XDM6051 Digital Multimeter
Quick Guide

For product support, visit:www.owon.com.hk/download

※:The illustrations, interface, icons and characters in the user manual may be slightly different from the actual product. Please refer to the actual product.

General Warranty

We warrant that the product will be free from defects in materials and workmanship for a period of 3 years from the date of purchase of the product by the original purchaser from our company. This warranty only applies to the original purchaser and is not transferable to a third party.

If the product proves defective during the warranty period, we will either repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product. Parts, modules and replacement products used by our company for warranty work may be new or reconditioned like new. All replaced parts, modules and products become the property of our company.

To obtain service under this warranty, the customer must notify our company of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to our designated service centre, a copy of the customer's proof of purchase is also required.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. We shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than our company representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of not our supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest sales and service offices for services.

Excepting the after-sales services provided in this summary or the applicable warranty statements, we will not offer any guarantee for maintenance definitely declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. We should not take any responsibilities for any indirect, special or consequent damages.

Table of Contents

1 Safety Information 1

1.1 General Safety Requirements 1
1.2 Safety Terms and Symbols 3
1.3 Measurement Limits 4
1.3.1 Main Input Terminals Measurement Limits 4
1.3.2 Current Input Terminal Measurement Limits 5
1.3.3 Sense Terminals Measurement Limits 5
1.4 Measurement Category 5

2 Quick Start 7

2.1 General Inspection 7
2.2 Front Panel Overview 8
2.3 Rear Panel Overview 9
2.4 Adjusting the Tilt Stand 10
2.5 User Interface 11
2.6 AC Power Input Setting 11
2.7 Power On 12
2.8 Measurement Connections 12

3 Function and Operations 15

3.1 Front Panel Menu Reference 15

4 Troubleshooting 17

5 Appendix 18

5.1 Appendix A: Accessories 18
5.2 Appendix B: General Care and Cleaning 18
5.3 Appendix C: Line Fuse Replacement 19

1 Safety Information

1.1 General Safety Requirements

Before any operations, please read the following safety precautions to avoid any possible bodily injury and prevent this product or any other products connected from damage. In order to avoid any contingent danger, this product is only used within the range specified.

- Check AC power input setting according to the standards in your own country (see page 11, **AC Power Input Setting**).
- **Use Proper Power Cord.** Use only the power cord supplied with the product and certified to use in your country.
- **Product Grounded.** This instrument is grounded through the power cord grounding conductor. To avoid electric shock, the grounding conductor must be grounded. The product must be grounded properly before any connection with its input or output terminal.
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Check all Terminal Ratings.** To avoid instrument damage and the risk of electric shock, check all the Measurement Limits and markers of this product. Refer to the user's manual for the Measurement Limits before connecting to the instrument. Do not exceed any of the Measurement Limits defined in the following section.
- **Do not operate without covers**. Do not operate the instrument with covers or panels removed.
- **Use Proper Fuse.** Use only the specified type and rating fuse for this instrument.
- **Avoid exposed circuit**. Do not touch exposed junctions and components when the instrument is powered.
- **Do not operate if in any doubt.** If you suspect damage occurs to the

instrument, have it inspected by qualified service personnel before further operations.

- **Use your instrument in a well-ventilated area.** Inadequate ventilation may cause increasing of temperature or damages to the device. Please keep well ventilated and inspect the intake regularly.
- **Do not operate in wet conditions.** In order to avoid short circuiting to the interior of the device or electric shock, please do not operate in a humid environment.
- **Do not operate in an explosive atmosphere.**
- **Keep product surfaces clean and dry.**
- **Only the qualified technicians can implement the maintenance.**

1.2 Safety Terms and Symbols

Safety Terms

Terms in this Manual. The following terms may appear in this manual:

⚠ **Warning:** Warning indicates the conditions or practices that could result in injury or loss of life.

⚠ **Caution:** Caution indicates the conditions or practices that could result in damage to this product or other property.

Terms on the Product. The following terms may appear on this product:

Danger: It indicates an injury or hazard may immediately happen.

Warning: It indicates an injury or hazard may be accessible potentially.

Caution: It indicates a potential damage to the instrument or other property might occur.

