

LT7

Digital Loop Testers



- **Tests Phase-Earth and Phase-Neutral supply loops**
- **Low current loop test does not trip RCDs**
- **Direct readout of Prospective Short Circuit Current and Prospective Earth Fault Current**
- **Makes measurements on supplies from 50 V to 263 V**

DESCRIPTION

The Megger® LT7 Digital Loop Tester is a small hand held instrument designed to accurately, reliably and easily measure loop resistances and prospective fault currents at socket outlets, distribution boards and light sockets. The LT7 may also be used for testing earth bonding.

Two loop tests are available; the traditional high current test for circuits protected by fuses, and a low current test for taking measurements on circuits which are protected by residual current devices (RCDs).

Measurements of phase-earth loop resistance and prospective earth fault current (PEFC) are made at socket outlets using the standard lead supplied. The included two wire lead set allows these measurements, also phase-neutral loop resistance and prospective short circuit current (PSCC), to be taken at locations such as distribution boards or lighting fittings where there is no socket outlet available.

For all prospective fault current measurements simply select the dedicated switch position. The nominal 23A test current is applied and the results are displayed directly on the liquid crystal display.

Two liquid crystal "neons" monitor the voltage between phase and earth and between neutral and earth, and will "light up" if a voltage is detected. The LT7 will check that the mains supply voltage is within limits and will inhibit testing if the earth contact voltage would rise above 50 V if the test were continued.

The LT7 Digital Loop Tester is powered by four internal dry cells although the test current uses the mains supply voltage. It is therefore able to make measurements of phase-earth loop resistance via a standard mains plug, or of phase-earth or phase-neutral loop resistance using the two wire lead set. The two wire set may also be used to test bonded metalwork.

APPLICATIONS

The tests carried out by the LT7 Digital Loop Tester comply with International requirements for the testing of fixed wiring installations in industrial, commercial and domestic premises.

The resistance of the phase-neutral loop is needed to ensure that adequate over-current protection has been provided in the case of a short circuit developing between the two live conductors.

The phase-earth loop resistance is also needed to ensure adequate over-current protection, but also to ensure that, in the case of an earth fault, an adequately large current will flow to activate any protective devices. These may be in the form of fuses or residual current devices.

Generally, circuits protected by fuses need to have very low loop resistances. A 0-20 Ω range is provided, with a resolution of 0.01 Ω , to test these circuits. Tests on this range are carried out with a nominal 23 A test current.

Circuits protected by residual current devices may be of much higher resistance. Since RCDs and low current rated MCBs are sensitive to a high test current, the LT7 is provided with a 15 mA test range which measures to 2000 Ω .

At these levels the 0.01 Ω resolution is not necessary for safety and so the resolution is limited to 0.1 Ω .

Residual current devices with ratings of 30 mA or greater should not trip when using this range.

FEATURES AND BENEFITS

- Low current loop test means that circuits protected by RCDs may be tested without tripping the rcd.
- Tests phase-earth and phase-neutral supply loops on 230 V and 110 V supplies.
- Ensures that adequately low loop resistances are present to operate protective devices
- Direct readout of prospective short circuit current (PSCC) and of prospective earth fault current (PEFC).
- No tedious calculations to determine the required rating of overcurrent devices.
- The instrument carries the CE mark to show compliance with both the Low Voltage and EMC Directives
- The instruments are designed to meet the requirements of IEC 1010-1, Installation Category III for Phase to Earth Voltages up to 300 V. Expensive fused test leads are not required.
- “Neon” indication of supply voltages.
- Fuse and thermal protection.

SPECIFICATION

Measurement Ranges

20 Ω	0,01 Ω - 19,9 Ω
200 Ω /2k Ω	0,1 Ω - 1,99 k Ω
PSCC	0,01 - 0,99 kA

1,0 - 19,9 kA

Accuracy

Voltage

$\pm 2\%$ ± 2 digits (when the L-PE neon illuminates.)

20 Ω Range

$\pm 2\%$ ± 3 digits (on 230V supply)

$\pm 5\%$ ± 6 digits (on 110V supply)

200 Ω /2k Ω

$\pm 2\%$ 3 digits (on 230V supply)

$\pm 5\%$ 6 digits (on 110V supply)

PSCC

Calculated from 20 Ω range.

Note: The calibration of the instrument includes the test leads and plug as supplied.

Operational Supply

50 V - 263 V 50/60Hz

Battery Supply

4 x 1,5 V Alkaline cells type IEC LR6, or

4 x 1,2 V NiCd or NiMH rechargeable cells.

Battery Life

Typically 1200 one minute tests.

Auto shut off

After 5 minutes of instrument inactivity.

Low Battery Indicator

A display indicator illuminates when alkaline battery cells are almost exhausted.

Display

3 digit L.C.D. with low battery and excessive noise indication.

Thermal Protection

A thermal cut out will operate to inhibit testing if the instrument becomes over heated through repetitive testing.

Fuses

Internal 10 A (F) 440 V 10 kA 32 mm ceramic HBC.

Test leads terminated with a 3 pin BS1363/A plug should have a 10 A fuse to BS1362 fitted in the plug.

Safety

The instrument meets the requirements for double insulation to IEC 1010-1 (1992), EN61010 (1993) at 230 V Installation Category III. Installation Category III relates to the transient overvoltages likely to be found in fixed installation wiring.

EMC

In accordance with IEC61326 including Amendment No.1.

Environmental Protection

IP40

Temperature Range**Operating:**

-5°C to 40°C

Storage:

-25°C to 65°C

Humidity Range**Operating:**

0 - 90% RH non condensing

Storage:

0 - 95% RH non condensing at 40°C

Weight

1200 gm (including leads, case & battery)

(2.6 lb approx.)

Dimensions

220 x 92 x 55 mm.

(8.6 x 3.6 x 2 ins. approx.)

ORDERING INFORMATION

Item (Qty)	Order No.	Item (Qty)	Order No.
UK Digital Loop Tester	LT7	Optional Accessories	
Continental Digital Loop Tester	LT7/EURO	Earth Bond Lead Set	6231-586
Included Accessories			
User Guide	6172-087	Option for LT7/Euro	6231-593
2-Wire Lead Set	6231-591	Option for LT7	
Test & Carry Case	6420-092	Power Cord Test Lead with 3 pin plug to BS1363/A	6231-601
Power Cord Test Lead with 3 pin plug to BS1363/A (with LT7)	6231-601		
Power Cord Test Lead with CEE 7/7 plug (with LT7/Euro)	6231-593		

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