

CLAMP-ON GROUND RESISTANCE TESTER MODELS 3710/3730



- Measure ground rod and small grid resistance
- Use in multi-grounded systems without disconnecting the ground under test
- Measure resistance and continuity of grounding loops around pads and buildings
- Measure leakage current flowing to ground or circulating in ground loops
- Conduct quick field checks
- Conduct field surveys and retrieve and analyze readings at a later time
- UL, CSA listed and CE Mark



Ground Resistance Tester Models 3710 and 3730

Measure ground rod and small grid resistance in any environment without the use of auxiliary ground rods. Clamp-on ground resistance testers are used in multi-grounded systems without disconnecting the ground under test. The Models 3710 and 3730 simply clamp around the ground conductor or rod and measure the resistance to ground. By performing measurements on intact ground systems, the user also verifies the quality of the grounding connections and bonds. Resistance and continuity of grounding loops around pads and buildings may also be measured.

Both models include a current measurement function. The probe's high sensitivity enables measurement of leakage current flowing to ground or circulating in ground loops down to 1mA and neutral currents to 30Arms. This feature provides additional information which is becoming vital as distribution ground networks carry higher levels of noise and harmonics which affect power quality.

The Model 3730 offers an alarm function and a memory (logging) function. In the alarm mode, the probe will audibly and visually indicate if the reading is beyond an input set point. The user may also have the alarm initiated above or below the set point. This alarm feature permits quick field checks where only "pass" or "fail" readings will suffice.

Features

- Simple and fast clamp-on operation - no leads, no auxiliary rods or spacing requirements
- Direct reading of ground resistance from 1Ω to 1200Ω
- Direct reading of continuity and ground loop resistance
- Direct reading of ground leakage current from 1mA to 30Arms
- Jaw design with large 1.25" (32 mm) window accommodates up to 1000 MCM cables
- Auto-off for power management
- Alarm function with adjustable set point and buzzer for quick field checks
- Memory function to store 99 field measurements for later retrieval and analysis
- UL, CSA and GS listed, meets IEC 1010-2-032 and CE marked.
- Alarm settings and stored memory information saved during shutdown
- US Patent No. 362,639



Product Construction

The Models 3710 and 3730 bodies are built of Lexan® or equivalent for rugged use. The probe heads are encapsulated in a double-walled shell for extra strength and reinforced for enhanced field reliability. Overall construction and mechanical design ratings such as drop test, shock and vibration, weatherproofing against water projections or dust, meet or exceed IEC-1010 Cat. III standards. These products have also been designed to meet UL, CSA and GS safety approvals, and are CE marked.



The probe head, or jaw, is a key component in the measurement and overall product performance.

The large jaw thickness permits use on tight ground conductors on poles and in manholes. The 1.25" (32 mm) opening accommodates not only ground rods, but larger ground conductors (up to 1000 MCM) typically found in telecommunication buildings or railroad applications.

The inner jaw is composed of two independent and individually shielded magnetic cores permitting measurement without noise interference or cross talk common to separate probe instruments.

Functions & Features

	3710	3730
Ohms Range	YES	YES
Amperes (TRMS) Range	YES	YES
Hold Function	YES	YES
Self Test @ Power Up	YES	YES
Auto Off	YES	YES
LCD Battery Life Indicator	YES	YES
LCD Noise Indicator	YES	YES
LCD Open Jaw Indicator	YES	YES
LCD Closed Loop Indicator	YES	YES
Multi-Tone Beeper	YES	YES
Alarm Function	—	YES
Memory (Logging) Function	—	YES

Thorough mechanical design, including small winglets, ensures repetitive jaw alignment for accuracy and prevents undesirable insertions into the jaw spring assembly.

The ergonomic body design permits one-handed operation. The guard provides additional strength, and prevents the hand from slipping or coming into contact with conductors under test. The LCD lens cover may be easily replaced if scratched. The sealed push-buttons directly access all test functions and are easily operated even with gloved hands.

Overview of Functions



- 8.8.8.8 3,000 count display
- Ω Displayed when measuring resistance
- mA, A Displayed when measuring current
- 100% Percentage of battery life remaining
- Flashing indicates low battery condition
- Indicates the auto-off feature is inactive
- HOLD** HOLD pushbutton has been pressed
- Active beeper function
- NOISE** Noise in the reading
- Probe jaws not closed properly
- Alarm set points
- MEM** Memory function active
- MR 88** Memory Recall (MR) and register
- R<1Ω** Resistance measured is below 1Ω

Buttons



On/Off

Power ON or power OFF. Activates display self test at power-up.

Ω (▶)

Resistance measurement. (Adjusts the alarm set point and the memory position when in programming mode.)

A (◀)

Current measurement. (Adjusts the alarm set point and the memory position when in programming mode.)

