

# CM500

## Multifunction Insulation Tester



- **Combines the functions of several Instruments in one package**
- **Non-tripping Loop Test range for tests on RCD protected circuits**
- **RCD ramp test features actual tripping current**
- **Stores approximately 750 different test results in internal memory**
- **Recall results to the display for manual certificate completion**
- **Direct printer output for on-site printing of test results**

### DESCRIPTION

The Megger® CM500 Multifunction Installation Tester is a compact product that combines all the functions required to fully test Domestic, Commercial and Industrial fixed wiring, in accordance with International Standards.

The CM500 is the first Installation Tester with a non-tripping Loop Test guaranteed not to trip any RCD rated 30 mA or above. Its memory and storage capability offers all data to display, download to a PC and a unique on-site print facility.

### FEATURES

- Storage of test results
- Recall of test results to instrument display
- Direct serial printer output via RS232 port
- Connect to IBM compatible PC for storage of results
- Ramp Test for measuring RCD actual trip currents
- Variable RCD test current for programmable devices
- Designed and manufactured in accordance with International Safety Standards
- Insulation tests at 250 V, 500 V & 1000 V with 1 mA output
- Continuity tests with 200 mA short circuit capability
- Phase-Phase, Phase-Neutral, Phase-Earth Loop Tests
- High current Loop Testing with 0,01  $\Omega$  resolution
- Prospective Earth Fault and Short Circuit Current

- Low current Loop Test for non-tripping of RCDs
- Earth Electrode Resistance Test for simple systems
- No-trip, Trip and Fast Trip RCD testing
- Tests d.c. Sensitive, Selective and General Type RCDs
- Supply voltage, polarity and frequency indication
- Phase sequence indication using optional leads
- Complete with Carry Case, Test Leads and Certificate of Test

Tests in accordance with International Standards and National Wiring Regulations including BS7671 (16th edition wiring regulations) and Euro Standard EN61557.

Test lead resistances can be nulled and a continuity buzzer is incorporated for rapid identification of open and short circuits. Settable automatic polarity reversal and result averaging.

Loop tests are performed to a resolution of 0,01  $\Omega$  with direct display of PEFC and PSCC.

A unique low current Loop Test with 0,1 $\Omega$  resolution for testing circuits protected by an RCD rated at 30 mA or above, without tripping the RCD, including the newer electronic ones.

Auto-ranging earth resistance function enables measurement of earth electrode resistance on TT systems.

Verification of the correct operation of RCDs rated between 10 mA and 1000 mA with trip timing up to 2000 ms. A ramp test indicate actual trip current to aid in fault diagnosis and variable test current function enables

the testing of programmable and specialist devices.

Upon connection to the mains supply the polarity and voltage are displayed to show correct wiring of the socket under test and warn of live voltages. Supply frequency is indicated at the touch of a button.

Approximately 750 different results may be saved into internal memory for use later on.

Stored results may be recalled to the CM500 display to enable reviewing and facilitate the manual recording and completion of test reports and certificates.

Test results may be printed directly on site by simply connecting an appropriate serial printer to the RS232 port.

A standard RS232 serial port enables test results to be downloaded to a PC for later use. The ultimate solution is provided with the use of PowerSuite™ for Windows™.

Meets or exceeds the requirements of EN61010-1 Category III 480 V (max) phase-phase.

## SPECIFICATION

### Supply Voltage measurement

25 to 500 V  $\pm 2\%$   $\pm 2$  digits

### Supply Frequency Measurement

d.c., 16,0 to 460 Hz  $\pm 0,1\%$   $\pm 1$  digit

### Insulation Test Ranges

250, 500 & 1kV d.c. into 1 mA load

1 k $\Omega$  to 99,9 M $\Omega$  @ 250 V

1 k $\Omega$  to 299 M $\Omega$  @ 500 V

1 k $\Omega$  to 499 M $\Omega$  @ 1k V

$\pm 2\%$   $\pm 2$  digits (up to 99 M $\Omega$ )

### Continuity & Resistance Ranges

0,01  $\Omega$  to 99,9  $\Omega$   $\pm 2\%$   $\pm 2$  digits

100  $\Omega$  to 99,9 k $\Omega$   $\pm 5\%$   $\pm 2$  digits

Open circuit voltage 4 - 5 V d.c.

