



Figure 1. The Photo of Actual VC60B



Figure 2. The Photo of Actual VC60B

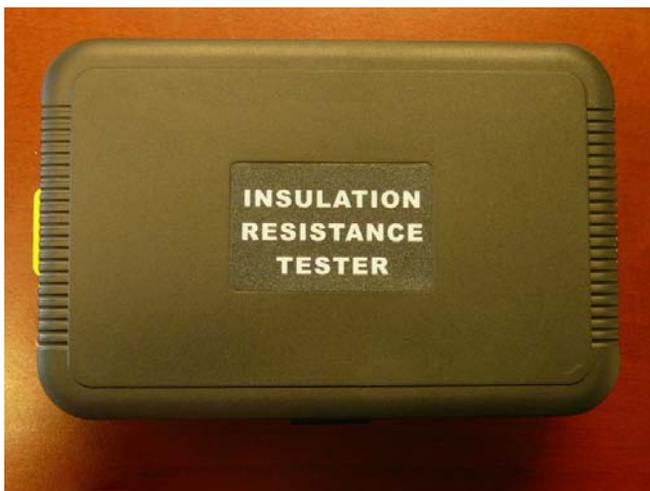


Figure 3. The Photo of Actual VC60B

### FEATURES

Altitude: <2000m

Power Consumption: <650mW

Sampling Rate: Approx. 3 times/sec.

Fuse: 100mA/60V Resettable Fuse

Lower Battery Indication: The LCD Display “” Symbol.

Over Range Indication: Displays “1” When Exceeding Upper Limit

Additional Temperature Coefficiency:  $0.15 \times$  Specified Accuracy/ $^{\circ}\text{C}$  (<18 $^{\circ}\text{C}$  or >28 $^{\circ}\text{C}$ )

Power Source: 5# Battery LR6 (1.5V)  $\times$  6 (or External AC Adapter).

### APPLICATIONS

It’s widely used for insulation testing of electric machines, cables, electronic equipments, electric facilities, etc.

### DESCRIPTION

VC60B+1.0 is a digital insulation tester which adopts DC voltage converter of low consumption and high converter ratio inductance energy storage to convert the voltage of 9Vdc into 250V/500V/1000Vdc.

With digital bridge, the instrument has the features of being easy to operate, wide test range, highly stable performance, backlit LCD display, data hold and auto power off. With a shoulder strap, it can be used by both hands.

It is an ideal instrument to be used for insulation testing of electric machines, cables, electronic equipments, electric facilities, etc.

### OPERATION INSTRUCTION

For the first time of operation, please make sure there is enough power source. If not, open the battery door and put into 6 pcs of 5# batteries. Please pay attention to the batter polarities.

When connecting to an external AC adapter, the battery power supply will be shut off. Do not charge the batteries.

**Note:** choose a correct power supply mode (+--).

**GENERAL SPECIFICATIONS**

Table 1.

Altitude	<2000m
Fuse	100mA/60V resettable fuse
Sampling Rate	Approx.3 times/sec
Power Source	5# Battery LR6 (1.5V) ×6 (or External AC Adapter)
Power Consumption	<650mW
Lower Battery Indication	The LCD display “  ” symbol
Over Range Indication	Displays “1” when exceeding upper limit.
Additional Temperature Coefficiency	0.15 × Specified Accuracy/°C (<18°C or >28°C)
Operation Environment	Temperature: -15°C-55°C
	Relative humidity: <75%RH
Storage Environment	Temperature: -40°C-60°C
	Relative humidity: <90%RH
LCD Size	84.8×59.8mm, Max.Display 1999
Dimension	175 (L) × 110 (W) × 62.5 (D) mm
Weight	580g (including battery)

**TECHNICAL SPECIFICATIONS**

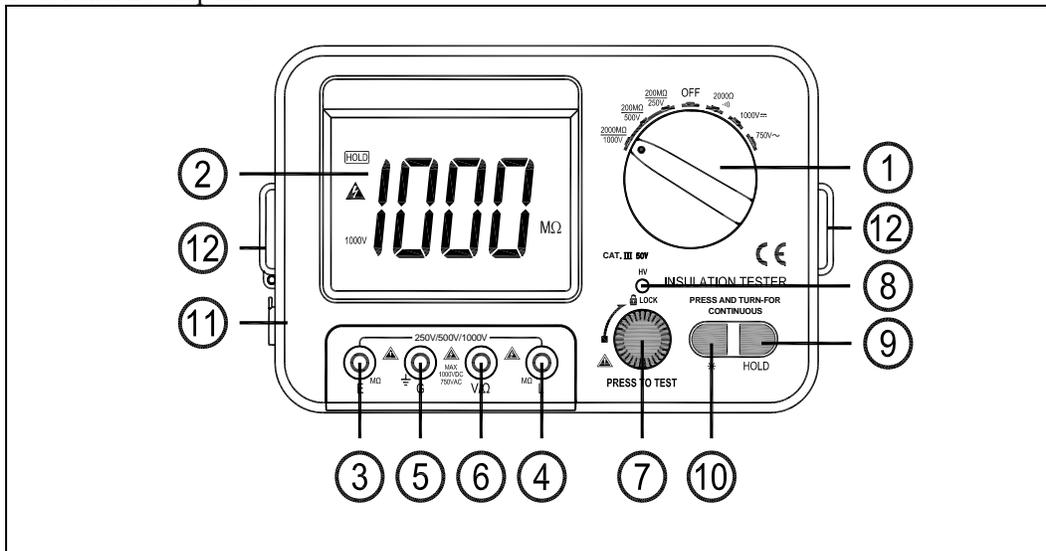
Table 2.