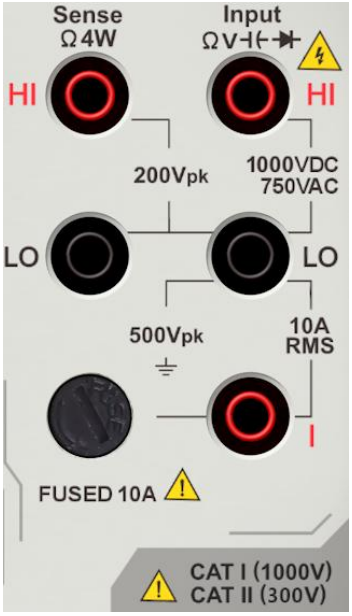
Safety Symbols

Symbols on the Product. The following symbol may appear on the product:

⎓	Direct current (DC)	⚡	Warning, risk of electric shock
∼	Alternating current (AC)	⚠	Caution, risk of danger (refer to this manual for specific Warning or Caution information)
≂	Both direct and alternating current	CE	Conforms to European Union directives
⏚	Ground terminal	⏚	Chassis Ground
CAT I	IEC Measurement Category I. The maximum measurable voltage is 1000 Vpk in the HI -LO terminal.		
CAT II	IEC Measurement Category II. Inputs may be connected to AC mains power (up to 300 VAC) under Category II overvoltage conditions.		
🗑	This product complies with the WEEE Directive (2002/96/EC) marking equipment. The affixed product label indicates that you must not discard this electrical/electronic product in domestic household waste.		

1.3 Measurement Limits

The protection circuitry of the multimeter can prevent damage to the instrument and protect against the danger of electric shock, when the Measurement Limits are not exceeded. To ensure safe operation of the instrument, do not exceed the Measurement Limits shown on the front panel, it is defined as follows:



The user-replaceable 10A current-protection fuse is on the front panel. To maintain protection, replace fuse only with fuse of the specified type and rating. About the specified type and rating of the fuse, please refer to "5 Current Terminal Fuse" in "Front Panel Overview" on page 8.

1.3.1 Main Input Terminals Measurement Limits

The HI and LO input terminals are used for voltage, resistance, continuity, frequency (period), capacitance, diode, and temperature test measurements. Two Measurement Limits are defined for these terminals:

HI Input to LO Input Measurement Limit

- The Measurement Limit from HI Input to LO Input is 1000 VDC or 750 VAC,

which is also the maximum voltage measurement. This limit can also be expressed as 1000 Vpk maximum.

LO Input to Ground Measurement Limit

- The LO input terminal can safely "float" a maximum of 500 Vpk relative to ground, where ground is defined as the Protective Earth Conductor in the AC mains power cord connected to the instrument.

As implied by the above limits, the Measurement Limit for the HI input terminal is a maximum of 1500 Vpk relative to ground when LO Input is at its maximum of 500 Vpk relative to ground.

1.3.2 Current Input Terminal Measurement Limits

The Measurement Limit from the current input terminal (I) to the LO Input terminal is 10 A (DC or AC). Note that the current input terminals will always be at approximately the same voltage as the LO Input terminal, unless a current protection fuse is open.

1.3.3 Sense Terminals Measurement Limits

The HI and LO sense terminals are used for four-wire resistance measurements.

- The Measurement Limit from HI Sense to LO Input is 200 Vpk. The Measurement Limit from HI Sense to LO Sense is 200 Vpk.
- The Measurement Limit from LO Sense to LO Input is 2 Vpk.

Note: The 200 Vpk limit on the sense terminals is the Measurement Limit. Operational voltages in resistance measurements are much lower–up to ±12 V in normal operation.

1.4 Measurement Category

The safety rating of the multimeter:

- **1000 V, CAT I:** IEC Measurement Category I. The maximum measurable voltage is 1000 Vpk in the HI -LO terminal.
- **300 V, CAT II:** IEC Measurement Category II. Inputs may be connected to AC mains power (up to 300 VAC) under Category II overvoltage conditions.

Measurement category definition

Measurement CAT I applies to measurements performed on circuits not directly connected to the AC mains. Examples are measurements on circuits not derived from the AC mains and specially protected (internal) mains-derived circuits.

Measurement CAT II applies to protect against transients from energy-consuming equipment supplied from the fixed installation, such as TVs, PCs, portable tools, and other household circuits.

Measurement CAT III applies to protect against transients in equipment in fixed equipment installations, such as distribution panels, feeders and short branch circuits, and lighting systems in large buildings.

Measurement CAT IV applies to measurements performed at the source of the low-voltage installation. Examples are electricity meters and measurements on primary over current protection devices and ripple control units.

2 Quick Start

2.1 General Inspection

After you get a new multimeter, it is recommended that you should make a check on the instrument according to the following steps:

1. **Check whether there is any damage caused by transportation.**

   If it is found that the packaging carton or the foamed plastic protection cushion has suffered serious damage, do not throw it away first till the complete device and its accessories succeed in the electrical and mechanical property tests.