Test current 200 - 250 mA up to 2  $\Omega$

### Loop & Earth Resistance Ranges Line / Earth & Earth Electrode Supply

100 to 280 V 45 to 65 Hz

0,01  $\Omega$  to 9,99  $\Omega$   $\pm 5\%$   $\pm 0,03$   $\Omega$

10,0  $\Omega$  to 89,9  $\Omega$   $\pm 5\%$   $\pm 0,5$   $\Omega$

90  $\Omega$  to 899  $\Omega$   $\pm 5\%$   $\pm 5$   $\Omega$

900  $\Omega$  to 3,00 k $\Omega$   $\pm 5\%$   $\pm 20$   $\Omega$

### Line / Line (Phase / Phase) Supply

100 to 480 V 45 to 65 Hz

0,01  $\Omega$  to 19,99  $\Omega$   $\pm 5\%$   $\pm 0,03$   $\Omega$

### Low Current Loop Test (15mA) Supply

100 to 280 V 45 to 65 Hz

0,2  $\Omega$  to 200 k $\Omega$   $\pm 3\%$   $\pm 0,3$   $\Omega$

200 to 1,99 k $\Omega$   $\pm 5\%$   $\pm 5$   $\Omega$

Noise immunity 1s within  $\pm 0,3$   $\Omega$

### PEFC

Calculated from nominal supply voltage divided by loop resistance.

### RCD Test Ranges

Supply 100 to 280 V 45 to 65 Hz

IDn – 10, 30, 100, 300, 500,

1000 mA & variable test current

10 mA to 1 A

### Current accuracy

No Trip (1/2 IDn) -8% to 2% Trip (I, 5I 150 mA fast trip) +2% to +8% Ramp test  $\pm 3\%$

### RCDs

Trip timing 0,1 to 1999 ms  $\pm 1\%$   $\pm 1$  ms

Contact voltage 0,1 to 90,0 V +10% -0%  $\pm 5$  digits

Auto Sequence 150 mA 40 ms test

### Power Supply

8 x 1,5V Alkaline cells type LR6 or 1,5V nickel cadmium rechargeable cells.

A new set of alkaline battery cells will typically give more than 4500 insulation or 3250 continuity tests.

### Fuses

Replaceable 500 mA (F) HBC 10 kA 500 V.

Non-replaceable 7 A (SIBA 70-065-63)

### Safety

Double insulated to IEC61010-1

Installation Category III, 230V phase-ground, 440V phase-phase.

### E.M.C.

In accordance with IEC61326-1

### EN61557

Complies with the following parts of EN61557, electrical safety in low voltage systems upto 1000 V a.c. and 1500 V d.c. - Equipment for testing, measuring or monitoring of protective measures:-

Part 1- General requirements

Part 2- Insulation resistance

Part 3- Loop resistance

Part 4- Continuity

Part 6- Residual current devices (RCD)

Part 10- Combined measuring equipment

### Dimensions

245 mm x 200 mm x 95mm

Weight 1.35 kg

**ORDERING INFORMATION**

Item	Order Code	Optional Accessories	
Multifunction Tester (UK)	CM500UK	3 wire test lead set for phase rotation indication	6231-632
Multifunction Tester (UK)	NSN 6625-99-169-4728	2 wire test lead set	6231-631
		2 wire test lead set with test switch in probe	6231-636
Multifunction Tester (German)	CM500GM	2 wire lead set with 5 metre length	6231-637
Multifunction Tester (French)	CM500FR	Test lead with Schuko plug	6231-635
Multifunction Tester (Dutch)	CM500NL	Test lead with UK mains plug	6231-633
Multifunction Tester (Czech)	CM500CZ	Earth bond test lead set	6231-634
Multifunction Tester (Finnish)	CM500FL	Printer connection lead	25955-026
Multifunction Tester (Swedish)	CM500SW	Computer connection lead	25955-025
Multifunction Tester (Italian)	CM500IT	Fused prod and clip set	6180-405
Multifunction Tester (Spanish)	CM500SP		
Multifunction Tester (Euro)	CM500EU		
<b>Included Accessories</b>			
Instruction Book	6172-402		
Test/Carry pouch	6420-114		
Mains Lead	6220-743		
Carrying Strap	6220-611		
2 wire test lead set	6231-631		

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