

# MPK102e

## 100 A DIGITAL MICRO-OHMMETER



- ✓ MICROPROCESSOR CONTROLLED
- ✓ ALPHANUMERICAL DISPLAY
- ✓ RESOLUTION DOWN TO: 0,1  $\mu\Omega$
- ✓ RESISTANCE READING UP TO: 200  $\Omega$
- ✓ UP TO 100 A TEST CURRENT
- ✓ KELVIN-TYPE (4 - WIRES) MEASUREMENT
- ✓ POWERED BY INTERNAL BATTERY (UP TO 10 A) OR MAINS SUPPLY
- ✓ DIRECT READING (UP TO 4½ DIGITS)
- ✓ OVERHEATING PROTECTION
- ✓ SERIAL DATA OUTPUT (RS232)

The **MPK-102e** high current micro-ohmmeter is a portable, microprocessor-controlled instrument, used to accurately measure very low contact resistances of breakers and switches, busbars, transformers winding and engines, etc, with test currents from **1 mA** to **100 A**. It employs the 4 terminals-method to avoid measurement errors caused by test leads and their contact resistances. Resistances readings are shown in the alphanumeric display with up to 4½ digits-resolution. It allows to measure resistances up to **200  $\Omega$** , with a resolution of up to **0.1  $\mu\Omega$** .

Using its internal rechargeable battery, measurements with up to 10 A test current may be carried out without connecting the equipment to mains power. Powered by to mains power, it allows to measure with any test current up to 100 A.

Measurement accuracy is guaranteed by an state-of-the-arts signals amplification system, offset-free and of high long-term stability. Test current may be adjusted by the operator in every one of the scales and their values are measured using an analogue indicator (bargraph), making it easy to measure resistances with a significant inductive component, as in the case of big transformers windings.

It has a serial data output (RS232) that may be connected to a printer, computer, or any data collector to register measured values. The Hold function keeps in the display the measured value at a certain time-point, when the corresponding key is pressed.

The high-current generation system is based on modern technology that allows to significantly decrease both its weight (14kg) and size. The cabinet is made of plastic material highly resistant to impacts and to environmental challenges. Internal thermal sensors in all sensitive components avoid any damaged caused to the instrument due to overheating.

This is a strong but lightweight equipment, and may be easily carried by one person. It is water-resistant and can be used under severe weather conditions offering an excellent performance working both in the laboratory and out in the field.

# MPK 102e - TECHNICAL SPECIFICATIONS

## TEST CURRENTS

1 mA, 10 mA, 100 mA, 1 A, 10 A, 100 A  
Each current may be continuously adjustable from 0 to 100%

## RESISTANCE RANGES

0-2000  $\mu\Omega$  @ 100 A  
0-20 m $\Omega$  @ 10 A  
0-200 m $\Omega$  @ 1 A  
0-2000 m $\Omega$  @ 100 mA  
0-20  $\Omega$  @ 10 mA  
0-200  $\Omega$  @ 1 mA

## RESOLUTION

0,1  $\mu\Omega$  @ 100 A  
1  $\mu\Omega$  @ 10 A  
10  $\mu\Omega$  @ 1 A  
100  $\mu\Omega$  @ 100 mA  
1 m $\Omega$  @ 10 mA  
10 m $\Omega$  @ 1 mA

## MEASUREMENT PRINCIPLE

Four-terminal, Kelvin-type.

## CONTINUOUS OPERATION TIME

At 100 A this equipment may be used continuously for aprox. 15 minutes before the thermal protection activates.  
At 10 A or less, there is not a limited time for continuous operation.

## THERMAL PROTECTION

Protects all sensitive components, avoiding any damage due to overheating.

## BASIC ACCURACY

$R < 0.5 \text{ m}\Omega$ :  $\pm (0.50\% \text{ of reading} + 2 \text{ ULSD}^*)$

$R \geq 0.5 \text{ m}\Omega$ :  $\pm (0.20\% \text{ of reading} + 2 \text{ ULSD}^*)$

\* Units of the Least Significant Digit.

## ADVANCED FEATURES

Digital direct reading of very low resistances in the alphanumerical display, with up to 4½ digits.  
Very fast and accurate measurements.

## TEST CURRENT MEASUREMENT

The current is digitally measured and a bargraph shows the result. The bargraph indication is specially useful when measuring inductive loads, so that the operator can verify easily when the test current has been stabilized.

## SERIAL DATA OUTPUT

RS232 @ 4800 bps. Suitable for data collection in an external serial printer, computer or data-logger.

## ENVIRONMENTAL PROTECTION

IP54 with closed lid.

## SAFETY CLASS

Meets the requirements of IEC 61010-1:1990, IEC 61010-1:1992 amendment 2

## POWER SUPPLY

Mains or internal battery powered.  
**Internal battery:** rechargeable, sealed lead-acid (for up to 10 A test current).  
**Mains supply\*:** 100-130V~ or 220-240 V~ (for up to 100 A test current).  
\*The option must be indicated on the order.

## BUILT-IN BATTERY CHARGER

For 100-130V~ or 220-240 V~ mains supply.

## OPERATING TEMPERATURE RANGE

-5°C to 50°C.

## STORAGE TEMPERATURE RANGE

-25°C to 65°C.

## HUMIDITY RANGE

95% RH (non condensing).

## EQUIPMENT WEIGHT

Approx. 14 kg.

## DIMENSIONS

502 x 394 x 190 mm.

## INCLUDED ACCESSORIES

2 combined current and potential leads for 10 A (1.8 m).  
2 combined current and potential leads for 100 A (6 m).  
1 communication cable (RS232).  
1 power cord.  
1 user guide.  
1 case for the accessories.

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