2. **Check the Accessories.**

   The supplied accessories have been already described in the Appendix A: Accessories of this Manual. You can check whether there is any loss of accessories with reference to this description. If it is found that there is any accessory lost or damaged, please get in touch with our distributor responsible for this service or our local offices.

3. **Check the Complete Instrument.**

   If it is found that there is damage to the appearance of the instrument, or the instrument can not work normally, or fails in the performance test, please get in touch with our distributor responsible for this business or our local offices. If there is damage to the instrument caused by the transportation, please keep the package. With the transportation department or our distributor responsible for this business informed about it, a repairing or replacement of the instrument will be arranged by us.

2.2 Front Panel Overview

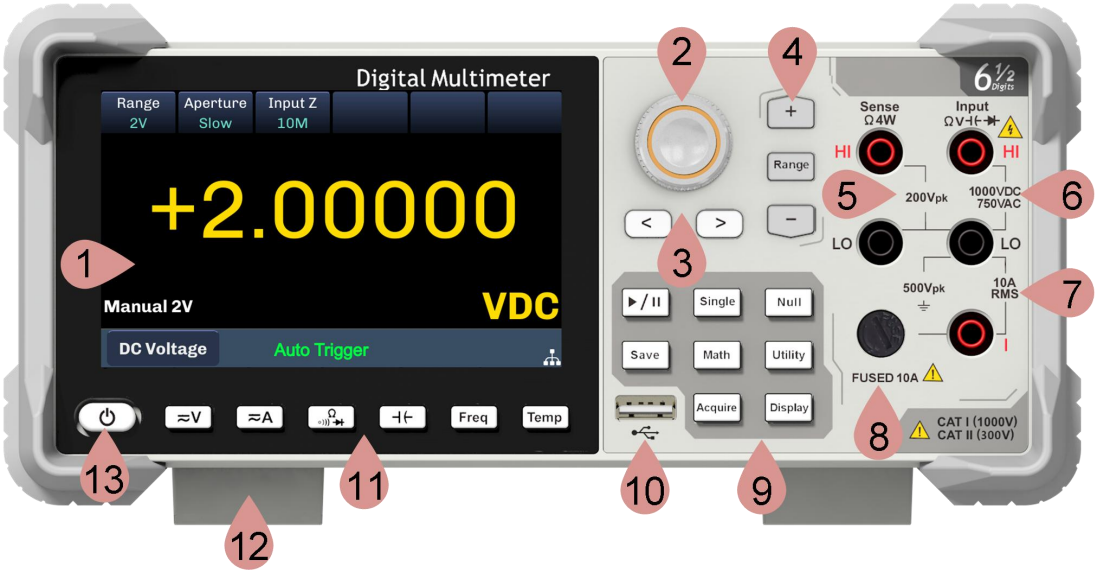


Figure 2- 1 Front Panel Overview

1	**Touch Display Screen**	Display the user interface.
2	**Knob**	Change parameters value.
3	**< > keys**	When setting parameters, press the < > directional keys to move the cursor position.
4	**Range + - keys**	Press **Range** to switch Auto and Manual range mode. Press **+ -** key to increase/decrease range manually.
5	**HI and LO Terminals**	Signal input terminals, used for four-wire resistance measurements.
6	**HI and LO Terminals**	Signal input terminals, used for voltage, resistance, continuity, frequency (period), capacitance, diode, and temperature test measurements.
7	**AC/DC Current Terminals**	Signal input terminals, used for current measurements.
8	**Current Terminal Fuse**	The rating is 10A，250 VAC.
9	**Operation Keys**	**Run/Stop:** auto trigger or stop trigger. **Single:** Enter single measurement. **Null:** Enter null measurement. **Save:** Save test data, screenshot and import or export parameters. **Math:** Setting null, zoom, statistics and limits.

		Utility: Enter system settings. **Acquire:** Setting trigger sample, data log and probe hold. **Display:** Switch number, bar, trend, histogram display mode.
10	**USB Host**	Through this interface, can store the current instrument status or measurement data to an external device. You can also read the saved instrument status or upgrade files from the external device when needed.
11	**Measurement Function Keys**	≂V switch DC or AC voltage measurement; ≂A switch DC or AC current measurement; Ω switch resistance, continuity or diode measurement; ⊣⊢ capacitance measurement; Freq frequency (period) measurement; Temp temperature measurement.
12	**Stool**	Adjust the tilt angle of the instrument.
13	**Power key**	Turn on / off instrument.

