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> VIHELM GT5307B Insulation Resistance Tester User Manual

## VIHELM GT5307B

# VIHELM GT5307B Insulation Resistance Tester User Manual

Model: GT5307B | Brand: VIHELM

## 1. INTRODUCTION AND OVERVIEW

The VIHELM GT5307B is a professional-grade insulation resistance tester designed for accurate measurement of insulation resistance, AC/DC voltage, and small resistance. This device is essential for electrical maintenance, testing, and troubleshooting in various industrial and scientific applications. It features a large LCD screen for clear readings, automatic discharge, and high voltage alarm for user safety.



*Image: Front view of the VIHELM GT5307B Insulation Resistance Tester, showcasing its robust red and black casing.*

## 2. KEY FEATURES AND FUNCTIONS

The GT5307B offers a comprehensive set of features for reliable electrical testing:

- Measurement of insulation resistance
- AC measurement
- DC measurement
- Small resistance measurement
- Live detection of tested resistance
- Short circuit protection of measured resistance
- AC and DC automatic identification
- Measurement data lock (Data retention)
- Polarization Index (PI)
- Absorption Ratio Test (DAR)
- Automatic discharge function
- Low battery reminder
- Large LCD screen digital display
- External DC power supply DC9V 1.5A capability
- 10M $\Omega$  internal resistance measurement
- Over limit alarm
- Auto range selection
- Red alarm light and buzzer alarm for safety
- High voltage alarm
- Test voltage display

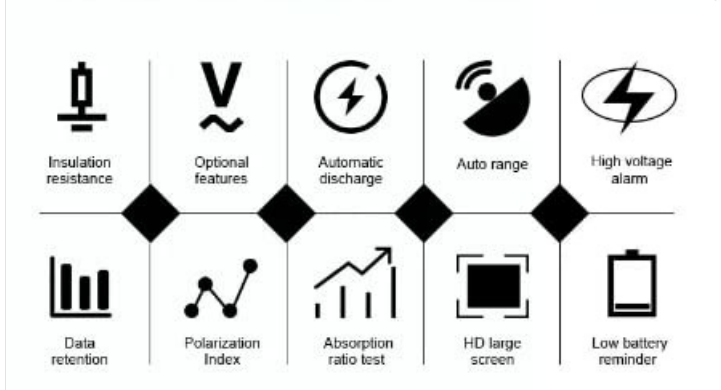


Image: Icons representing key features such as insulation resistance, optional features, automatic discharge, auto range, high voltage alarm, data retention, polarization index, absorption ratio test, HD large screen, and low battery reminder.

### 3. PARTS IDENTIFICATION

Familiarize yourself with the components of the GT5307B Insulation Resistance Tester:

**1. Technical specifications:**

Technical parameters	Technical index
display:	Large-screen LCD (up to 500 counts).
Over limit indication:	Hi: The mark appears on insulation resistance range.
Auto range:	Higher range: 500 counts Lower range: 1 count (only on insulation resistance range)
Sampling Rate:	2 times / second.
Allowed altitude:	≤2000m (for indoor use)
Operation environment:	Temperature: 0°C-40 °C / Humidity: ≤85%
Operation environment:	Temperature: -20 °C -60 °C / Humidity: ≤90%
Overload protection:	Insulation resistance range: AC 1200V / 10 seconds Voltage range: AC 720V / 10 seconds
Withstand voltage:	AC 6000V (50 / 60Hz) / 5 seconds (between circuit and periphery)
Insulation resistance:	≥1000MΩ/ DC 1000V (between circuit and periphery)
power supply	DC9V (6x1.5V AA batteries)
Current consumption:	Approximately 1.5A (maximum) (normally maintained at approximately 50mA)
Battery Life:	About 12 hours
Dimension:	176x110x77mm

**2. Insulation resistance test:**

Rated voltage	100V	250V	500V	1000V
Measurement range	0-1.5GΩ	0-5.5GΩ	0-5.5GΩ	0-5.5GΩ
Open circuit voltage	DC 100V +20% -0%	DC 250V +20% -0%	DC 500V +20% -0%	DC 1000V +20% -0%
Standard test	0.1MΩ load time	0.25MΩ load time	0.5MΩ load time	1.0MΩ load time
Constant current	1mA~1.2mA	1mA~1.2mA	1mA~1.2mA	1mA~1.2mA
Short circuit	About 2.0mA			
Accuracy	±5%rdg±3%dgt(above 100KΩ)			

Image: Diagram illustrating the various parts of the GT5307B tester and its accessories.