AL (Model 3730)

Activate/deactivate the alarm function. Accesses the value of the alarm setpoint when in programming mode.

MEM (Model 3730)

Activate the memory function or read the stored values in MR (Memory Recall). Clears the memory when in programming mode.

Specifications

ELECTRICAL

Resistance Measurement Frequency:
1.689kHz

Current Measurement Frequency:
47 to 800Hz

Current Overload:
OL displayed above 30Arms

Power Supply: 9V Alkaline battery
(IEC 6LF22 or NEDA 1604A)

Battery Life: typical: 8 hours or approx.
1,000 measurements of 30 seconds

SAFETY

UL, CSA, GS Listed

IEC 1010-2-032 Double Insulation

Environmental: IP30, IEC 359 Group III

Vibration Test: IEC 68-2-6

Shock Test: IEC 68-2-27

Drop Test (1m): IEC 68-2-32

Dielectric Test: 2500VAC

Working Voltage:

IEC1010 150V, Cat. III - Pollution Degree 2
IEC1010 300V, Cat. III - Pollution Degree 1

Max Overload (A or Ω Function):

100A continuous, 200A (<5s) 50/60Hz

MECHANICAL

Dimensions: 9.25" x 3.94" x 2.17"
(235 mm x 100 mm x 55 mm)

Weight: 2.2 lbs. (1 kg)

Case Material: Lexan® 920A (UL94V2)

GROUND RESISTANCE			
Measurement Range	Range	Resolution	Accuracy*
Autoranging 1.0 to 1200Ω	1.0 to 50.0Ω	0.1Ω	± (1.5% + 0.1Ω)
	50.0 to 100.0Ω	0.5Ω	± (2.0% + 0.5Ω)
	100 to 200Ω	1Ω	± (3.0% + 1Ω)
	200 to 400Ω	5Ω	± (6.0% + 5Ω)
	400 to 600Ω	10Ω	± (10% + 10Ω)
	600 to 1200Ω	50Ω	n/a
GROUND OR LEAKAGE CURRENT			
Autoranging 1mA to 30.00 Arms	1 to 300mA	1mA	± (2.5% + 2mA)
	0.300A to 3.000A	0.001A	± (2.5% + 2mA)
	3.00A to 30.00A	0.01A	± (2.5% + 20mA)

* Reference conditions: 23°C ± 3K, 50% RH ± 10%, battery at 8V ± 0.2V, external magnetic field < 40 A/m, external electrical field < 1 V/m, conductor centered, loop resistance noninductive. Accuracy % of reading.

Jaw Cover Material: Lexan® 500R with
10% fiberglass charge (UL94V0)

LCD Cover Material:
Lexan® 920A (UL94V1)

Color: Gray body, red jaws

Jaw Window Diameter: 1.25" (32 mm)

Jaw Opening: 1.38" (35 mm)

Operating Temperature:
14°F to 131°F (-10° to 55°C)

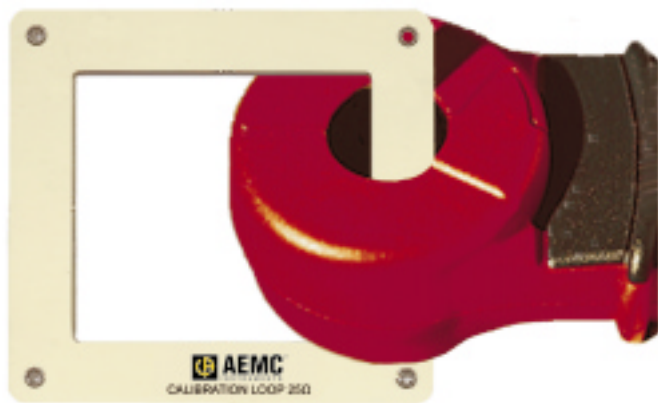
Operating Humidity: 0 to 90% RH @
14°F to 104°F (-10°C to 40°C),
75% RH @ 131°F (55°C)

Storage Temperature:
-40°F to 158°F (-40°C to 70°C)

LCD: 3 3/4 Digit, 1.73" x 1.10" (44 x 28 mm)

U.S. Patent: No. 362,639

NSN: 6625-01-377-8030



Calibration Check Loop (included)



Carrying Case (included)

ORDERING INFORMATION

CATALOG NO.

Clamp-on Ground Resistance Tester Model 3710 **Cat. #1221.01**
includes hard carrying case, 9V Alkaline battery, 25Ω calibration check loop, and user manual

Clamp-on Ground Resistance Tester Model 3730 **Cat. #1221.02**
includes hard carrying case, 9V Alkaline battery, 25Ω calibration check loop, and user manual

Call the AEMC® Instruments Technical Assistance Hotline for immediate consultation with an applications engineer: (800) 343-1391
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