

M5000

Digital Multimeters



- **Tough, Shock-Resistant Toolbag Instruments**
- **0,5% Basic Accuracy**
- **Large Character L.C.D.**
- **Automatic Switch Off**
- **Water Resistant**
- **Drop Proof**

DESCRIPTION

The Megger® series of hand held digital multimeters combine ruggedness with reliability, accuracy and ease of use. These robust instruments are suitable for general purpose applications, including operation in harsh environments. They are supplied with watertight seals at the rotary switch, input terminals and seams to keep out dust, dirt and moisture. There are two instruments that make up the M5000 series, both offering a wide spectrum of measuring functions and ranges.

The M5091 has centre switch selectable ranges, while the M5097 offers a choice of autoranging or manual-ranging for voltage and resistance measurements. The instruments have basic d.c. voltage accuracies of 0.5%, a continuity bleeper, a diode check and auto-switch-off to preserve battery life. The units are supplied with protective rubber holsters which incorporate a built in tilt stand, a nail hook plus a convenient test lead holder.

The M5091 has all the capabilities necessary for general purpose testing. These include five current ranges enabling measurement up to 20 A with a maximum resolution of 0,1 uA, as well as fully specified voltage and resistance measurement parameters.

The M5097 has slightly increased measuring ranges over the M5091 with many additional, advanced features, such as autoranging on the voltage and resistance ranges. There is a range hold feature to allow the selected range to be fixed if the user requires the reading to settle quickly. The L.C.D. display incorporates an analogue-style arc (for

varying levels) as well as a 3½ digit display (for accurate results). The data hold button can be pressed at any time to store the measurement (digital and analogue values) to facilitate viewing after moving the instrument to a more accessible position. This facility can be stalled by using the delay hold switch which delays the hold measurement from taking effect by 6 seconds, enabling fluctuations to stabilise. The 3½ digit L.C.D. on the M5091 has 20 mm high characters plus annunciators for polarity, over-range and low-battery voltage indication. The large characters make reading the instrument in poor lighting conditions much easier. The M5097 has a similar 3½ digit display, but with an additional analogue style bar graph to more clearly illustrate and indicate varying readings; ideal for making peak or null adjustments. The display also has annunciators for range, measurement units, polarity, over-range, low-battery voltage, range hold data hold and low power resistance, so that the operator can easily see what type of measurements are being made.

Both instruments have an automatic power-off facility, meaning that they will automatically switch off after 10 minutes from the last use of the selector switch or the latest measurement. This ensures that the battery power is not wasted if the instrument has inadvertently been left on. The instruments are constructed to be resistant to the type of mechanical shocks experienced in everyday use. They also resist the ingress of moisture and are suitable for use in applications where they might be exposed to inclement weather.

APPLICATIONS

This series of multimeters are suitable for making voltage and resistance measurements on all kinds of electrical and electronic circuits. As they are of rugged construction the instruments are equally suited to field service and the laboratory or workshop. They have been designed with the emphasis on safety, minimising the danger to both user and instrument.