2.3 Rear Panel Overview

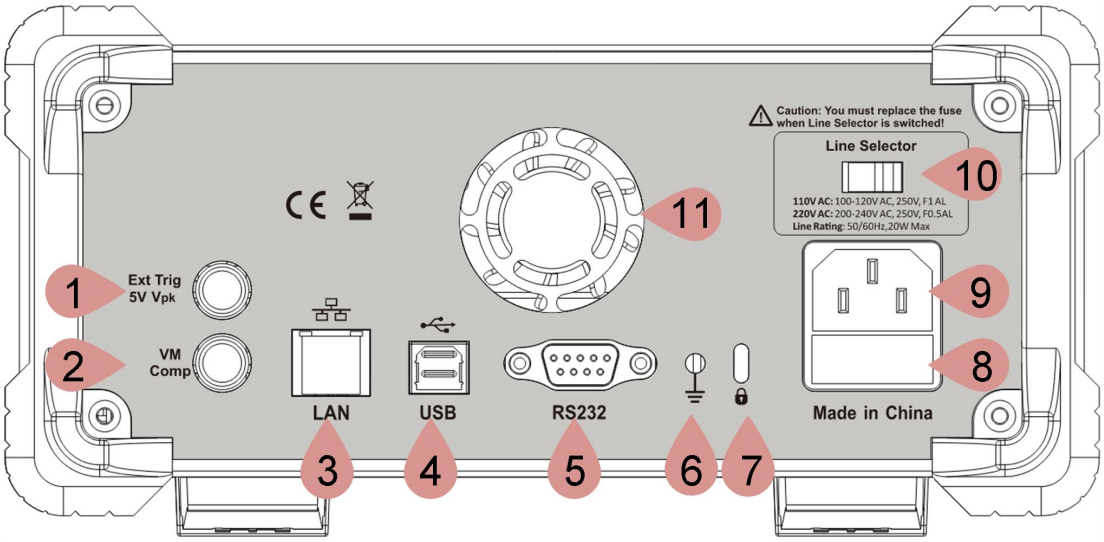


Figure 2- 2 Rear Panel Overview

1	**Ext Trig 5V Vpk**	Trigger the multimeter by connecting a trigger pulse. The external trigger source must be selected.

2	**VM Comp**	A pulse is output from this port upon the completion of each sampling cycle.
3	**LAN**	Network control interface.
4	**USB**	USB TMC communication interface.
5	**RS232**	Serial communication interface.
6	**Ground Terminal**	Ground the instrument.
7	**Safety Lock Slot**	Can be used through this slot to secure the instrument in a fixed position, ensuring the instrument's safety.
8	**Power Fuse**	Use the specified fuse according to the voltage scale.
9	**AC Mains Input**	AC mains input connector.
10	**Line Selector**	Select a proper voltage scale according to the AC supply used. Switch between 110 V and 220 V.
11	**Air Vent**	Do not block the air vent; otherwise, the internal heat will not dissipate, leading to excessively high internal temperatures.

2.4 Adjusting the Tilt Stand

Pull the tilt stand outward to its maximum reach.

