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PRECISION INSTRUMENTATION

TEST & MEASUREMENT  
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## DATASHEET

Issue 1

**NEW  
PRODUCT**



Multifunction Meters  
Transducers & Isolators  
Temperature Controllers  
Converters & Recorders  
Digital Panel Meters  
Current Transformers  
kWh Energy Meters  
Analogue Panel Meters  
Shunts  
Digital Bargraphs  
Digital Multimeters  
Protection Relays  
Synchroscope Series  
Rotary Switches  
Power Supplies  
Test & Measurement



# EARTHLITE

## DIGITAL EARTH RESISTANCE TESTER

**SUBJECT TO CHANGE WITHOUT NOTICE**

This datasheet superseded all previous versions – please keep for future reference

#### Product Features:

- Two-Pole Earth Resistance Measurement
- Three-Pole Earth Resistance Measurement
- High Interference & Noise Rejection (up to 50 Vpp)
- Earth Voltage Measurement (up to 450V AC)
- Backlight LCD Display
- Display HOLD Function
- Built-in Volatile Memory (Storage of 50 Readings)
- Overload Protection (OL Indication)
- Battery Level Indicator
- Rugged Handheld Design
- Runs on Standard AAA Alkaline Batteries
- Auto Power-Off Function

## EarthLite Digital Earth Resistance Tester



### Overview

EarthLite Digital Earth Tester is a high-performance instrument designed for accurate verification and evaluation of electrical earthing installations. It enables reliable testing using Two-Pole and Three-Pole earth resistance measurement methods, ensuring precise assessment of grounding system quality in real field conditions.

In addition to resistance testing, EarthLite also measures Earth Voltage, allowing users to verify site voltage conditions before conducting earthing tests, preventing hazards and ensuring safe operation. Trusted by electricians, commissioning engineers, maintenance professionals, and electrical contractors, EarthLite is a compact, rugged, and essential tool for modern electrical testing and safety assurance.

### Product Features

#### Two-Pole Earth Resistance Measurement

Enables quick and convenient measurement of earth resistance using only two terminals, suitable for checking earth pits without disconnecting wiring.

#### Three-Pole Earth Resistance Measurement

Provides accurate earth resistance measurement using auxiliary electrodes (P & C stakes) for precise site testing as per standard testing methodology.

#### High Interference & Noise Rejection (up to 50 Vpp)

Advanced filtering and signal processing allow reliable measurements even in high electrical noise environments, ensuring stable readings on live industrial sites.

#### Earth Voltage Measurement (Up to 450V AC)

Measures ground-to-neutral voltage to verify installation safety, detect leakage, and monitor system health before conducting earth resistance testing.

#### Backlight LCD Display

Bright backlight display ensures clear visibility of readings in low-light conditions such as basements or outdoor night testing.

#### Display HOLD Function

Enables users to capture and review stable readings without maintaining probe contact, improving ease of use and safety.



## Product Features Continued

### **Built-in Volatile Memory (Storage of 50 Readings)**

Can store up to 50 test results in memory, enabling easy analysis, review, and documentation without needing to re-test.

### **Overload Protection (OL Indication)**

Automatic protection up to 1.2 times the measuring range (10 sec), safeguarding the instrument from accidental excessive voltage/current exposure..

### **Battery Level Indicator**

Real-time battery level display helps prevent unexpected shutdowns during testing and supports planned field operations.

### **Rugged Handheld Design**

Compact, portable, and firm-grip ergonomic enclosure designed for tough field environments.

### **Runs on Standard AAA Alkaline Batteries**

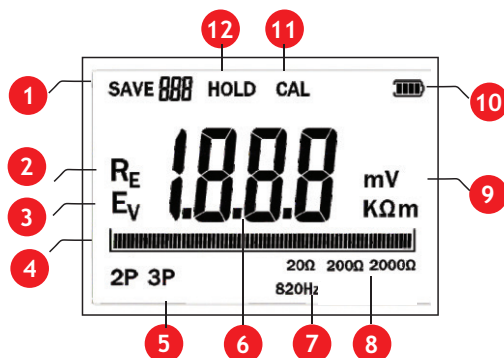
Powered by 6 × 1.5 V AAA alkaline batteries, ensuring easy availability and long field runtime.

### **Auto Power-Off Function**

Automatically switches off after 2 minutes of inactivity to conserve battery life.