1. LINE hole (Input terminal for line connection)
2. V hole (Voltage measurement input terminal)
3. G hole (Guard terminal for insulation resistance measurement)
4. EARTH hole (Ground terminal for insulation resistance measurement)
5. HOLD / Sound switch button (To hold readings or toggle sound)
6. TEST button (Initiates a test measurement)
7. PI / DAR button (Activates Polarization Index or Dielectric Absorption Ratio tests)
8. Rotary gear (Function selector switch)
9. Technical parameters of DC port for external power (External power input)
10. Black test lead with crocodile clip (Negative test lead)
11. Red test lead with crocodile clip (Positive test lead)

## 4. SETUP

### 4.1 Unpacking and Contents

Upon receiving your GT5307B, carefully unpack all components and verify that all items are present. The standard package includes:

- GT5307B Insulation Resistance Tester (x1)
- Test leads with crocodile clips (Red and Black)
- Carrying case
- User Manual



Image: The GT5307B tester, its color box packaging, accessories (test leads), carrying case, and user manual.

### 4.2 Battery Installation

The GT5307B is powered by 6x 1.5V AA batteries. To install or replace batteries:

1. Locate the battery compartment on the rear of the device.
2. Open the battery cover.
3. Insert 6 AA batteries, ensuring correct polarity (+/-).
4. Close the battery cover securely.

Alternatively, the device can be powered by an external DC9V 1.5A power supply via the dedicated DC port.

## 5. OPERATING INSTRUCTIONS

### 5.1 General Operation

Before any measurement, ensure the device is clean, the test leads are in good condition, and batteries are adequately charged. Always observe safety precautions when working with electrical systems.



Image: Close-up view of the GT5307B's front panel, showing the LCD display, rotary switch, and control buttons.

## 5.2 Selecting Measurement Mode

Use the **Rotary gear** (8) to select the desired measurement function:

- **OFF**: Powers off the device.
- **AC.V**: For AC voltage measurement.
- **DC.V**: For DC voltage measurement.
- **CONTINUITY**: For continuity testing.
- **100V, 250V, 500V, 1000V**: For insulation resistance measurement at specified test voltages.

## 5.3 Performing a Test

1. Connect the test leads to the appropriate terminals (LINE, V, G, EARTH) and to the circuit under test.
2. Select the desired measurement function using the Rotary gear.
3. Press the **TEST** button (6) to initiate the measurement. The display will show the reading.
4. For insulation resistance tests, hold the TEST button until the measurement is complete.
5. To hold the current reading on the display, press the **HOLD** button (5). Press again to release.

## 5.4 PI/DAR Measurement

For Polarization Index (PI) or Dielectric Absorption Ratio (DAR) tests, select an insulation resistance voltage and then press the **PI/DAR** button (7). The device will automatically perform the timed measurements and calculate the ratio.

# 6. SPECIFICATIONS

## 6.1 Technical Parameters

Technical parameters	Technical index
Display	Large-screen LCD (up to 500 counts)
Over limit indication	Hi: The mark appears on insulation resistance range.
Auto range	Higher range: 500 counts Lower range: 1 count (only on insulation resistance range)
Sampling Rate	2 times / second.
Allowed altitude	≤2000m (for indoor use)
Operation environment	Temperature: 0°C-40°C / Humidity: ≤85%
Storage environment	Temperature: -20°C-60°C / Humidity: ≤90%
Overload protection	Insulation resistance range: AC 1200V / 10 seconds Voltage range: AC 720V / 10 seconds
Withstand voltage	AC 6000V (50 / 60Hz) / 5 seconds (between circuit and periphery)
Insulation resistance	≥1000MΩ/ DC 1000V (between circuit and periphery)
Power supply	DC9V (6x1.5V AA batteries)
Current consumption	Approximately 1.5A (maximum) (normally maintained at approximately 50mA)
Battery Life	About 12 hours
Dimension	176x110x77mm

