



ERT-50R

Double Clamp Multifunctional Earth Tester Kit



Stakes or Clamps, Whichever the Site Allows.

A twelve-position switch covers every earth resistance method in current use. Precision four-wire for grid measurements where lead and contact resistance would otherwise sit in the reading, three-wire fall-of-potential for routine verification, simple two-wire where only one spike can be driven, and DC resistance on the two and four-wire positions for bonding and continuity checks.

Beyond those, two methods that need no disconnection. The selection method uses one clamp with the stakes in place to read a single electrode inside a connected system. The double clamp method uses both clamps and no stakes at all, measuring the loop resistance of a multi-grounded system from 0.01 to 100 Ω , which is how you test inside a building, up a pylon or anywhere there is no soil to drive into.

Soil resistivity by the Wenner four-pole method, earth voltage to 750 V AC, and earth current to 600 A through the supplied transformers complete the set. A 250 mA test current with FFT analysis and automatic frequency control holds readings steady on live sites, and the whole instrument is sealed to IP65 with the lid closed.

KEY FEATURES

- 2, 3 and 4-wire, selection and double clamp methods
- Stakeless double clamp measurement, 0.01 to 100 Ω
- 0.000 Ω to 300.00 k Ω · 0.001 Ω resolution
- Soil resistivity by the Wenner four-pole method
- Earth current to 600 A on the supplied clamps
- 250 mA test current with FFT and AFC
- IP65 case · 2000-group memory · USB and Bluetooth

IDEAL FOR

- Multi-grounded systems, tested without disconnection
- Substation and distribution earth grids
- Lightning protection system verification
- Soil resistivity surveys for earthing design
- Telecoms, rail, renewables and oil and gas sites

MEASUREMENT RANGES

Range	Accuracy	Resolution	Method
Earth resistance and DC resistance · 2 / 3 / 4-wire · AFC selects 128, 111, 105 or 94 Hz			
0.000 to 9.999 Ω	±(2% rdg + 0.05 Ω)	0.001 Ω	2, 3 or 4-wire
10.00 to 29.99 Ω	±(2% rdg + 5 digits)	0.01 Ω	2, 3 or 4-wire
30.0 to 299.9 Ω	±(2% rdg + 3 digits)	0.1 Ω	2, 3 or 4-wire
300 to 2999 Ω	±(2% rdg + 3 digits)	1 Ω	2, 3 or 4-wire
3.00 to 300.00 kΩ	±(4% rdg + 3 digits)	10 Ω	2, 3 or 4-wire
Earth resistance · selection method, one clamp with the stakes in place			
0.000 Ω to 3000 Ω	As the 2 / 3 / 4-wire ranges above	0.001 to 1 Ω	Selection, one clamp
Earth resistance · double clamp, stakeless, on multi-grounded systems			
0.01 to 0.99 Ω	±(10% rdg + 5 digits)	0.01 Ω	Two clamps
1.0 to 29.9 Ω		0.1 Ω	Two clamps
30 to 100 Ω		1 Ω	Two clamps
Soil resistivity · Wenner four-pole · ρ = 2πaR, electrode spacing a from 1 to 100 m			
0.00 to 99.99 Ω·m	Follows the earth resistance accuracy	0.01 Ω·m	Wenner 4-pole
100.0 to 999.9 Ω·m		0.1 Ω·m	Wenner 4-pole
1000 to 9999 Ω·m		1 Ω·m	Wenner 4-pole
10.00 to 99.99 kΩ·m		10 Ω·m	Wenner 4-pole
100.0 to 999.9 kΩ·m		100 Ω·m	Wenner 4-pole
1000 to 9000 kΩ·m		1 kΩ·m	Wenner 4-pole
Earth voltage and earth current			
AC 0.0 to 750.0 V	±(2% rdg + 3 digits)	0.1 V	Average rectification, P(S) to ES
DC 0.0 to 1000.0 V	±(2% rdg + 3 digits)	0.1 V	Average rectification, P(S) to ES
AC 0.00 mA to 600.0 A	±(2% rdg + 3 digits)	0.01 mA	Clamp CT, ϕ70 mm jaw

Earth resistance is measured by the rated-current pole-changing method at AC 250 mA maximum short circuit, sine wave, with an open-circuit test voltage of 40 V AC maximum. Measure earth voltage before resistance: a stray potential in the ground will corrupt a resistance reading. The instrument flags interference above 5 V with a NOISE indication and will not measure until it clears.



WHAT'S IN THE BOX

- ERT-50R double clamp multifunctional earth tester
- Sensing current transformers, two, $\phi 70$ mm jaw, 2 m lead
- Test lead set: 20 m red, 20 m black, 10 m yellow, 10 m green
- Simple test leads: 1.6 m red, 1.6 m black
- Auxiliary earth stakes, four, $\phi 9 \times 230$ mm
- USB communication cable
- Battery charger
- Instruction manual and tool bag

CLAMP LEADS · CT1 and CT2 are not interchangeable: the red-black plug and the blue-black plug go to their own sockets, and the jack indicator lamps confirm each connection

GENERAL SPECIFICATIONS

Code	Item	Part Number
ERT-50R	Double clamp multifunctional earth tester kit, with two clamps, leads and stakes	800350

MEASURES

Earth resistance by 2, 3 and 4-wire, selection and double clamp methods · DC resistance on the 2 and 4-wire positions · soil resistivity by Wenner · earth voltage · earth current

CONTROLS · DISPLAY

12-position rotary switch, one per method · jack indicator lamps at all six terminals · 128 $\times$ 75 mm LCD, 124 $\times$ 67 mm active, 4 digits, backlight, bar graph

MEASUREMENT TIME

About 7 s per earth resistance measurement · about two readings per second on earth voltage and current · more than 5000 measurements per charge

POWER

DC 7.4 V 2600 mAh rechargeable lithium pack, about 8.4 V fully charged · low battery warning at about 7.2 V · 150 mA in measurement, 25 mA standby

SAFETY

IEC 61010-1, CAT III 300 V and CAT IV 150 V, pollution degree 2 · IEC 61010-031 · IEC 61557-1 and 61557-5 · IEC 61326 EMC

DIMENSIONS · WEIGHT

280 $\times$ 260 $\times$ 160 mm · 1.80 kg instrument with battery · about 6.13 kg complete kit

TEST SIGNAL

AC 250 mA maximum short circuit, sine wave · open-circuit 40 V AC maximum · AFC selects 128, 111, 105 or 94 Hz · FFT interference analysis

MEMORY · COMMUNICATION

2000 groups, FULL indication when the store is used up · USB upload for saving, analysis and printing · Bluetooth to an Android app

CURRENT CLAMPS

Two sensing current transformers, $\phi 70$ mm jaw, 2 m lead · marked MAX 600 V CAT III · red-black and blue-black plugs, each to its own socket

PROTECTION

IP65 with the case closed · overload AC 280 V for 3 s across C(H) to E and P(S) to ES · auxiliary earth test 0.00 to 30.00 k Ω

ENVIRONMENT

Operating -10 to 40 $^{\circ}\text{C}$, below 80% RH · storage -20 to 60 $^{\circ}\text{C}$, below 70% RH · auto power off after 15 minutes without operation

WARRANTY

1 year, subject to product registration with GPS LTD · service and calibration available