

# Ground Resistance Tester Model 3640 & 3640 Kits



Model 3640 shown in  
standard soft carrying case  
Catalog #2114.92



The Digital Ground Resistance Tester Model 3640 performs ground resistance measurement. This direct reading tester measures from 10mΩ to 1999Ω and is Auto-Ranging, so it automatically seeks out the optimum measurement range. Easy to use – simply connect the leads, Press-to-Measure and read.

The large LCD (nearly 3/4" high) is easy to read, and also indicates low battery status, overrange and lead reversals. The Model 3640 comes with 3 color-coded terminals to aid in easy hookup.

Three LED indicators on the front panel continuously warn the user of any measurement problems to ensure accurate and reliable tests.

The Model 3640 is fuse protected up to >250VAC to protect the instrument against voltage into the test leads. In the event of a system fault, it can withstand 250VAC with spikes of 3000VAC or 1000VDC.

The heavy duty ABS case is O-ring sealed against dust and water and the Press-to-Measure button is also sealed. Model 3640 is battery powered,

for convenient use in remote field applications. Mechanical and safety specifications, such as vibration and drop test, meet or exceed IEC standards, to ensure safe and reliable field use.

Ground Resistance Tester Model 3640 is a rugged, easy-to-use instrument ideal for maintenance crews performing numerous tests. The Model 3640 is designed to reject high levels of interference, therefore it can be used under difficult conditions such as high stray currents that normally affect measurement accuracy.

## Features

- Fall-of-Potential method
- Measures ground resistance (2- and 3-Point)
- Auto-Ranging: automatically selects the optimum range
- Designed to reject high levels of noise and interference
- Extremely simple to operate: connect – press – read
- LED on faceplate informs operator of high input noise, high auxiliary rod resistance and fault connections
- Battery powered
- Rugged dustproof and rainproof field case
- Color-coded terminals
- May also be used for continuity tests on bonding
- Double Insulation
- CE Mark

## Applications

- Three-point measurements for measuring resistance to ground of ground rods and grids. Three-point measurements are generally used when the electrode or grid is easily disconnected, if corrosion is suspected, or where ground faults are unlikely to occur.
- Two-point tests for continuity tests on bonding or on pre-established grounds. This test is commonly performed in urban environments where proper auxiliary electrode placement may be obscured by confined real estate. Measurements are referenced against a good local ground conductor.

## Ground Kits

*Test Kit for 3-Point testing includes instrument, two 150 ft color-coded leads on spools (red and blue), one 30 ft lead (green), two 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.*  
**Catalog #2135.13**



*Test Kit for 4-Point testing includes instrument, two 300 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), four 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.*  
**Catalog #2135.14**

*Test Kit for 4-Point testing includes instrument, two 500 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), one 30 ft lead (green), four 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.*  
**Catalog #2135.15**



## Specifications

ELECTRICAL			
Range (Auto-Ranging 0 to 2000Ω)	20Ω	200Ω	2000Ω
Measurement	0.00 to 19.99Ω	20.0 to 199.9Ω	200 to 1999Ω
Resolution	10mΩ	100mΩ	1Ω
Open Voltage	≤42V peak		
Resistance Measurement Frequency	128Hz square wave		
Test Current	10mA	1mA	0.1mA
Accuracy	±2% of Reading ± 1ct	±2% of Reading ± 1ct	±3% of Reading ± 3cts
Auxiliary Electrode Influence			
Range	20Ω	3kΩ	50kΩ
Current Circuit	200Ω	30kΩ	50kΩ
Voltage Circuit	2000Ω	50kΩ	50kΩ
Interference	Rejects high levels of interference voltage (DC, 50/60Hz, harmonics) DC voltage in series with X 20VAc voltage in series with Y 13V peak AC voltage in series with Z 32V peak		
Response Time	Approximately 6 seconds for a stabilized measurement		
Withstanding Voltage	50VAc with spikes of 3000VAc or 1000Vdc		
Power Source	Eight 1.5V AA batteries; Alkaline recommended; "LO BAT" indication on LCD		
Battery Life	1800 15-second measurements (approximate)		
Fuse Protection	High breaking capacity 0.1A, >250V, 0.25 x 1.25"		
MECHANICAL			
Display	7-segment LCD, 0.71" (18mm) high (3½ digit); 2000-counts; LCD also indicates overrange, test lead shorts and lead reversals		
Connection	Color-coded terminals accept spade lugs with min. gap of 6mm or standard 4mm banana jacks		
LED Indication	3 LEDs indicate high input noise, high auxiliary rod resistance, open leads, blown fuse		
Operating Temperature	14° to 131°F (-10° to 55°C), 0 to 90% RH		
Storage Temperature	-40° to 158°F (-40° to 70°C), 0 to 90% RH with batteries removed		
Dimensions	8.7 x 5.4 x 5.9" (220 x 136 x 150mm)		
Weight	2.9 lbs (1.3kg)		
Case	Heavy-duty ABS		
Colors	Case safety yellow; Front panel gray		
Mechanical Shock	IEC 68-2-27		
Vibration Test	IEC 68-2-6		
Drop Test	IEC 68-2-32		
Dielectric Test	3kV, 50/60Hz, 1min. between four interconnected measuring terminals and any external metal ground		
Environmental	O-ring sealed against dust and water to IP50 (Protection Index)		
Electrostatic	IEC 801-2		
Electromagnetic	IEC 801-3		
Electric Shock	IEC 801-5		
SAFETY			
Rating	EN 61010-1, Cat III., Pollution Degree 2, 42V		
Agency Approval	Emission (EN 50081-1) Immunity (EN 50082-1)		
Double Insulation <input type="checkbox"/>	Yes		
CE Mark	Yes		

Accuracies and specifications are given for an ambient temperature of 23°C ± 3°K, RH of 45 to 55%, battery power at 8V, auxiliary resistance at the measurement terminals < 200Ω, no stray voltage and a magnetic field from 0 to 40A/m.

# Construction



Press-to-Measure button

Input terminals

Large LCD with low battery indicator

LED measurement fault indicators:  
 X-Z Fault  
 Xv-Y Hi Resistance  
 Xv-Y Hi Noise

## ORDERING INFORMATION

## CATALOG NO.

<b>Ground Resistance Tester Model 3640 (3-Point Digital)</b> . . . . .	<b>Cat. #2114.92</b>
Includes batteries, soft carrying case and user manual	
<b>Ground Resistance Tester Model 3640 Kit.</b> . . . . .	<b>Cat. #2135.13</b>
Test Kit for 3-Point testing includes meter, two 150 ft color-coded leads on spools (red and blue), one 30 ft lead (green), two 14.5" T-shaped auxiliary ground electrodes, one set of five fork terminals, 100 ft tape measurer and carrying bag	
<b>Ground Resistance Tester Model 3640 Kit.</b> . . . . .	<b>Cat. #2135.14</b>
Test Kit for 4-Point testing includes two 300 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), four 14.5" T-shaped auxiliary ground electrodes, one set of five fork terminals, 100 ft tape measurer and carrying bag.	
<b>Ground Resistance Tester Model 3640 Kit.</b> . . . . .	<b>Cat. #2135.15</b>
Test Kit for 4-Point testing includes two 500 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), one 30 ft lead (green), four 14.5" T-shaped auxiliary ground electrodes, one set of five fork terminals, 100 ft tape measurer and carrying bag.	
<b>Accessories (Optional)</b>	
25Ω Calibration Checker . . . . .	Cat. #2130.59
Tape Measure (100 ft) . . . . .	Cat. #2130.60
Ground Tester Video/Workbook set . . . . .	Cat. #2130.64

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