### 3.Small resistance measurement:

Open circuit voltage	About 5.0V
Measuring range	0.0~999Ω
Resolution	0.1Ω
Accuracy	± (2%+3)

### 4.Voltage measurement:

30 ~ 600V (resolution 1V):

	DC voltage	AC voltage
Measurement range	±30~±600V	30~600V (50/60Hz)
Resolution	1V	
Accuracy	±2%rdg±3dgt	

Image: Table detailing the technical parameters of the GT5307B Insulation Resistance Tester.

## 6.2 Insulation Resistance Test

Rated voltage	100V	250V	500V	1000V
Measurement range	0-1.5GΩ	0-5.5GΩ	0-5.5GΩ	0-5.5GΩ
Open circuit voltage	DC 100V	DC 250V	DC 500V	DC 1000V
	+20% -0%	+20% -0%	+20% -0%	+20% -0%
Standard test	0.1MΩ load time	0.25MΩload time	0.5MΩload time	1.0MΩload time
Constant current	1mA~1.2mA	1mA~1.2mA	1mA~1.2mA	1mA~1.2mA
Short circuit	About 2.0mA			
Accuracy	±5%rdg±3dgt (above 100KΩ)			

## 6.3 Small Resistance Measurement

Open circuit voltage	About 5.0V
Measuring range	0.0~999Ω
Resolution	0.1Ω
Accuracy	± (2%+3)

## 6.4 Voltage Measurement (30~600V, resolution 1V)

Measurement range	DC voltage	AC voltage
	±30~±600V	30~600V (50/60Hz)
Resolution	1V	
Accuracy	±2%rdg±3dgt	

# Functions

1. Measurement of insulation resistance
2. AC measurement
3. DC measurement
4. Small resistance measurement
5. Live detection of tested resistance
6. Short circuit protection of measured resistance
7. AC and DC automatic identification
8. Measurement data is locked.
9. Polarization Index
10. Absorption ratio test
11. Automatic discharge
12. Low battery reminder
13. Large LCD screen digital display
14. External DC power supply DC9V 1.5A
15. 10M internal resistance measurement
16. Over limit alarm
17. Auto range
18. Red alarm light, buzzer alarm.
19. High voltage alarm
20. Test voltage display



Image: Tables detailing the specifications for insulation resistance, small resistance, and voltage measurements.

## 7. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your GT5307B Insulation Resistance Tester:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries to prevent leakage.
- **Battery Replacement:** Replace batteries promptly when the low battery indicator appears to ensure accurate measurements and prevent damage from depleted batteries.
- **Test Leads:** Regularly inspect test leads for any signs of damage, such as cracks in the insulation or exposed wires. Replace damaged leads immediately.

## 8. TROUBLESHOOTING

If you encounter issues with your GT5307B, consider the following common troubleshooting steps:

- **Device not powering on:** Check battery installation and ensure batteries are not depleted. Try replacing with new batteries or using an external power supply.
- **Inaccurate readings:** Ensure test leads are properly connected and not damaged. Verify the correct measurement mode is selected for the test. Check for external interference.
- **Display issues:** If the display is dim or flickering, replace batteries. If the issue persists, contact customer support.
- **No response from buttons:** Ensure the device is powered on. If still unresponsive, try removing and reinserting batteries.

For persistent issues or complex problems, please refer to the manufacturer's official support channels.

## 9. WARRANTY AND SUPPORT

For information regarding product warranty, technical support, or service, please contact VIHELM customer service directly or refer to the warranty card included with your product. Keep your purchase receipt as proof of purchase for any warranty claims.

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