FUZRR 征能科技

FR3010E Grounding Resistance Soil Resistivity Tester

Ⅰ. Characteristic

FR3010E grounding resistance soil resistivity tester, also known as four-wire grounding resistance tester or soil resistivity tester, is a common instrument for testing and measuring grounding resistance commonly used instruments. Processor-controlled 2-wire, 3-wire, 4-wire French grounding resistance testing and soil resistivity testing.

FR3010E brings together many grounding test functions, which can quickly and comprehensively measure various parameters in the grounding network. It is a new generation of grounding measuring instrument that replaces the traditional shaking table measurement. Widely used in telecommunications, electricity, meteorology, computer rooms, oil fields, power distribution lines, tower transmission lines, gas stations, factory grounding grids, lightning rods, etc. The instrument has the characteristics of accurate, fast, simple, stable and reliable testing.

The FR3010E is controlled by a microprocessor and can accurately detect ground resistance, soil resistivity, and ground voltage. It uses fast filtering techniques to minimize interference. Store 500 sets of data at the same time.

Ⅱ. Technical Specification

1. Range and Accuracy Error

Measurement function	Measuring range	Accuracy	Resolution
Ground resistance(R)	0.00Ω～30.00Ω	±2%rdg±5dgt (Note 1)	0.01Ω
	30.0Ω～300.0Ω	±2%rdg±3dgt	0.1Ω
	300Ω～3000Ω	±2%rdg±3dgt	1Ω
	3.00kΩ～30.00kΩ	±2%rdg±3dgt	10Ω
Soil resistivity(ρ)	0.00Ωm～99.99Ωm	ρ=2πaR (Note 2)	0.01Ωm

	100.0Ωm～999.9Ωm		0.1Ωm
	1000Ωm～9999Ωm		1Ωm
	10.00kΩm～99.99kΩm		10Ωm
	100.0kΩm～999.9kΩm		100Ωm
	1000kΩm～9999kΩm		1kΩm
Ground voltage	AC 0.00～600V	±2%rdg±3dgt	0.01V

Note: 1. Reference condition: Accuracy when Rh Rs<100Ω.

Working conditions: Rh max＝3kΩ+100R＜50kΩ; Rs max＝3kΩ+100R＜50kΩ

2. It depends on the measurement accuracy of R, π=3.14, a: 1 m～100m;

2. General Specifications

Features	Two-three-four-wire measurement of grounding resistance and soil resistivity; Ground voltage measurement
Ambient temperature and humidity	23℃±5℃, below 75%rh
Power supply	1.5V (LR14) alkaline batteries 6
Interference voltage	<20V (should be avoided)
Disturbance current	<2A (should be avoided)
Electrode spacing when measuring R	a>5d
Electrode spacing when measuring ρ	a＞20h
Auxiliary grounding resistance value	Reference condition <100Ω, working condition <5kΩ
Range	Grounding resistance: 0.00Ω～30.00kΩ
	Soil resistivity: 0.00Ωm～9999kΩm
	Ground voltage: 0.00V～600V
Measurement method	Precision 4-wire, 3-wire method measurement, simple 2-wire measurement ground resistance
Measurement methods	Grounding resistance: rated current pole change method Soil Resistivity: Quadrupole Method Ground voltage: Average value rectification (between S-FR 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 from 1m to 100m
Shift	Grounding resistance: 0.00Ω～30.00kΩ automatic gear shifting
	Soil resistivity: 0.00Ωm～9999kΩm automatic shifting
Backlight	Controllable gray and white backlight, suitable for use in dark places
Display mode	4-digit large LCD display, gray and white backlight
Measurement	LED blinks during measurement

instructions	
LCD display field	108mm×65mm
Meter size	240mm (L)×188mm (W)×85mm (H)
Standard test lead	4 strips: 15m for red, 15m for black, 10m for yellow, 10m for green
Simple test lead	2: Yellow 1.5m, 1 green 1.5m each
Auxiliary ground rod	4 sticks
Measure time	Voltage to ground: about 2 times/second
	Grounding resistance, soil resistivity: about 7 seconds/time
Ground voltage	AC 600V or less measurement (the ground voltage measurement function cannot be used to measure commercial power)
Data storage	500 groups, "MEM" storage indication, displaying "FULL" symbol means the storage is full
Data access	"MR" symbol indication when viewing data
Overflow display	"OL" symbol indication when overrange overflow
Alarm function	When the measured value exceeds the alarm setting value, an alarm prompt will be issued
Battery voltage	Low battery voltage, showing low battery symbol“ ▭ ”
Automatic shut-down	The meter shuts down after about 15 minutes of inactivity
Power consumption	Standby: 40mA Max (backlight off)
	Turn on the backlight: 43mA Max
	Measurement: 120mA Max (backlight off)
Quality	Meter: 1280g (including battery)
	Test line: 890g (including simple test line)
	Auxiliary ground rod: 720g (4 pieces)
Working temperature and humidity	-10℃～40℃; below 80%rh
Storage temperature and humidity	-20℃～60℃; below 70%rh
Overload protection	Measuring ground resistance: AC 280V/3 seconds between each port of H-E and S-FR
Insulation resistance	Above 20MΩ (500V between circuit and case)
Pressure resistance	AC 3700V/rms (between circuit and case)
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. Packing List

Instrument	1 set
Instrument box	1 pc
Auxiliary ground rod	4 sticks
Standard test lead	4 strips (15 meters for red; 15 meters for black; 10 meters for yellow; 1 for each of 10 meters for green)
Simple test lead	2 strips (yellow 1.5m; green 1.5m)
Battery	6 1.5V alkaline batteries
Manual, Warranty	1 set

GuangZhou ZhengNeng Electronics Technology Co.LTD
Address: 4th Floor, No. 771, Guangcong Eighth Road, Changyaoling Village, Zhongluotan Town, Baiyun District, Guangzhou, China
Tel：86-20-36544172
E-mail: sales@fuzrr.com
Post code：510540
Website：https://www.fuzrr.com