## Technical Specifications:

|                                               |                                                                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Earth Resistance Measurement (2P / 3P)</b> |                                                                                                                                               |
| Measurement Range :                           | 20 $\Omega$ , 200 $\Omega$ , 2000 $\Omega$                                                                                                    |
| Resolution :                                  | 0.01 $\Omega$ (20 $\Omega$ ),<br>0.1 $\Omega$ (200 $\Omega$ ),                                                                                |
| Test Current Injection :                      | 3.3 mA @20 $\Omega$ range,<br>1.9 mA @200 $\Omega$ range,<br>1.9 mA @2000 $\Omega$ range.                                                     |
| Test Frequency :                              | 820Hz                                                                                                                                         |
|                                               | Accuracy : $\pm(1.5\%$ of reading<br>+ 10 digits) @ 20 $\Omega$ ,<br>$\pm(1.5\%$ of reading<br>+ 5 digits) @ 200 $\Omega$ , @ 2000 $\Omega$ . |
| Open Circuit Voltage :                        | Max. 47 V                                                                                                                                     |
| Measuring time :                              | 10 seconds                                                                                                                                    |
| Interference Rejection :                      | 50 Vpp                                                                                                                                        |
| Overload Indication :                         | "OL" is displayed                                                                                                                             |
| <b>Earth Voltage Measurement</b>              |                                                                                                                                               |
| AC Voltage Range :                            | Up to 450 V AC                                                                                                                                |
| Accuracy :                                    | $\pm(1.5\%$ of reading<br>+ 5 digits)                                                                                                         |
| Resolution :                                  | 0.1 V (199.9 V), 1 V (450 V)                                                                                                                  |
| Measuring Frequency :                         | 50/60Hz                                                                                                                                       |
| Overload Indication :                         | "OL" is displayed                                                                                                                             |
| <b>Environmental Specifications</b>           |                                                                                                                                               |
| Operating Temperature :                       | -5 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$                                                                                               |
| Storage Temperature :                         | -30 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$ (without Battery)                                                                            |
| Relative Humidity :                           | Up to 85% RH (non-condensing)                                                                                                                 |
| Temp Coefficient :                            | $\pm 1\%$ of applicable accuracy<br>per 10 $^{\circ}\text{C}$                                                                                 |
| <b>Power Supply</b>                           |                                                                                                                                               |
| Battery :                                     | 6 x AAA Standard Size                                                                                                                         |
| Battery type :                                | 1.5V Alkaline Batteries                                                                                                                       |
| Service Life :                                | Typically 10 sec * 1200 Operation                                                                                                             |
| <b>Mechanical Specification</b>               |                                                                                                                                               |
| Dimensions (W x H x D) :                      | 97 mm x 205 mm x 45 mm                                                                                                                        |
| Weight :                                      | ~495 g (with batteries)                                                                                                                       |
| Enclosure Protection :                        | IP 40                                                                                                                                         |
| Connector Protection :                        | IP 20                                                                                                                                         |
| Case :                                        | Rugged Portable Handheld Device                                                                                                               |
| <b>Display</b>                                |                                                                                                                                               |
| Display Type :                                | 3½ Digit LCD with Back light                                                                                                                  |
| Main Character Height :                       | 17.53 mm                                                                                                                                      |
| Sub-Character Height :                        | 6.61 mm                                                                                                                                       |
| Display Count :                               | 1999 (as per Mode & range)                                                                                                                    |



|                                                                             |                               |
|-----------------------------------------------------------------------------|-------------------------------|
| 1. SAVE / LOAD Indication                                                   |                               |
| 2. Earth Resistance Indication ( $R_E$ )                                    |                               |
| 3. Earth Voltage Indication ( $E_V$ )                                       |                               |
| 4. Analog Bar Graph                                                         |                               |
| 5. Measurement Mode & Probe Method Selection                                |                               |
| 6. Measured Value Display                                                   |                               |
| 7. Test Signal Frequency                                                    |                               |
| 8. Selected Measurement Range                                               |                               |
| 9. Measurement Units                                                        |                               |
| 10. Battery Status Indicator                                                |                               |
| 11. Calibration Mode (CAL)                                                  |                               |
| 12. Display HOLD Indication                                                 |                               |
| <b>Safety &amp; Compliance</b>                                              |                               |
| Safety Standard :                                                           | IEC 61010-1                   |
| EMC Compliance :                                                            | IEC 61326-1                   |
| Performance Standards :                                                     | IEC 61557-1,<br>IEC 61557-5   |
| Pollution Degree :                                                          | 2                             |
| Measurement Rating :                                                        | CAT III 600 V<br>CAT IV 300 V |
| Ingress Protection :                                                        | IP40 as per IEC 60529         |
| CE Certification :                                                          | Yes                           |
| <b>Included Accessories</b>                                                 |                               |
| Earth Spikes 10mm dia. Length 250mm :                                       | 2 Nos                         |
| Simple Test Lead with Alligator Clips (double plugs x 1, single plug x 1) : | 1 Nos                         |
| Red Test Lead 20m :                                                         | 1 Nos                         |
| Yellow Test Lead 10m :                                                      | 1 Nos                         |
| Green Test Lead 10m :                                                       | 1 Nos                         |
| AAA Batteries (Alkaline) :                                                  | 6 Nos                         |
| User Manual :                                                               | 1 Nos                         |
| Carrying Bag :                                                              | 1 Nos                         |
| <b>Optional Accessories</b>                                                 |                               |
| Earth Spikes 10mm dia. Length 450mm :                                       | 2 Nos                         |
| Hammer :                                                                    | 1 Nos                         |
| <b>Order Code</b>                                                           |                               |
| <b>DET1-EL00345000000</b> - EARTHLITE 3mA AC 450V                           |                               |

**Note:** The stated measurement accuracy is applicable when the instrument is used with the standard probes supplied by the manufacturer and under specified reference conditions.

## Contact



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