



## Measure motor winding resistance and other low resistances

### Product features

MMR-630/620 microohmmeters enable accurate measurements of both connections resistance (welded, soldered, bolted) and winding resistance of electrical motors and power transformers.

- Measurements of objects resistive in nature:
  - » welded and soldered connections, equipotential bondings, earthing conductors,
  - » contacts, welds of rails, conductors and cables,
  - » measurement according to the four-lead method.
- Measurements of objects inductive in nature:
  - » motor windings,
  - » low-resistance coils.



## Additional functions

- Automatic or manual selection of measuring range (measurement of objects of an inductive nature).
- Selection of measurement mode according to the type of measured object:
  - » fast measurement (3 seconds) for measurement of objects of a resistive nature,
  - » extended measurement for testing of objects of an inductive nature (accelerated mode, with slightly worse accuracy, available); with automatic discharging of the object after measurement.
- Selection of measurement mode depending on application (including control of product series):
  - » measurement in **normal** mode - triggered when the "START" button is pressed,
  - » measurement in **automatic** mode - the instrument awaits connection of all four test leads to the object, after which it automatically start measurement in one or both directions and calculates the mean resistance value,
  - » measurement in **continuous** mode - the meter repeats successive measurement cycles with breaks every 3 seconds (for objects of a resistive nature) or performs measurement continuously (for objects of an inductive nature).
- Window mode:
  - » makes possible to set an upper and lower limit within the measurement result should remain; sound signal triggered when the result is beyond set range,
  - » capability of performing measurements even under disturbances of a value five times greater than the measured signal.

## Resistance measurement

MMR-620		MMR-630		Test current	Accuracy
Range	Resolution	Range	Resolution		
0...999 $\mu\Omega^*$	1 $\mu\Omega$	0...999.9 $\mu\Omega$	0.1 $\mu\Omega$		
1.000...1.999 m $\Omega$	0.001 m $\Omega$	1.0000...1.9999 m $\Omega$	0.0001 m $\Omega$	10 A	
2.00...19.99 m $\Omega$	0.01 m $\Omega$	2.000...19.999 m $\Omega$	0.001 m $\Omega$		
20.0...199.9 m $\Omega$	0.1 m $\Omega$	20.00...199.99 m $\Omega$	0.01 m $\Omega$	1 A	
200...999 m $\Omega$	1 m $\Omega$	200...999.9 m $\Omega$	0.1 m $\Omega$		$\pm(0.25\% \text{ m.v.} + 2 \text{ digits})$
1.000...1.999 $\Omega$	0.001 $\Omega$	1.0000...1.9999 $\Omega$	0.0001 $\Omega$	0.1 A	
2.00...19.99 $\Omega$	0.01 $\Omega$	2.000...19.999 $\Omega$	0.001 $\Omega$	10 mA	
20.0...199.9 $\Omega$	0.1 $\Omega$	20.00...199.99 $\Omega$	0.01 $\Omega$	1 mA	
200...1999 $\Omega$	1 $\Omega$	200.0...1999.9 $\Omega$	0.1 $\Omega$	0.1 mA	



\*„m.v.” - measured value

# Technical specification

insulation type acc. to EN 61010-1	double	
measurement category acc. to EN 61010-2-030	III 300 V	
ingress protection acc. to EN 60529	IP54	
protection against external voltage	up to 440 V AC for 10 s	
power supply to battery charger	100 V...250 V/50 Hz...60 Hz, 200 mA	
battery charging time	ca. 2.5 hours	
number of measurements with 10 A current performed when powered from the battery pack	300	
maximum wire resistance for 10 A current	0.1 $\Omega$	
accuracy of measuring current setting	$\pm 10\%$	
time of performing the resistance measurement	with selected resistive object type and bidirectional current flow	3 s
	with selected inductive object type, dependent on the resistance and inductance of the object	couple of minutes (max. 10)
dimensions	295 x 222 x 95 mm	
meter weight	ca. 1.7 kg	
operating temperature	0°C...+40°C	
charger operating temperature	+10°C...+35°C	
storage temperature	-20°C...+60°C	
humidity	20%...90%	
reference temperature	+23°C $\pm 2^\circ\text{C}$	
reference humidity	40%...60%	
temperature coefficient	$\pm 0,01\%$ d.v./°C	
time to AUTO-OFF	120 s	
TFT graphic display	192 x 64 pixels	
interface standard	RS-232C	
quality standard - design and manufacturing	ISO 9001	
the product meets the EMC requirements (emission for industrial environment) according to	EN 61326-1 and EN 61326-2-2	

"d.v." - displayed value

## Standard accessories



**2 x Kelvin clamp  
1 kV 25 A**

WAKROKELK06



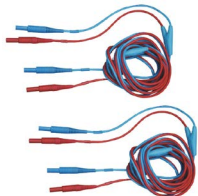
**4x crocodile clip  
black 1 kV 32 A**

WAKROBL30K03



**2x double-tip  
Kelvin probe  
(banana sockets)**

WASONKEL20GB



**Doble-wire test lead  
3 m (10 / 25 A)**

U1/I1  
WAPRZ003DZBBU111

U2/I2  
WAPRZ003DZBBU212



**Mains power cable  
Euro 2-pin plug  
/ IEC C7 plug**

WAPRZLAD230



**NiMH battery  
4.8 V 3.2 Ah**

WAAKU03



**Unisonel hanging  
straps**

WAPOZSZE1



**L1 carrying case**

WAFUTL1



**RS-232 serial  
transmission cable**

WAPRZRS232



**Calibration certifi-  
cate issued by an  
accredited laboratory  
(no accreditation)**

## Optional accessories



**Kelvin vice  
with cables**

WAZACKEL1



**USB/RS-232 adapter**

WAADAUSBRS232



**Sonel Reader  
software**

WAPROREADER



**Calibration certificate  
with accreditation**

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