

Ground Resistance Tester Model 3640 & 3640 Kit



Model 3640 Kit (optional)
Catalog #2114.93



The Digital Ground Resistance Tester Model 3640 performs ground resistance measurement. This direct reading tester measures from $10\text{m}\Omega$ 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 $\frac{3}{4}$ " 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 $>250\text{VAC}$ 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.

The Ground Resistance Tester Model 3640 is available alone or as a complete kit. The kit includes T auxiliary ground electrodes, 16 ft leads, and two 150 ft leads on reels with wind-up handles to facilitate storage, packed in a molded hard carrying case.



Model 3640 shown in
standard soft carrying case
Catalog #2114.92

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

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.

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)		
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.

Accessories



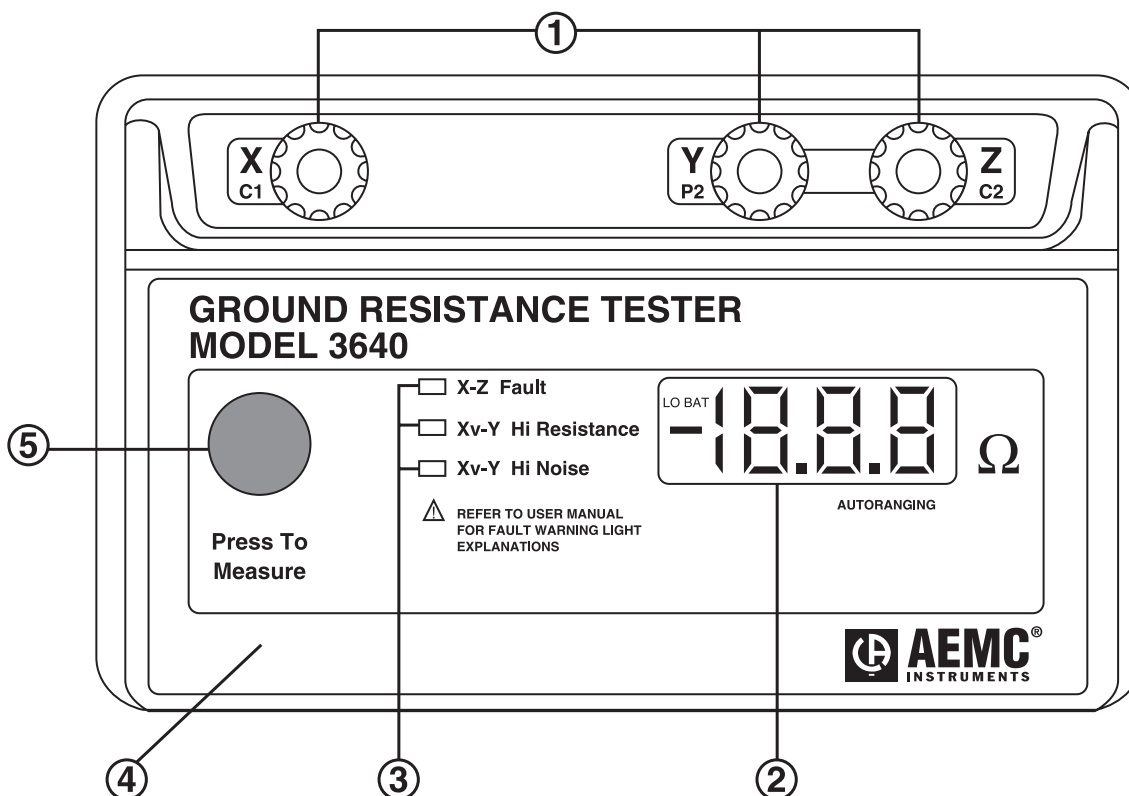
Digital Ground Resistance Tester
Model 3640 Kit Catalog #2114.93



25Ω Calibration Checker
Catalog #2118.58



Test Kit for Model 3640 includes one 16 ft lead,
two 150 ft leads on spools, two wind-up handles, two auxiliary
ground electrodes and molded hard carrying case with slot for meter
Catalog #2114.96



1. Input terminals
2. Large LCD with low battery indicator
3. LED measurement fault indicators
Model 3640 LED Indicators
 X-Z Fault:
 LED signals that there is excessive (>30V peak) voltage between terminals X and Z.
 X-Y High Resistance:
 LED signals that the resistance in the voltage circuit (between X and Y) is too high or that the circuit may be open.
 X-Y High Noise:
 LED signals the presence of excessive noise in the voltage circuit.
4. Front panel sealed to IP50
5. Rugged Press-to-Measure button

ORDERING INFORMATION

CATALOG NO.

Ground Resistance Tester Model 3640 (3-Point Digital)	Cat. #2114.92
Includes batteries, soft carrying case and user manual	
Ground Resistance Tester Model 3640 Kit	Cat. #2114.93
Includes meter, one 16 ft lead, two 150 ft leads on spools with wind-up handles, two auxiliary ground electrodes, molded hard carrying case, batteries and user manual	
Accessories (Optional)	
25Ω Calibration Checker	Cat. #2130.59
Tape Measure (100 ft)	Cat. #2130.60
Test Kit for 3-Point Testing (supplemental for 4-Point testing) includes two 100 ft color-coded leads, one 16 ft lead, two 16" T-shaped auxiliary ground electrodes and carrying case	Cat. #2130.61
Test Kit for 3-Point Testing includes two 150 ft color-coded leads on spools, one 16 ft lead, two 16" T-shaped auxiliary ground electrodes, 100 ft AEMC tape measure and carrying case	Cat. #2130.62
Test Kit for 4-Point Testing includes two 300 ft color-coded leads on spools, two 100 ft color-coded leads, one 16 ft lead, four 16" T-shaped auxiliary ground electrodes, 100 ft AEMC tape measure and carrying case.	Cat. #2130.63
Ground Tester Video/Workbook set.	Cat. #2130.64

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