

Introduction

This instrument is controlled by intelligent microcontroller chip, with high accuracy and high reliability; it can be used to measure grounding resistance of various power facilities wiring, electrical equipment, lightning protection equipment and other grounding devices, and it can also measure ground voltage. (Note: This instrument is not suitable for harsh outdoor environmental conditions, such as raining, lightning, etc.)

Functions

- backlight and battery detection function.
- data holding.
- It can be used for precise three-wire measurement or simple two-wire measurement.
- When measuring ground resistance, if C or E end of test lead is not in good contact, "---- Ω" warning appears on LCD.
- "OL" stands for over range.
- Double insulation or reinforced insulation safety structure.



MODEL: GT5105A

Digital Earth Resistance Tester Instruction manual



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1. LCD
2. Test lead connection port.
3. LIGHT
4. TEST button
5. HOLD
6. Function selection switch

LCD Displays (Figure2)

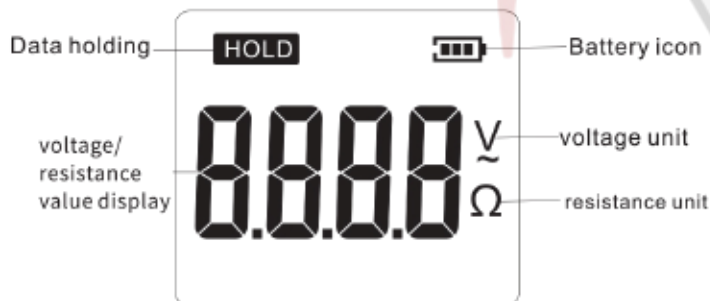


Figure2

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Specifications

1.1 Measurement range and measurement error (under condition of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and $\leq 75\% \text{RH}$)

Basic Function	Range	Accuracy	Resolution
Ground resistance	20Ω	$\pm(2\%+10)$	0.01Ω
	200Ω	$\pm(2\%+3)$	0.1Ω
	2000Ω	$\pm(2\%+3)$	1Ω
2000Ω (two wires)		$\pm(2\%+5)$	1Ω
Ground voltage	200V	$\pm(2\%+5)$	0.1V

auxiliary grounding resistance 500Ω; Error + 5% ;
 Grounding voltage $\leq 10\text{V AC}$

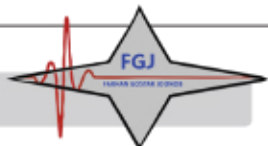
1.2 Application standard:
 IEC 61010-1 CAT. III 600V Pollution degree 2
 CAT. I 5000V Pollution degree 2
 IEC 61326-1 (EMC standard)
 IEC 60529 (IP40)

1.3 measurement method:
 (1) Ground voltage measurement: average response
 (2) Ground resistance measurement: test signal frequency:
 about 820Hz, current: 20Ω about 3.2mA

1.4 Working environment: temperature: $5^{\circ}\text{C} \sim 40^{\circ}\text{C}$; relative humidity: $\leq 80\% \text{RH}$ (no fog) Altitude ≤ 2000 meters

1.5 Storage conditions: temperature: $-20 \sim 60^{\circ}\text{C}$; relative humidity: $\leq 70\% \text{RH}$ (no fog)

1.6 Power supply: 9V power supply [1.5V (No. 5 alkaline battery) * 6]



1.7 Overload protection:

Ground resistance: 200V AC (10 seconds)

Ground voltage: 400V AC (30 seconds)

1.8 Insulation resistance: The insulation resistance between measurement circuit and case is not less than 20MΩ

1.9 Dimensions: 176mm * 77mm * 110mm

2. Operation manual

Preparation before measurement

2.1. Check the battery voltage & battery replacement:

Set function selection switch at ground voltage or ground resistance gear; if "⚡" appears on the LCD, it indicates that battery power is low, and batteries need to be replaced, otherwise the instrument cannot be used normally.

Battery icon	Battery voltage
	> 8.45V
	> 7.72V
	> 7V
	≤ 7V

2.2 Test lead connection

Please make sure that the test lead plug is fully inserted into test end before measurement. A loose connection may affect accuracy of measurement value.

Safety warning



WARNING

Electricity - is dangerous, and can cause personal injury or death, in order to enable you to use the equipment correctly and safely, please read the warning message and safety regulations in this manual carefully before use and strictly comply with them.

The safety symbol "⚠" has three implications in this manual. Users should pay special attention to operation with "⚠" symbol during reading.

- ⚠ **DANGER**—indicates that an environment and operation is likely to cause serious or fatal injury.
- ⚠ **WARNING**—Indicates that an environment and operation can cause serious or fatal injury.
- ⚠ **CAUTION**—Indicates that environment and operation can cause limited injury or damage to the instrument.

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