2.5 User Interface

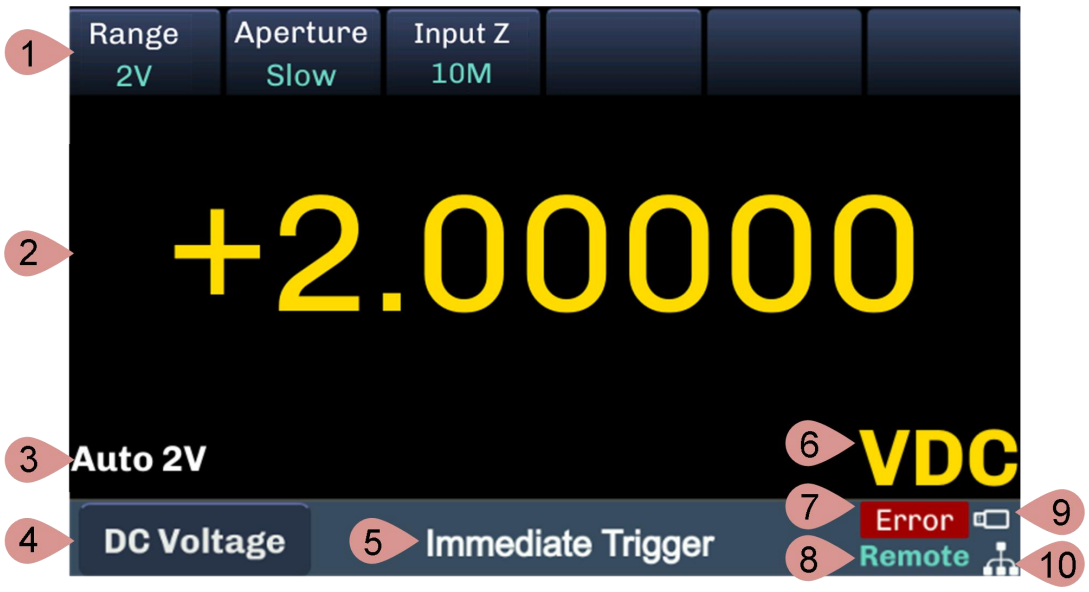


Figure 2-3 User Interface

1	Measurement menu.
2	Current measurement value.
3	Current range status.
4	Measurement mode.
5	Trigger mode indicator.
6	Measurement unit.
7	Error: SCPI command error indicator.
8	Current in remote control mode.
9	USB connection icon.
10	LAN Port Connection icon. Press and hold this icon to view network information.

2.6 AC Power Input Setting

Adopt 100 - 120 VAC or 200 - 240 VAC power source. Users should regulate the voltage scale of the **AC Mains Line Voltage Selector** according to the standards in their own country (see Figure 2-1 Front Panel Overview) at

the rear panel, and use an appropriate fuse.

Voltage	Fuse
100 - 120 V AC	250 V, F1AL
200 - 240 V AC	250 V, F0.5AL

To change the voltage scale of the instrument, do the following steps:

(1) Turn off the power button at the front panel, and remove the power cord.

(2) Check if the fuse installed before leaving factory (250 V, F0.5AL) can match with the selected voltage scale; if not, change the fuse. (See page 19, Appendix C: Line Fuse Replacement.)

(3) Regulate the AC Mains Line Voltage Selector to the desired voltage scale.

2.7 Power On

(1) Connect the instrument to the AC supply using the supplied power cord.

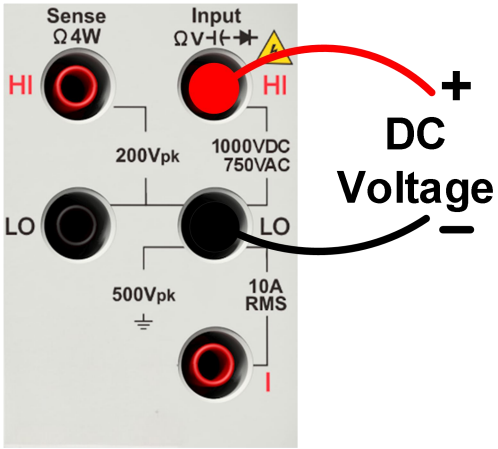
> ⚠ **Warning**:
> To avoid electric shock, the instrument must be grounded properly.

(2) Press the **power button** at the front panel, the screen shows the boot screen.

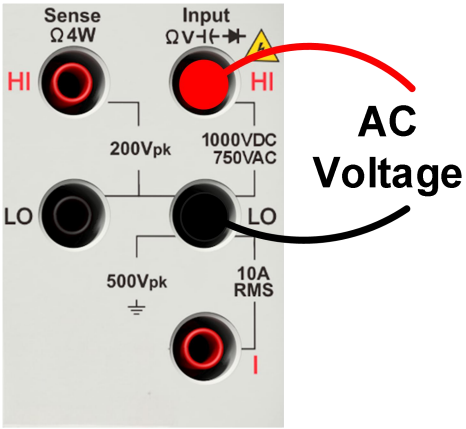
2.8 Measurement Connections

After selecting the desired measurement function, please connect the signal (device) under test to the multimeter according to the method below. To avoid instrument damage, do not discretionarily switch the measurement function when measuring.