Basic Function	Range	Basic Accuracy
Output Voltage	250V/500V/1000V	±10%
Testing Current	250V(R=250kΩ) 1mA 500V(R=500kΩ) 1mA 1000V(R=1MΩ) 1mA	±10%
Insulation Resistance	250V: 1MΩ - 200MΩ 500V: 1MΩ - 200MΩ 1000V: 10MΩ - 2000MΩ	±(4%rdg±2d)
Short Circuit Current	<1.8mA	
Median Resistance	250V/500V: 2 MΩ 1000V: 5MΩ	
Resistance and Continuity Test	0Ω - 2kΩ, <50Ω Beeper Alarm, Testing Current 1mA	±(0.8% rdg6d)
DCV Test	0V~1000V	±(0.5% rdg+6d)
ACV Test	0V~750V	±(1% rdg+6d)
Terminal Position	Insulation resistance: E and L Voltage/Current: V/Ω and G	
Voltage Input Impedance	1MΩ	

ACV Frequency Response	50 Hz ~ 200Hz	
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**Note:** Median resistance – makes sure that the voltage of both testing sides does not lower than 90% of the resistance’s normal voltage lower limit.

Table 3. Panel Description



Item	Description
1	Power switch/function switch: power ON/OFF the instrument and selects functions. To save power, turn the switch to “OFF” when not in use.
2	LCD Display: displays testing results and unit symbols
3	E: Input terminal for tested circuit
4	L: Terminal for connection to the GND of the tested object
5	G: Protection terminal. When the tested object is required to add the protection loop to eliminate the leakage effect, connect the electrode wire of the protection loop to “G” terminal.
6	Voltage measurement, resistance measurement (<2kΩ) and continuity measurement input terminal (V/Ω)
7	Test button
8	High voltage indicator (LED)
9	“HOLD” key: press to hold the current readings on the LCD. The LCD will display “HOLD” symbol. Press again to cancel the data hold function.
10	“*” key: LCD backlight ON/OFF key
11	Terminal of DC 9V AC adapter (+⊖-). It is used to connect to external power source for power supply.
12	Shoulder strap locker: it’s used to lock the shoulder strap so that the instrument can be hung on the neck to save hands.

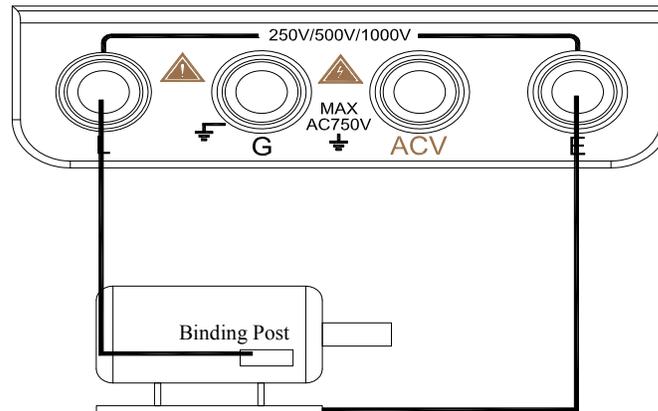
**INSULATION RESISTANCE MEASUREMENT**


Figure 4. Insulation Resistance Measurement

1. According to testing request, tune the function switch to a suitable function
2. Connect the electrode of the tested object to the relative terminals of the tester
3. When testing a cable, connect “G” terminal to the protection loop.
4. Press “TEST” button to get started the measurement. Read the display after the display stabilized. To make continuous measurement, turn the function switch to the right to lock. Turn the function switch to the left to unlock the continuous measurement. When pressing the “TEST” button, the high voltage indicator turns red, and the high voltage indication is displayed on the LCD. At the same time, the beeper alarms with “tick-tick” sound. If the tested insulation resistance is 5% less than the selected range of if there is short circuit, the beeper alarms with a “tick.....” long sound.
5. Connect the red lead “E” to the circuit of the tested object, and black lead “L” to the ground terminal of the tested object. Lead “E” is required to be hung in the air.
6. If the LCD displays “1”, it indicates over range operation. Please choose a higher range to get reading.

**Caution**

1. Pressing the “TEST” button, output terminal “E” will have high voltage output. Be careful to avoid electric shock.
2. Before testing, make sure to choose a correct voltage range. Make sure the LCD display is in accordance with selected voltage.
3. During MΩ measurement, the ambient interference or insulation material instability may cause unstable readings. In this situation, connect terminal “G” to the shield terminal of the tested object to get stable readings.

