

ES3000 Digital Ground Resistance Tester



I. Product Introduction

ES3000 digital grounding resistance tester, also known as the three-wire grounding resistance tester, grounding resistance meter, etc., is a commonly used instrument for measuring common grounding resistance meters. It uses a large LCD gray screen backlight display and microprocessor technology to meet the two-wire, three-wire test resistance requirements. Suitable for 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.

ES3000 digital grounding resistance tester is controlled by a microprocessor and can automatically detect the connection status of each interface and the interference voltage and interference frequency of the ground network, and with the function of testing the auxiliary grounding resistance, the measured grounding and auxiliary grounding resistance in the same screen display is clear at a glance. At the same time store 500 sets of data, resistance measurement range: $0.01\ \Omega \sim 3000\ \Omega$, grounding voltage range: $0 \sim 100\text{V}$. The online monitoring data can be monitored by the monitoring software. USB data can be uploaded to the PC and has unique functions such as numerical maintenance and intelligent alarm prompting.

ES3000 digital grounding resistance tester consists of host computer, monitoring software, test line, USB cable, and grounding pin. It has the functions of reading, checking, saving, reporting and printing of historical data.

II. Technical Specification

Grounding resistance range	$0.01\ \Omega \sim 3000\ \Omega$	Accuracy $\pm 1.5\% \text{rdg} \pm 3 \text{dgt}$
Grounding resistance resolution	$0.01\ \Omega$	

Grounding voltage range	0~100V AC Accuracy $\pm 1.5\% \text{rdg} \pm 3 \text{dgt}$
Grounding voltage resolution	0.01V
base condition	23°C $\pm 5^\circ\text{C}$, below 75%rh (Auxiliary grounding resistance $100\Omega \pm 5\%$, voltage to ground $< 10\text{V}$)
Function	Ground resistance measurement, ground voltage measurement, low value resistance measurement
Power	DC 6V 4.5Ah Lead-acid battery, standby for more than 100 hours
Backlight	Controllable gray screen backlight, suitable for use in dim places
Measuring mode	Precise three-wire measurement, simple two-wire measurement
Measuring methods	Grounding resistance: rated current change pole method, 128Hz; Ground Voltage: Average Rectification
Test frequency	128Hz
Short-circuit test current	$> 20\text{mA}$ (sine wave)
Wire resistance check	Avoid the errors cause of the test line is not fully inserted into the instrument interface or the contactor is incorrectly replaced or the user replaces the extended test lead, to make the ground resistance test more accurate
Display mode	4-bit large LCD display, gray screen backlight
Measurement instructions	LED flashing indicator during measurement, LCD countdown display
LCD size	108mm \times 65mm
Instrument size	L/W/H: 277.2mm \times 227.5mm \times 153mm
Test line length	3 strips: red 15m, yellow 10m, green 5m each one
Simple test line	2 strips: yellow 1.6m, green 1.6m each one
Auxiliary grounding rod	2PCS: $\phi 10\text{mm} \times 200\text{mm}$
Measure time	Ground voltage: about 3 times/sec; grounding resistance: about 5 seconds/time
Measurement times	More than 5000 times
Line voltage	Measuring voltage to ground: test below AC 100V
USB interface	With USB interface, software monitoring, storage data can be uploaded to the computer, save and print
Communication line	One USB communication line, 1.5m long
Data storage	500 groups, "MEM" storage instructions, display "FULL" symbol indicates that the storage is full
Data review	Data review function: "MR" symbol display
Overflow display	Over-range overflow function: "OL" symbol display
Alarm function	Alarm when the measured value exceeds the alarm setting value
Battery voltage	Real-time display of battery power, reminding timely charging when battery voltage is low

Automatic shut-down	"APO" indicates automatic shutdown after 15 minutes
Power consumption	Standby: 40mA Max (backlight off)
	Turn on backlight: 43mA Max
	Measurement: 120mA Max (backlight off)
Weight	Instrument: 2397g (with battery)
	Test line: 850g (including simple test line)
	Auxiliary grounding rods: 425g (2)
	Instrument bag: 271g
Working temperature and humidity	-10℃～40℃； below 80%rh
Storage temperature and humidity	-20℃～60℃； below 70%rh
Overload protection	Grounding resistance: AC 280V/3 seconds between E-H and E-S ports
Insulation resistance	Above 10M Ω (500V between circuit and case)
Pressure resistance	AC 3700V/rms(between circuit and case)
Electromagnetic properties	IEC61010-4-3, Wireless frequency electromagnetic field \leq 1V/m
Suitable for safety regulations	IEC61010-1、IEC1010-2-31、IEC61557-1,5、IEC60529(IP54)、pollution level 2、CAT III 300V

III. Accessories

Meter	1PC
Instrument bag	1PC
Auxiliary grounding rod	2PCS
Monitoring software (CD-ROM)	1PC
USB communication line	1PC
Test line	3PCS (red 15m, yellow 10m, green 5m each one)
Simple test line	2PCS (yellow 1.6m, green 1.6m each one)
6V Battery (internal)	1PC
Charger	1PC
Manual, certificate	1SET



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