

# DET62D

## Digital Earth Tester



- Weatherproof case, protection to IP54
- Three terminal measurement for earth electrode testing
- Simple, fully automatic operation
- Digital display
- Noise rejection to 40 V
- High tolerance to spike resistance helps testing in urban areas

### DESCRIPTION

The Megger® DET62D is a fully automatic, three terminal instrument built into a rugged, water resistant case giving protection for outdoor use. The instrument is suitable for the testing of single earth electrodes such as lightning conductors and other small earthing systems. The resistance of conductors such as conduit coupling joints can also be measured.

Earth resistance can be measured directly from 100 mΩ to 2 kΩ. The earth resistance reading is displayed quickly and accurately on a large, clear 3 1/2 digit Liquid Crystal Display. LEDs indicate when there is a high auxiliary current spike or voltage probe resistance which may affect the earth resistance measurement.

The instrument uses the three-terminal method of measurement in which the 'X' terminal is connected to the electrode under test and the 'C' and 'P' terminals are connected to temporary, remote current and potential electrodes. Operation is started by pushing a button on the front panel. All other functions of the DET62D are completely automatic. The instrument checks for conditions that may cause an invalid reading during a test. The low service error and wide operating temperature range enable accurate results to be achieved in real on-site conditions.

The test frequency has been chosen to avoid interference from stray currents at power frequencies and their harmonics. An LED indicates when the noise interference is too high to take a valid reading.

Six 1,5 V AA dry cells provide power for the DET62D allowing 700 typical 15 second tests. A low battery symbol on the display gives an indication of battery condition.

The instrument is built into a small, lightweight case that has been designed for outdoor use and has IP54 protection. Three large terminals allow either spade or hook connectors, 4 mm plugs or bare ended wire to be used for the test leads. A terminal shorting bar is provided for continuity testing. A removable cover allows access to the battery compartment.

### APPLICATIONS

Earth electrode testing is an important part of electrical installation and maintenance procedure. The DET62D can be used by the electrical contractor or maintenance engineer to check the effectiveness of many types of earth electrode or earth electrode systems or for measuring the resistance of conductors.

The DET62D digital earth tester is a reliable instrument able to measure the earth resistance of simple electrode systems. It may be used to test in accordance with BS7430 (1991), BS6651 (1992), BS7671 (the 16th Edition of the IEE wiring regulations), IEC364, the French specification NFC15-100 and the German specification VDE 0413 part 7 (1982).

The direct indication of excessive noise and high spike

resistances avoids measurement errors, lengthy testing of these parameters. The direct digital reading is unambiguous, avoids errors and assists in faster, more economic testing.

Earth testing kits which including suitable test spikes and test leads are available, is the detailed publication "A Simple Guide to Earth Testing" which describes the various methods of earth testing.

## FEATURES AND BENEFITS

- Simple to use, one touch operation
- Auto switch off to save battery power
- Rugged, weatherproof case
- Large, clear LCD
- Indicators show if reading may be invalid
- Terminal shorting bars supplied
- Earth testing kits available
- Optional carrying case and harness

## SPECIFICATIONS

### Earth Resistance Ranges (Autoranging)

**200  $\Omega$  Range:** 0,1  $\Omega$  to 199,9  $\Omega$

**2 k $\Omega$  Range:** 0,001 k $\Omega$  to 1,999 k $\Omega$

### Accuracy (at 23°C)

$\pm 2\%$  of reading  $\pm 3$  digits

### Total service error

$\pm 5\%$  of reading  $\pm 3$  digits

### Display

31/2 digit LCD with  $\Omega$ , k $\Omega$  and low battery voltage indicators. LEDs for high noise, high voltage probe resistance and high current loop resistance

### Test Frequency

128 Hz  $\pm 0,5$  Hz

### Test Voltage

Maximum 50 V peak.

### Test Current

(constant within a range)

**200  $\Omega$  Range:** 1 mA a.c. r.m.s.

**2 k $\Omega$  Range:** 100  $\mu$ A a.c. r.m.s.

### Potential Circuit Interference

Voltages of 40 V pk to pk at 50 Hz, 60 Hz, 200 Hz or 162/3 Hz in the potential circuit will have an effect of typically 1% on the reading in the 20  $\Omega$  to 2 k $\Omega$  ranges. If the 'NOISE' light is not showing, the maximum error due to noise voltage on these ranges will not exceed 2%. In the 20 k $\Omega$  range the allowable noise is reduced to 32 V pk to pk.

### Current Loop Interference

Voltages of 60 V pk to pk, 50 Hz, 60 Hz, 200 Hz or 162/3 Hz in the current loop will have a maximum effect of 1% on the reading with minimal current loop resistance.

### Maximum Current Loop Resistance

An additional error of typically 1% will be introduced for current loop resistances of:-

**20  $\Omega$  Range:** 4 k $\Omega$

**2 k $\Omega$  Range:** 40 k $\Omega$

If the 'Rc' light is not showing, the maximum error will not exceed 2%.

**Note:** with minimal current loop interference.

The instrument will indicate if a combination of current loop interference and resistance are likely to cause an error in the reading.

### Maximum Voltage Probe Resistance

An additional error of typically 1% will be introduced for a voltage probe resistance of 75 k $\Omega$ .

If the 'Rp' light is not showing, the maximum error will not exceed 2%.

### Terminals

Binding posts suitable for 4 mm plugs, bare ended wire and spade adaptors.

### Instrument Protection

IP54

### Power Supply

6 x 1,5 V (AA) IEC LR6 cells giving 700 typical 15 s tests at 20°C (68°F).

**Safety**

The instrument meets the requirements of IEC1010-1 (1992), EN61010-1 (1993).

**EMC**

In Accordance with IEC61326 including Amendment No. 1

**Dimensions**

243 mm x 161 mm x 70 mm  
(9,4 in x 6 in x 2,75 in approx.)

**Weight**

0,82 kg (1.5 lb approx.)

**Voltage Withstand**

240 V a.c. between any two terminals.

**Temperature Range**

**Operating:** -20°C to +45°C (-4 to 113°F)

**Storage:**

(without batteries) -40°C to +70°C (-40 to 158°F)

**Temperature Coefficient**

± 0,1% per °C (0,05%/-°F) over the temperature range -15°C to +45°C (5 to 113°F)

**Humidity**

**Operating:** 90% RH max. at 45°C (113°F)

**Storage:** 70% RH max. at 55°C (113°F)

**ORDERING INFORMATION**

Item	Order Code.	Item	Order Code.
Three terminal Digital earth tester	DET62D	Three terminal Earth testing kit	6210-160
<b>Included Accessories</b>		Comprising carrying bag containing:	
Operating Instructions	6172-047	Two push-in galvanised steel spikes 10 mm circular section, 450 mm long	
Terminal Shorting bar		3 m, 15 m and 30 m of cable on a winder	
<b>Optional Accessories</b>		Four terminal/longer lead Earth testing kit	6210-161
Carrying case	6420-103	Comprising carrying bag containing:	
Instrument Carrying Harness	6220-537	Four push-in galvanised steel spikes	
Publication; 'Getting Down to Earth'	AVTM25-TA	10 mm circular section, 450 mm long	
		3 m, 15 m, 30 m and 50 m of cable on a winder	

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