**RESISTANCE AND CONTINUITY MEASUREMENT**

1. Tune the function switch to range 2000Ω.
2. Connect the red lead to “V/Ω” input terminal and black lead to “G” input terminal.
3. Connect the test leads across the tested circuit. The LCD will display the tested data.
4. If the tested resistance is less than approx. 50Ω, the beeper alarms.

**Caution**

1. If the tested resistance is over 2kΩ or there is open circuit, the LCD displays “1”.
2. When testing a live resistor, to ensure safety, do not proceed testing until the tested circuit is completely powered off and all capacitors are fully discharged.
3. If testing results have considerable, it may be caused by other live components of the same circuit or by electric potential on the two ends of the resistor.



4. Do not input voltage to the resistance range!

#### DCV MEASUREMENT

1. Tune the function switch to DC 1000V range.
2. Connect the red lead to “V/Ω” input terminal and black lead to “G” input terminal.
3. Connect the test leads across the tested circuit. The LCD will display the voltage and polarity of the red lead touch point.

#### Caution

1. If there is residue numbers before measurement, it is normal and will not affect the measurement. If the LCD displays “1” during measurement, it indicates over range operation.
2. The input voltage must not over DC 1000V. Voltage over DC 1000V will cause damage to the instrument circuit.
3. During high voltage circuit measurement, do not touch the high voltage circuit to avoid electric shock.

#### ACV MEASUREMENT

1. Tune the function switch to AC 750V range.
2. Connect the red lead to “V/Ω” input terminal and black lead to “G” input terminal.
3. Connect the test leads across the tested circuit. The LCD will display the voltage and polarity of the red lead touch point.

#### Caution

1. If there is residue numbers before measurement, it is normal and will not affect the measurement. If the LCD displays “1” during measurement, it indicates over range operation.
2. The input voltage must not over AC 750V. Voltage over AC 750V will cause damage to the instrument circuit.
3. During high voltage circuit measurement, do not touch the high voltage circuit to avoid electric shock.

#### DATA HOLD

Press the “HOLD” button, the current data will be held on the LCD. Press the “HOLD” button again to cancel data hold.

#### Note

There is no data hold function during insulation resistance measurement.

#### BACKLIT DISPLAY

Pressing “\*” button, the LCD backlight turns on. Pressing “\*” button again, the LCD backlight turns off.

#### SAFETY INSTRUCTIONS AND MAINTENANCE

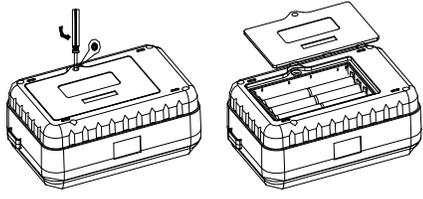
The tester is a precise instrument. User is not allowed to apply any modification to the instrument circuit.

#### Caution

1. To ensure safety, the tested object must be completely shut off from power supply and must be testified that the tested object has been fully discharged by short circuit discharge to testify that the tested object dose have any electrical hazard.
2. Do not input voltage over DC 1000V or AC 750Vrms.
3. Do not apply voltage measurement in the Ω range.
4. Do not apply any measurement before the instrument’s batteries are well installed or before the rear cover is well loaded.
5. Before change battery or change fuse, remove all test leads from the tested object and turn off the power switch.
6. Keep the instrument away from water and dust. Do not fall or throw the instrument.
7. Keep the instrument away from high temperature, high humidity, flammable, explosive and strong magnetic environment.
8. Use a soft cloth dampened in a solution of mild detergent and water to clean the instrument. Do not spray cleaner directly onto the instrument or use any abrasives or strong solvent.
9. If long time no use, take out the batteries from the instrument to avoid battery leakage damaging the instrument.

10. When use 9V battery, if the LCD displays low battery symbol “”, replace battery according to the following steps.

Table 4. Step

	
Item	Description
1	Use a screw driver to open the battery door screws, and take off the battery door.
2	Take off the battery and replace with a new one. To ensure long time battery power supply, it is recommended to use alkaline batteries.
3	Load the battery door and tighten the screws.

### PACKING LIST

1. Digital insulation tester x1pcs
2. 10A test lead x1 pair
3. 5# battery (1.5V) x6pcs
4. Operation manual x1pcs
5. Shoulder strap x1pcs
6. Crocodile clip x1 pair

### TROUBLE SHOOTING

If the instrument does not work properly, the following self-check steps will help to solve general faults.

Table 5.

Fault	Solution
No Display	<ul style="list-style-type: none"> <li>● Power off - please turn on the power</li> <li>● Replace the batteries</li> </ul>
 Symbol Appearance	<ul style="list-style-type: none"> <li>● Replace the batteries</li> </ul>
Error Value	<ul style="list-style-type: none"> <li>● Replace the batteries</li> </ul>

### ORDERING INFORMATION

Table 6. Unit Price

Part #	Unit Price
VC60B	\$356.45



**Note: if you buy 5 or more, please contact us for a better price.**

#### **NOTICE**

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