while making connections.
5. Connect the current cables to the DC+ and COM terminals and the sensing cables to the sensing inputs to both sides of the breaker, making sure that the polarities match properly. IMPORTANT: The sensing cables must be connected inside the current cables. Otherwise the test data will be incorrect. See Fig.
6. Switch on the MOM690.
7. Select "AUTO" or "MAN" with the <FUNC>-button.
8. Set output current to zero to start the measurement.
9. Increase the current to the desired value (600 A for example).
10. Read the resistance value.



Measuring the resistance of a breaker

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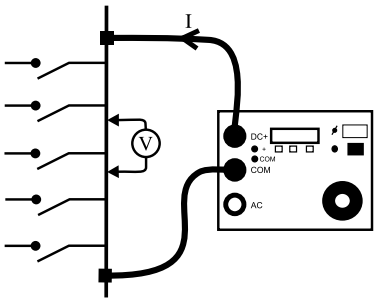
Measuring resistance at busbar joints

1. Make certain the line is de-energized and the test object is grounded.
2. Ground the micro-ohmmeter.
3. Make certain the micro-ohmmeter's ON/OFF switch is OFF while making connections.
4. Connect the micro-ohmmeter's current cables to the test object. Do not connect the sensing cables. Measurement will be done manually using an external portable voltmeter.
5. Switch on the MOM690.
6. Select "MAN" with the <FUNC>-button.
7. Set output current to zero to start the measurement.
8. Increase the current to the desired value (100 A for example).
9. Using an external voltmeter, measure the voltage drop across each contact element within every section of the busbar being tested. The voltmeter must be set to DC.
10. 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 Ω, i.e. 67 μΩ.



Measuring resistance at busbar joints

PANEL DESCRIPTION

1. DC current output
2. Display
3. USB service port
4. Grounding terminal
5. Miniature circuit breaker for mains
6. Connection for mains voltage
7. Switch for mains voltage
8. Common output terminal
9. AC current output
10. Voltage measurement input
11. Setting selector
12. Function selector
13. Interrupts current and toggles the display between resistance and voltage
14. Variable transformer

Information about current generation or memory location.

Value of the generated current.

Indicates whether the current is above (<) or below (>) a preselected value.

Selected test current for "**Auto**"/"**DC Off**". Scroll using the <▲>- button.

Selected function. Scroll using the <**FUNC**>-button.

Shows the measured resistance or voltage value. Toggle by pressing the <**Ω**>-button.

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SPECIFICATIONS

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	The instrument is intended for use in high-voltage substations and industrial environments.
Temperature	
Operating	0°C to +50°C (32°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	2014/35/EU
EMC	2014/30/EU
RoHS	2011/65/EU

General

Mains voltage	115/230 V AC, 50/60 Hz
Power consumption (max)	115 V, 5980 VA (at 600 A output) 230 V, 9660 VA
Protection	Miniature circuit breaker, thermal fuse, software
Dimensions	
Instrument	350 x 270 x 220 mm (13.8" x 10.6" x 8.7")
Transport case	610 x 290 x 360 mm (24.0" x 11.4" x 14.2")
Weight, 115 V model	24 kg (52.9 lbs) 38.9 kg (85.7 lbs) with accessories and transport case
Weight, 230 V model	23.7 kg (52.2 lbs) 38.6 kg (85.1 lbs) with accessories and transport case
Available languages	English, French, German, Spanish, Swedish

Measurement section

Ammeter

Range	0 – 800 A
Resolution	1 A
Inaccuracy	100 – 800 A, ±1% of reading + 1 digit 50 – 99 A, ±(2% of reading + 2 digits) 0 – 49 A, not specified

Resistance

Range	0 – 200 mΩ, > 200 mΩ not specified
Resolution	1 µΩ
Inaccuracy	100 – 800 A, ±1% of reading + 1 digit 50 – 99 A, ±(2% of reading + 2 digits) 0 – 49 A, not specified

Max. load resistance / current, 115 V model

Cable set	*Standard*	*Standard + Ext. 1*	*Standard + Ext. 2*	*2 x 15 m 95 mm²*
At 300 A	10 mΩ	6 mΩ	3 mΩ	10 mΩ
Max. current	575 A	420 A	360 A	540 A

Max. load resistance / current, 230 V model

Cable set	*Standard*	*Stadard + Ext. 1*	*Stadard + Ext. 2*	*2 x 15 m 95 mm²*
At 300 A	18 mΩ	14 mΩ	11 mΩ	18 mΩ
At 600 A	3.0 mΩ			1.8 mΩ
Max. current	750 A	570 A	480 A	690 A

Output DC (CAT I), 115 V model

Current (A)	*Voltage (V)*	*Max. load time*	*Input current (A)*
0	7.3	–	0.8
50	6.9	30 min.	
100	6.4	10 min.	10
200	5.5	60 s	19
300	4.8	35 s	
400	3.9	20 s	38
500	3.0	10 s	
575[1)]	2.5	2 s	
600	2.2	0.5 s	52
700	1.5	0.2 s	
800[2)]	0.9	–	

1) Maximum current with standard cables 2 x 5 m 50 mm²
2) At 800 A and above, instant shut off

Note: The above figures shows maximum load time from cold state 25°C. They are not valid for repeated tests

Output AC (CAT I), 115 V model

Current (A)	*Voltage (V)*	*Max. load time*	*Rest time*
0	8.7	Cont.	–
660	3.5	2 s	4 min.