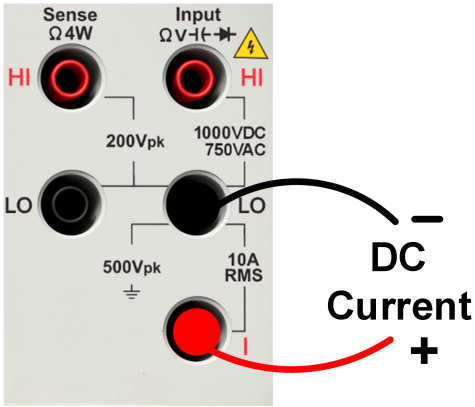
DC Voltage Measurement



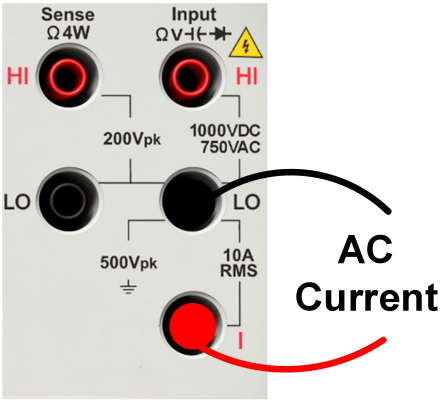
AC Voltage Measurement



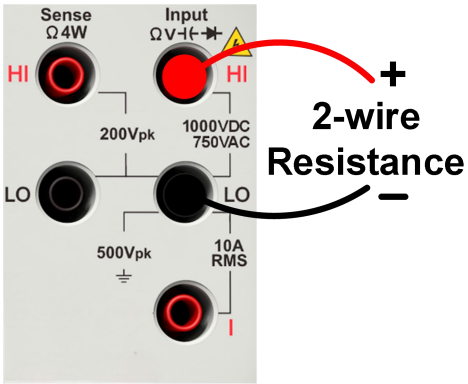
DC Current Measurement



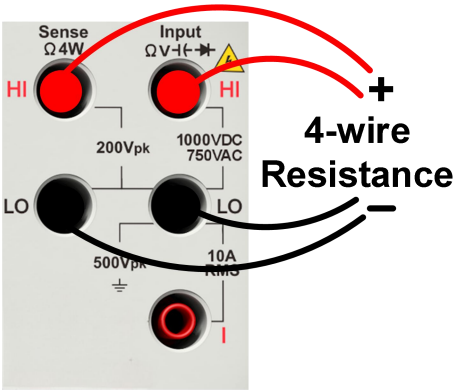
AC Current Measurement



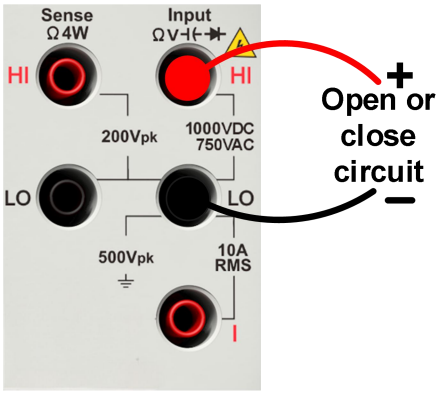
2-wire Measurement



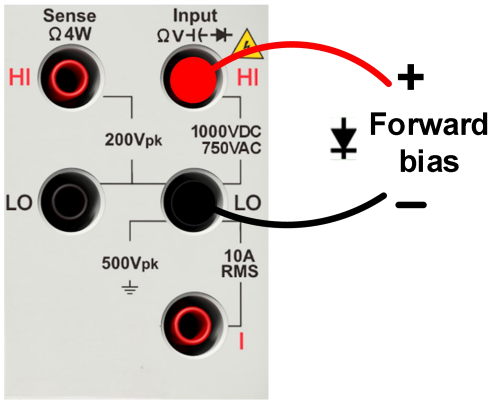
4-wire Measurement



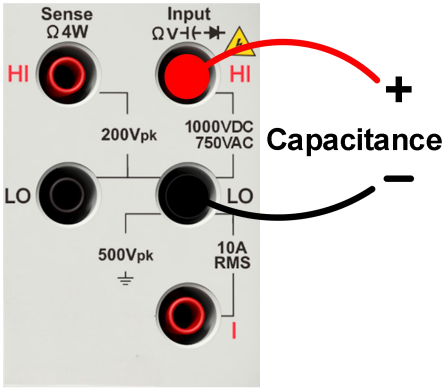
Continuity Measurement



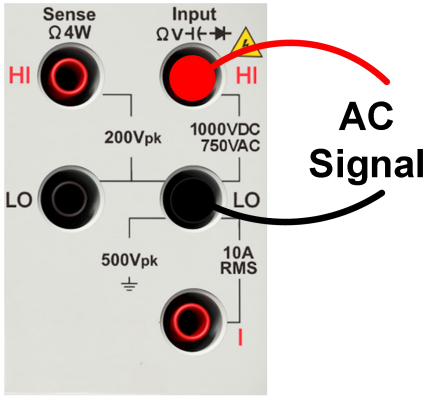
Diode Measurement



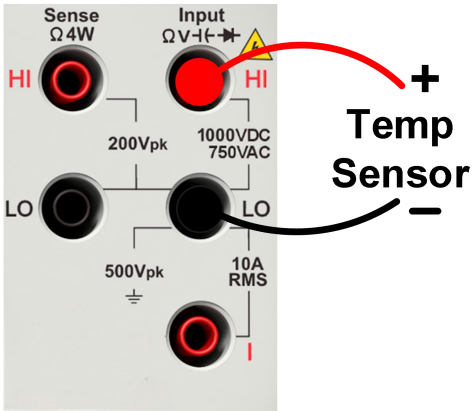
Diode Measurement



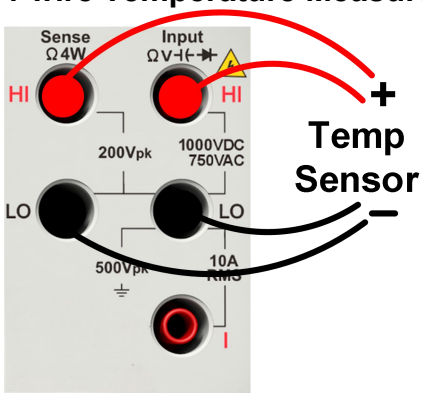
Frequency/Period Measurement



2-wire Temperature Measurement



4-wire Temperature Measurement



3 Function and Operations

3.1 Front Panel Menu Reference

The following table summarizes the front panel keys and the menu structure.

Key	Descriptions	
Knob	Change parameters value; press the knob can enable or disable numeric keypad in digit input mode.	
< / >	Move cursor to left or right.	
+ / -	Increase or decrease range manually.	
Range	Switch to manual or auto range mode.	
▶/II	Start or stop measurement.	
Single	Single trigger.	
Null	Enter null measurement.	
Save	Save test data, screenshot and import or export parameters.	
Math	Null	Turn on / off Null and set this parameter.
	dB/dBm	Turn on / off dB, dBm. (Only DCV/ACV)
	Statistics	Show or hide data and clear readings.
	Limits	Turn on / off limits.
Utility	User Settings	Set number format, sounds, language, brightness and screen saver.
	System Setup	Set data time and firmware update.
	I/O Config	Set LAN setting, USB and Serial.
	Test Admin	Enter key position test or LED RGB test.
	Key Lock	Enable key lock.
	Preset	Set system status.
