

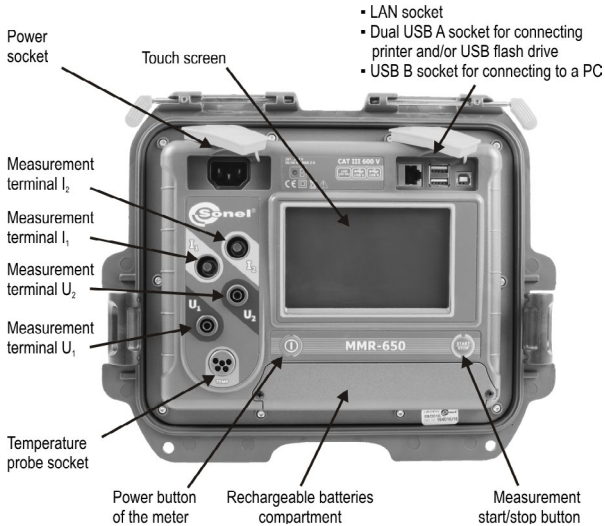
# Sonel MMR-650

Winding Resistance and Low Resistance Meter



## SYMBOLS DISPLAYED BY THE METER

v1.00 | 14.11.2018



	Memory		Measurement setup mode
	Settings		Saving to memory
	Return to the main menu		Report print
	Help		Temperature measurement, reference temperature
	Adding a client, object or measuring point		Presentation of measurement results in the form of a time chart
	Searching for an object or measurement point		Exit from the option
	Entry to client objects		Wi-Fi signal strength
	Entry to client edition, object or measurement point with a possibility of changing data		There was a limitation of the measuring current to a value lower than that ensuring maximum accuracy
	Fast entry deletion on the on-screen keyboard		Test leads interchanged
	Deletion of a measurement point, object or client		High level of noise (interference), measurement possible with additional uncertainty
	Measuring Mode		High level of noise (interference), measurement possible without defining uncertainty
	Recording mode		

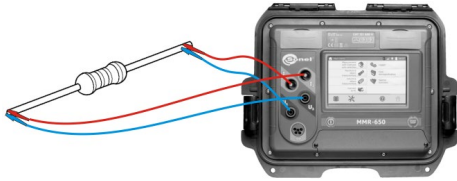


## First steps

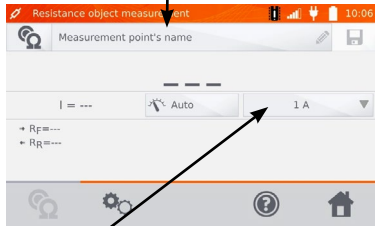
- 1 Turn the meter on.
- 2 Select a measurement function and configure it.
- 3 Connect the meter to the tested object.
- 4 Run the measurement.
- 5 Read out the result and save it to the memory.

## 2 Testing resistance objects

Connect the meter to the tested object.



If you want to save the result to the memory, type the name of the measurement point.



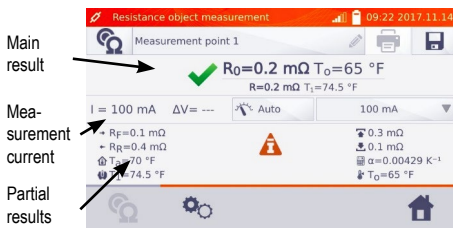
Set maximum value of the measuring current.



Run the measurement using **START/STOP** button.



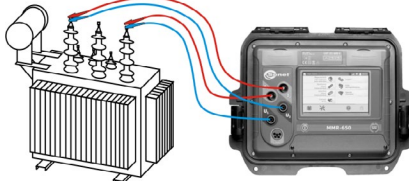
After few seconds the result will appear.



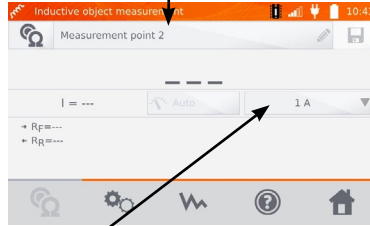
$R_0$  .....resistance at reference temperature  
 $R_f$  .....resistance at the measuring current flowing in the assumed positive direction  
 $R_r$  .....resistance at the measuring current flowing in the assumed negative direction

## 2 Testing inductive objects

Connect the meter to the tested object.



If you want to save the result to the memory, type the name of the measurement point.



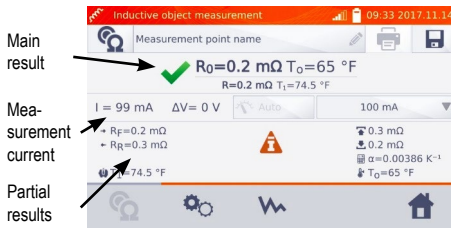
Set maximum value of the measurement current.



Run the measurement using **START/STOP** button.



Wait for the measurement result.  
 For really big transformers it can take few minutes.

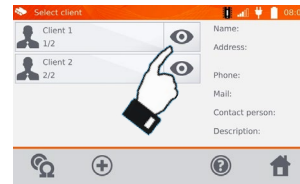


$T_0$  .....ambient temperature  
 $T_1$  .....object temperature  
 $T_0$  .....reference temperature  
 $T_{\alpha}$  .....upper / lower resistance limit  
 $\alpha$  .....temperature coefficient of resistance

## 5 Saving to the memory



When the measurement ends select .



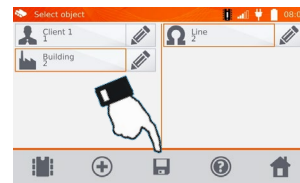
Select a client by pressing next to his name.



Select an object (subject) by pressing its name.



Select a measurement point by pressing its name (a red border will appear).



Save the result by pressing .