Note: The DC and AC outputs must not be loaded at the same time.

Output DC (CAT I), 230 V model

Current (A)	*Voltage (V)*	*Max. load time*	*Input current (A)*
0	9.4	–	0.4
50	9.0	30 min.	
100	8.6	10 min.	6
200	8.0	90 s	
300	7.2	30 s	
400	6.4	20 s	
500	5.7	10 s	
600	5.0	5 s	33
700	4.3	3 s	
750[1)]	3.8	2 s	
800[2)]	3.6	–	42

1) Maximum current with standard cables 2 x 5 m 50 mm²
2) At 800 A and above, instant shut off

Note: The above figures shows maximum load time from cold state 25°C. They are not valid for repeated tests

Output AC (CAT I), 230 V model

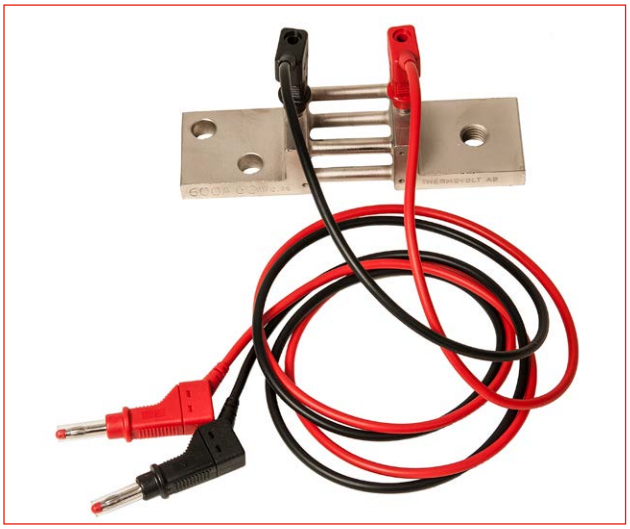
Current (A)	*Voltage (V AC)*	*Max. load time*	*Rest time*
0	11.2	Cont.	–
660	4.5	2 s	4 min.

Note: The DC and AC outputs must not be loaded at the same time.

OPTIONAL ACCESSORIES

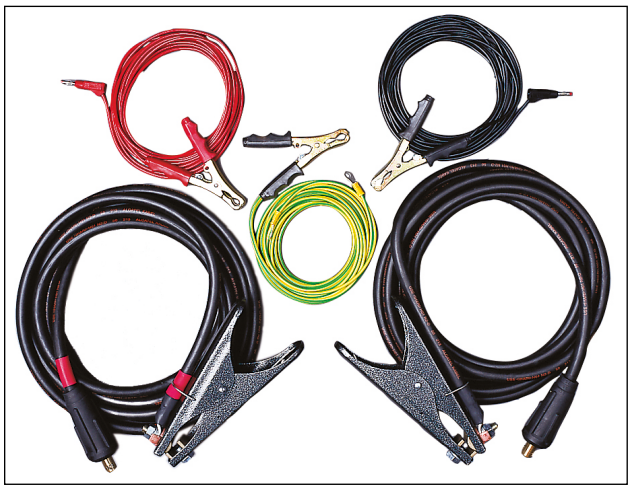
Current shunt for calibration

An optional calibration shunt (600 A/60 mV) can be ordered for MOM690. A regularly calibration is needed to make certain that the instrument readings remain correct.



Current shunt for calibration, BB-90024

INCLUDED ACCESSORIES



Cable set standard GA-05055 (current cables and sensing cables) and ground cable GA-00200.

ORDERING INFORMATION

Item	Cat. No.
MOM690 Complete with: Cable set standard GA-05055 Current cables 2 x 5m, 50 mm² Sensing cables 2 x 5 m Ground cable GA-00200, 5 m Transport case GD-00182	
115 V Mains voltage	BB-41190
230 V Mains voltage	BB-42390
Optional	
Cable set 15 m (49 ft) 2 x 15 m (49 ft), 95 mm² (current cables) 2 x 15 m (49 ft), 2.5 mm² (sensing cables) Weight: 29.4 kg (64.8 lbs)	GA-09155
Cable extension sets Since all current cables have bayonet connectors, standard cables can be extended with 5- or 10-meter extension cables. When demands for both high currents and long cable runs, cable kits with larger cross-sectional area needed.	
Extension cable set No. 1 2 x 5 m (16 ft), 50 mm² (current cables). 2 x 10 m (33 ft), 2.5 mm² (sensing cables). Weight: 7.5 kg (16.5 lbs)	GA-05057
Extension cable set No. 2 2 x 10 m (33 ft), 50 mm² (current cables). 2 x 15 m (49 ft), 2.5 mm² (sensing cables). Weight: 15 kg (33 lbs)	GA-05107
Calibration shunt Shunt 600 A/60 mV, 2 x 1 m(3,3 ft) sensing cables	BB-90024
Transport case XL With space for the standard 5 m cable set + extension cable set No. 1 or No. 2.	GD-00042

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MOM690_DS_en_V05a
ZI-BB04E • Doc. BB0214iE • 2023
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