Acquire	Acquire	Select Continue, Data Log or Prob Hold mode.
	Trigger Settings	Set trigger sample.
	VMC Out	Set the polarity of the sampling completion output pulse signal.
Display	Display	Select number, bar, trend or histogram to display.
	Label	Turn on / off label display.
	Label Text	Edit display label text.
	2nd Meas	Enable or disable auxiliary measurement.
	Digit Mask	Set the number of digit display for measurement.
≈V	DCV	Set DC voltage measurement. Range: Auto, 200mV, 2V, 20V, , 200V or 1000V.

		Aperture: Slow, Middle, Fast. Input Z: 10M or Auto.
	ACV	Set AC voltage measurement. Range: Auto, 200mV, 2V, 20V, 200V or 750V. Filter: >20Hz or >200Hz.
≂A	DCI	Set DC current measurement. Range: Auto, 200uA, 2mA, 20mA, 200mA, 2A or 10A. Aperture: Slow, Middle, Fast.
	ACI	Set AC current measurement. Range: Auto, 200uA, 2mA, 20mA, 200mA, 2A or 10A. Filter: >20Hz or >200Hz.
Ω	Ω	Ω2W/4W: Set 2-wire resistance measurement or 4-wire resistance measurement. Set 2-wire resistance measurement. ● Range: Auto, 200Ω(~1mA), 2kΩ(~1mA), 20kΩ(~100uA), 200kΩ(~10uA), 1MΩ(~5uA), 10MΩ(~500nA) or 100MΩ(~500nA)。 ● Aperture: Slow, Middle, Fast..
	◦)))	Set continuity measurement. Beeper: Turn on / off beeper. Threshold: Set continuity threshold.
	⊣▶	Set diode measurement. Beeper: Turn on / off beeper. Threshold Low: Set diode low threshold. Threshold High: Set diode high threshold.
⊣⊢	Set diode measurement. Range: Auto, 2nF, 20nF, 200nF, 2uF, 20uF, 200uF, 2mF or 20mF.	
Freq	Set frequency or period measurement. Range: Auto, 200mV, 2V, 20V, 200V or 750V. Filter: >20Hz or >200Hz.	
Temp	Set temperature measurement. Probe: TCouple, RTD2W, RTD4W, Thermis2W or Thermis4W. Probe Settings: Set probe parameters. Aperture: Slow, Middle, Fast. Units: ℃, ℉ or K.	

