

Soil Resistivity Meter

RD3021E & RD3022E



RD3021E



RD3022E

Soil Resistivity Meter is specially designed and manufactured for on-site measurement of earth resistance, soil resistivity, earth voltage, AC voltage. Apply digital processing technology, precision 4-wire method, 3-wire method and simple 2-wire method to measure grounding resistance; Adopt FFT (fast Fourier transform) technology, AFC (automatic frequency control) technology, automatic identification of interference and selection of measurement frequency, to minimize the impact of interference, provide more accurate earth resistance value. With unique anti-interference ability and environmental adaptability, high repeated test consistency, ensuring high precision, high stability and high reliability for long-term measurement. The Soil Resistivity Meter case is made of waterproof protection box, anti-collision, anti-drop, waterproof (protection grade IP65), strong and durable, and also equipped with a large-capacity rechargeable lithium battery pack, especially suitable for outdoor construction. Widely used in power, telecommunications, meteorology, oil fields, construction, lightning protection and industrial electrical equipment, such as grounding resistance, soil resistivity, grounding voltage, AC voltage.





Product features

1. The fuselage is light, easy to carry and operate.
2. The large LCD display of host machine, with white backlight and bar graph indicating that can be seen clearly.
3. It can store 300 sets of data,
4. With the functions as historical data access, reading and preservation.
5. The Soil Resistivity Meter case is made of waterproof protection box, anti-collision, anti-drop, waterproof (protection grade IP65), strong and durable.



Product specifications and technical parameters

1. Technical Parameters

Picture		
Model	RD3021E	RD3022E
Power Supply	DC 9V (Alkaline dry battery R14S 1.5V 6PCS)	DC 7.4V 2600mAh rechargeable lithium battery, full of about 8.4V
Auto-shut off		Automatically shut down after 10 minutes
Battery Voltage	While battery voltage decreases to around 7.5V, will display battery voltage low symbol, and reminding to replace the battery	While battery voltage decreases to around 7.2V±0.1V, will display battery voltage low symbol, and reminding to charge
Weight	Tester: 0.95kg	Tester: 4.73kg
	Test wires: 1.56kg	
	Auxiliary ground rods: 0.935kg (4pcs)	
Function	Description	

Function	2/3/4-pole measurement for earth resistance, soil resistivity, earth voltage, AC voltage
Measurement Range	Earth Resistance: 0.00Ω ~ 30.00kΩ
	Soil Resistivity: 0.00Ωm ~ 9000kΩm
	Earth Voltage: 0V ~ 600V
Measurement Mode	Precise 4-pole measurement, 3-pole measurement, simple 2-pole measurement of earth resistance
Measurement Method	Earth Resistance: rated current change-pole method, test current 20mA Max
	Soil Resistivity: 4-pole method (Wenner method)
	Earth Voltage: average rectification (between P(S)-ES)
Test Frequency	128Hz/111Hz/105Hz/94Hz (AFC)
Short-circuit Test Current	AC 20mA max
Open-circuit Test Current	AC 40V max
Test Voltage Wave	Sine wave
Electrode Distance Range	Can be set 1m ~100m
Shift	Earth resistance: 0.00Ω-30.00kΩ, automatic shift
	Soil Resistivity: 0.00Ωm-9000kΩm, automatic shift
Backlight	Controllable white screen backlight, suitable for dim places
Display Mode	4-digital super-large LCD display, white screen backlight
Measurement Indication	During measurement, LED flash indicator, LCD count down display, progress bar indicator
LCD Frame Dimension	128mm×75mm
LCD Display Dimension	124mm×67mm
Meter Dimension	215mm(L)×178mm(W)×83mm(H)
Standard Test Wire	4PCS: each for red 20m, black 20m, yellow 10m and green 10m
Simple Test Wire	2PCS: each for red 1.6m and black 1.6m
Auxiliary Ground Rod	4PCS: Φ10mm×150mm
Measurement Time	Earth Voltage: about 3 times/second
	Earth resistance, soil resistivity: about 15 seconds/time
Measuring Times	Over 5000 times (Short-circuit test, interval time should be at least 30 seconds)
Line Voltage	Below AC 600V measure
Communication Interface	USB interface, software monitoring, storage data can be uploaded to computer, saved, or printed.

Communication Cable	1PCS USB communication cable, length 1.5m
Data Storage	300 groups, “MEM” symbol storage indicator, flash display “FULL” symbol indicate storage full
Data Hold	Data hold function: “HOLD” symbol display
Data Read	Data read function: “READ” symbol display
Overflow Display	Over range overflow function: “OL” symbol display
Interference Test	Recognize interference signal automatically, “NOISE” symbol display when interference voltage exceeds 5V
Auxiliary Ground Test	With auxiliary earth resistance test function, 0.00K Ω -30K Ω (100R+rC<50k Ω , 100R+rP<50k Ω)
Alarm Function	Measurement value exceeds alarm setting value, will “Toot-toot-toot” alarm hint
Working Current	Standby: about 20mA (Backlight close)
	Boot up and open backlight: about 45mA (25mA backlight close)
	Measurement: about 100mA (Backlight close)
Working Temperature & Humidity	-10°C ~ 40°C, below 80%RH
Storage temperature & humidity	-20°C ~ 60°C, below 70%RH
Overload Protection	Measuring earth resistance: between each interfaces of C(H)-E、P(S)-ES, AC 280V/3 seconds
Insulation Resistance	Over 20M Ω (between circuit and enclosure it is 500V)
Withstand Voltage	AC 3700V/rms (Between circuit and enclosure)
Electromagnetic Features	IEC61326(EMC)
Suitable Safety Standard	IEC61010-1 (CAT III 300V、CAT IV 150V、Pollution 2), IEC61010-031, IEC61557-1 (Earth resistance), IEC61557-5 (Soil resistivity)

2. Measurement Range & Accuracy

Model	RD3021E& RD3022E		
Test Function	Range	Accuracy	Resolution
Earth Resistance (R)	0.00 Ω ~ 30.00 Ω	$\pm 2\%rdg \pm 3dgt$	0.01 Ω
	30.0 Ω ~ 300.0 Ω	$\pm 2\%rdg \pm 3dgt$	0.1 Ω
	300 Ω ~ 3000 Ω	$\pm 2\%rdg \pm 3dgt$	1 Ω
	3.00k Ω ~ 30.00k Ω	$\pm 4\%rdg \pm 3dgt$	10 Ω
Soil Resistivity(ρ)	0.00 Ωm ~ 99.99 Ωm	$(\rho = 2 \times \pi \times a \times R$ $a: 1m \sim 100m;$	0.01 Ωm
	100.0 Ωm ~ 999.9 Ωm		0.1 Ωm

	1000Ωm~9999Ωm	$\pi=3.14$)	1Ωm
	10.00kΩm~99.99kΩm		10Ωm
	100.0kΩm~999.9kΩm		100Ωm
	1000kΩm~9000kΩm		1kΩm
Earth Voltage	AC 0.0~600V	$\pm 2\% \text{rdg} \pm 3 \text{dgt}$	0.1V



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