

FR3010E Ground Resistance Soil Resistivity Meter (Simple)



I. Product Introduction

FR3010E grounded resistance soil resistivity tester, also called the four-wire grounding resistance tester or the soil resistivity tester, is a commonly used instrument for measuring grounding resistance. It used a large-size LCD gray-white screen backlight display and microprocessor technology to pass the micrometer, to use microprocessor control 2-wire, 3-wire, 4-wire to test ground resistance and soil resistivity.

FR3010E has many grounding test functions to quickly and comprehensively measure various parameters in the grounded network. It is a new generation grounding measurement instrument that replaces the traditional rocking table measurement. Widely used in telecommunications, electricity, meteorology, computer rooms, oil fields, power distribution lines, iron tower transmission lines, gas stations, factory grounding networks, lightning rods and so on. The instrument has the characteristics of precise, fast, simple, stable and reliable

II. Technical Specification

1. Range and accuracy error


Measurement function	Measurement range	Accuracy	Resolution
Ground resistance(R)	0.00 Ω ~ 30.00 Ω	$\pm 2\%rdg \pm 5dgt$ (remark 1)	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	$\pm 2\%rdg \pm 3dgt$	10 Ω
Soil resistivity (ρ)	0.00 Ωm ~ 99.99 Ωm	$\rho = 2 \pi aR$ (remark 2)	0.01 Ωm
	100.0 Ωm ~ 999.9 Ωm		0.1 Ωm
	1000 Ωm ~ 9999 Ωm		1 Ωm
	10.00k Ωm ~ 99.99k Ωm		10 Ωm
	100.0k Ωm ~ 999.9k Ωm		100 Ωm
	1000k Ωm ~ 9999k Ωm		1k Ωm
Ground voltage	AC 0.00 ~ 600V	$\pm 2\%rdg \pm 3dgt$	0.01V

Remark: 1. Reference condition: Accuracy when $R_h R_s < 100 \Omega$.

Working conditions: $R_h \max = 3k \Omega + 100R < 50k \Omega$; $R_s \max = 3k \Omega + 100R < 50k \Omega$

2. Depending on the measurement accuracy of R, $\pi = 3.14$, a: 1 m ~ 100 m;

2. General specifications

Function	Use 2-wire、3-wire、4-wire test ground resistance、soil resistivity、ground voltage
Ambient Temperature and Humidity	23°C ± 5°C, below 75%rh
Power Supply	1.5V (LR14) Alkaline Battery 6 Section
Interference voltage	<20V (should be avoided)
Interference current	<2A (should be avoided)
Electrode spacing when measuring R	a>5d
Electrode spacing when measuring ρ	a>20h
Auxiliary grounding resistance	Benchmark condition <100 Ω , working condition <5k Ω
Range	Ground resistance :0.00 Ω -30.00k Ω ;
	Soil resistivity:0.00 Ω m-9999k Ω m;
	Ground voltage:0.00V-600V AC ;
Measurement Mode	Precise four-wire、three-wire measurement, simple two-wire measurement test ground resistance
Measurement Method	Grounding resistance: rated current change pole method, test current 20mA Max Soil resistivity: quadrupole; Ground voltage: average value rectification(S-ES interface)
Test Frequency	128Hz
Short Circuit Test Current	AC > 20mA(sine wave)
Open Circuit Test Voltage	AC 28V Max
Electrode Spacing Range	can be set to 1m~100m
Shift	Grounding resistance: 0.00 Ω ~30.00k Ω automatic shifting
	Soil resistivity: 0.00 Ω m~9999k Ω m automatic shifting
Backlight	Controllable gray light backlight, suitable to use in dim place
Display mode	4-bit large LCD display, gray backlight
Measure indication	LED blinking during measurement
LCD Display Field	108mm×65mm
Meter Dimension	L/W/H: 240mm×188mmx85mm
Standard Test Line	4 strips: Red 15m, Black 15m, Yellow 10m, Green 10m, each 1 strip
Easy test line	2 strips: Yellow 1.5m, Green 1.5m each 1 strip
Auxiliary Grounding Rod	4 roots
Measure Time	Ground voltage: about 2times/second
	Grounding resistance、Soil resistivity: about 7seconds/ time
Ground Voltage	Test below AC 600V(ground voltage measurement function cannot be used to measure commercial power)
Data Storage	500 groups, "MEM" storage instruction, "FULL" symbol indicates that storage is full
Data Review	"MR" symbol indication when viewing data
Overflow Display	Exceed measurement range overflow function: "OL " symbol display
Alarm Function	Alarm when the measured value exceeds the alarm setting value
Battery Voltage	Insufficient battery voltage, showing low battery symbol "  "
Automatic shut-down	"APO" instruction, automatic shutdown after 15 minutes boot
Power Consumption	Standby 40 mA Max (backlight off),
	Turn on backlight: 43 mA Max,
	Measure: 120 mA Max (backlight off)
Weight	Instrument: 1280g (including battery)
	Test line: 890g (including simple test line)
	Auxiliary grounding rod 720g (4 roots)
Working Temperature and	-10° C~40C; below 80% rh

Humidity	
Storage Temperature and Humidity	-20℃～60℃； below 70%rh
Overload Protection	Grounding resistance: AC280V/3 seconds between E-H and E-S ports
Insulation Resistance	Above 20M Ω (500V between circuit and case)
Pressure Resistance	AC 3700V/rms(between circuit and outside)
Electromagnetic Properties	IEC61326(EMC)
Suitable for Safety Regulations	IEC61010-1 (CAT III 300V, CAT IV 150V, pollution degree 2); IEC61010-031; IEC61557-1 (grounding resistance); IEC61557-5 (soil resistivity); JJG 366-2004.

III、Accessories

Instrument	1PC
Instrument box	1PC
Auxiliary grounded rob	4PCS
Standard test line	4PCS(Red 15m, Black 15m, Yellow 10m, Green 10m, each one)
Easy test line	2PCS(Yellow 1.5m, Green 1.5m each one)
Battery	1.5V Alkaline battery 6 sections
Manual, certificate	1SET



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