4 Troubleshooting

1. The instrument is powered on but no Display.

1) Check if the power is connected properly.
2) Check if the AC Mains Line Voltage Selector is in the proper voltage scale.
3) Check if the line fuse which is below the AC Mains Input is used appropriately and in good condition (see page 19, Appendix C: Line Fuse Replacement).
4) Restart the instrument after the steps above.
5) If the problem still exists, please contact us for our service.

2. The reading does not change when a current signal is input.

1) Check whether the test lead is correctly inserted into the current input terminals (I terminal and LO Input terminal).
2) Check whether the current terminal fuse at the front panel is burned out.
   Please refer to "7 Current Terminal Fuse" in "Front panel overview" on page 8.
3) Check whether the DCI or ACI measurement function is enabled.
4) Check whether the DCI measurement function is used to measure AC current.

If you encounter other problems, try to reset the settings or restart the instrument. If it still can not work properly, please contact us for our service.

5 Appendix

5.1 Appendix A: Accessories

Standard Accessories (subject to final delivery)

Power Cable

Test Lead

Quick Guide

USB Cable

Fuse

Alligator Clip

5.2 Appendix B: General Care and Cleaning

General Care

Do not store or leave the instrument where the liquid crystal display will be exposed to direct sunlight for long periods of time.

Cleaning

To clean the instrument exterior, perform the following steps:

1. To prevent electrical shock, disconnect the instrument from AC mains power and disconnect all test leads before cleaning.
2. Clean the outside of the instrument using a wet soft cloth not dripping water. Do not make any scuffing when cleaning the LCD screen.
3. To avoid damage to the instrument, do not use any corrosive chemical cleaning agent.

Caution: To avoid any damage to the instrument, do not exposed it to any sprays, liquids, or solvents.

Warning: Before power on again for operation, it is required to confirm that the instrument has already been dried completely, avoiding any electrical short circuit or bodily injury resulting form the moisture.

5.3 Appendix C: Line Fuse Replacement

The line fuse is in the plastic fuse box below the power line input on the rear panel.

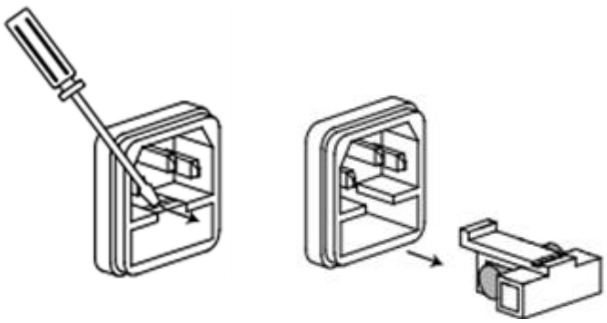
Warning: Disconnect the line cord at the rear panel and remove all test leads connected to the instrument before replacing the line fuse. Failure to do so could expose the operator to hazardous voltages that could result in personal injury or death.

Use only the correct fuse type. Failure to do so could result in personal injury or instrument damage.

Voltage	Fuse
100 - 120 V AC	250 V, F1AL
200 - 240 V AC	250 V, F0.5AL

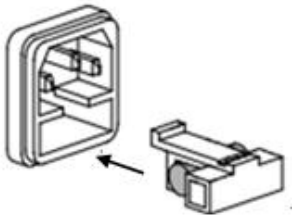
To perform the line fuse replacement, follow these steps:

1. Turn off the multimeter, remove all measurement leads and other cables from the instrument, including the power cord.
2. Use a flat-blade screwdriver to remove the fuse box.



3. Replace the fuse with a new one, which should match with the voltage;

install it into the fuse box, and push the fuse box back on to the rear panel.



Jul. 2026 edition V1.0.0

Copyright © LILLIPUT Company. All rights reserved.

The LILLIPUT's products are under the protection of the patent rights, including ones which have already obtained the patent rights and those which are applying for. The information in this manual will replace all that in the materials published originally.

The information in this manual was correct at the time of printing. However, LILLIPUT will continue to improve products and reserves the rights to change specification at any time without notice.

owon® is the registered trademark of the LILLIPUT Company.

Fujian LILLIPUT Optoelectronics Technology Co., Ltd.

No. 19, Heming Road

Lantian Industrial Zone, Zhangzhou 363005 P.R. China

Tel: +86-596-2130430 **Fax:** +86-596-2109272

Web: www.owon.com.cn **E-mail:** info@owon.com.cn

7007020100259