SPECIFICATION

Safety

M5091 Complies with IEC1010 Cat III 600 V, Cat II 1000 V

M5097 Complies with IEC1010 Cat III 300 V, Cat II 600 V

EMC

In accordance with IEC61326 including amendment No.1

| Model No. | M5091 | M5097 |
|---------------------------------------|--|--|
| Voltage Ranges d.c. and a.c. | 200 mV 2 V 20 V 200 V 900 V (d.c.)/ 600 V (a.c.) | 300 mV d.c. only 3 V 30 V 300 V 1000 V (d.c.)/750 V (a.c.) |
| Best Resolution | 0,1 mV | |
| Accuracy | d.c. 0,5% of reading ± 2 digits a.c. 1,3% of reading ± 5 digits (40 Hz to 500Hz) | |
| Input Characteristics Voltage Ranges | 10 M Ω (in // <100 pF for a.c.) | |
| Best Resolution | 0,1mV | |
| Current Ranges (d.c. and a.c.) | 200 μ A 2000 μ A 20 mA 200 mA 20 A | 300 μ A 3000 μ A 30 mA 300 mA 10 A (20 A for 30 seconds) |
| Best Resolution | 0,1 μ A | |
| Accuracy d.c. | Voltage $\pm 0,5\% \pm 1$ digit Current ≤ 200 mA $\pm 1\% \pm 1$ digit Current 10A $\pm 2\% \pm 3$ digits | $\pm 0,5\% \pm 2$ digits $\pm 1,2\% \pm 2$ digits $\pm 2\% \pm 3$ digits |
| Accuracy a.c. (40 Hz to 500 Hz) | Voltage $\pm 1,25\% \pm 4$ digits Current ≤ 200 mA $\pm 1,5\% \pm 3$ digits Current 10A $\pm 2,5\% \pm 3$ digits | $\pm 1,3\% \pm 5$ digits $\pm 2\% \pm 3$ digits $\pm 2,5\% \pm 5$ digits |
| Resistance Ranges | 200 Ω , 2 k Ω , 20 k Ω , 200 k Ω , 2 M Ω & 20 M Ω | 300 Ω , 3 k Ω , 30 k Ω , 300 k Ω , 3 M Ω & 30 M Ω |
| Best Resolution | 0,1 Ω | 0,1 Ω |
| Accuracy (% of reading) | 200 Ω Range; 0,75% ± 4 digits Ranges; (2 k Ω to 2 M Ω 0,75% ± 1 digit) (20 M Ω Range; 1,5% ± 5 digits) | 300 Ω Range; $\pm 1\% \pm 4$ digits Ranges: (3 k Ω to 300 k Ω $\pm 0,8\% \pm 2$ digits) (30 M Ω Range; $\pm 2,5\% \pm 5$ digits) |
| Continuity Buzzer/ Diode Check | 1,5 mA max test current 3,3 V max o/c voltage | |
| Battery | 1 x 9 V battery (PP3 or IEC 6LR61) life: ~ 300 hrs. | 2 x 1,5 V AAA (LR03): ~ 1000 hrs. |
| Display | 3 $\frac{1}{2}$ digit L.C.D., automatic polarity, max. indication 1999 bargraph display | 3 $\frac{1}{2}$ digit L.C.D., automatic polarity, max. indication 3200 with 65 segment |
| Dimensions | 175 H x 84 W x 31 D mm | |
| Weight | 350 g (0,75 lb approx.) | |

ORDERING INFORMATION

| Item (Qty) | Order No. | Item (Qty) | Order No. |
|-----------------------------|-----------|-----------------------------|-----------|
| Digital Multimeter | M5091 | Optional Accessories | |
| Digital Multimeter | M5097 | FPK8 Fused Test Lead | 6111-218 |
| Included Accessories | | Lead Set c/w Crocodile Clip | 6220-562 |
| 9 V Battery | | | |
| Test Lead Set | | | |
| Rubber Holster | | | |
| Instruction Book | | | |

UK
 Archcliffe Road Dover
 CT17 9EN England
 T +44 (0) 1304 502101
 F +44 (0) 1304 207342

UNITED STATES
 4271 Bronze Way
 Dallas TX 75237-1088 USA
 T 800 723 2861 (USA only)
 T +1 214 333 3201
 F +1 214 331 7399

OTHER TECHNICAL SALES OFFICES
 Norristown USA, Toronto CANADA,
 Mumbai INDIA, Trappes FRANCE,
 Sydney AUSTRALIA, Madrid SPAIN
 and the Kingdom of BAHRAIN.

Registered to ISO 9001:2000 Reg no. Q 09290
 Registered to ISO 14001 Reg no. EMS 61597

M5000_DS_en_V10

www.megger.com
 Megger is a registered trademark