

SDM4000Aseries

digital multimeter

quick guide

CN02A



深圳市鼎阳科技股份有限公司
SIGLENT TECHNOLOGIES CO.,LTD

Copyright and Notice

copyright

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certified product

SIGLENT Certify that this product complies with China's national product standards and industry product standards, and further certify that this product complies with other international standards organizations

Relevant standards for membership.

contact us

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URL: <https://www.siglent.com>

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General safety summary

Understand the following safety precautions to avoid personal injury and prevent damage to this product or any other product connected to it. in order to avoid

To avoid possible dangers, please be sure to use this product according to regulations.

- Use appropriate power cord Only use the power cord approved for this product in your country.
- Ground the product This product is grounded through the power cord grounding conductor. To prevent electric shock, the grounding conductor must be connected to the earth. When using this product
Be sure to properly ground this product before connecting the input or output terminals.
- Correctly connect the signal cable The signal ground wire is at the same potential as ground. Do not connect the ground wire to high voltage. During testing, do not touch exposed
Contacts and components.
- View ratings for all terminals To prevent fire or shock hazard, check all ratings and marking instructions for this product. in connection
Before purchasing, please read this product manual for further information about ratings.
- Do not operate the product if you suspect it is malfunctioning If you suspect the product is damaged, have it inspected by qualified maintenance personnel.
- Avoid circuit exposure Do not touch exposed connectors and components after power is turned on.
- Do not open the cover. Do not operate this product with the instrument case open.
- Use appropriate fuses. Only use fuses with specifications specified for this product.
- Use suitable overvoltage protection to ensure that no overvoltage (e.g. caused by lightning) reaches the product, which could otherwise cause the operator to suffer
electric shock.
- Anti-static protection Static electricity can cause damage to the instrument, so testing should be conducted in an anti-static area as much as possible. Before connecting the cable to the instrument, it should be
The conductor is briefly grounded to discharge static electricity.
- Maintain good ventilation Improper ventilation can cause the temperature of the instrument to rise, which may cause damage to the instrument. Good ventilation should be maintained during use, and regular inspections should be carried out

Check vents and fans.

- Only qualified technicians should perform repair procedures
- Do not operate in humid environment
- Do not operate in flammable and explosive environments
- Keep product surfaces clean and dry
- Prevent fire or personal injury
- EMC testing to Class A standards, based on EN 61326-1: 2013

Input terminal protection limit

Protection limits are defined for the input terminals:

1. main input (HI and LO) terminal.

HI and LO Input terminals are used for voltage, resistance, capacitance, continuity, frequency, diode and temperature measurements. These two terminals define the

The next two protection limits:

- HI arrive LO Protection limit: HI arrive LO The protection limit is 1000 VDC or 750 VAC, which is also the maximum voltage that can be measured.

This limit can also be expressed as the maximum 1000 Vpk.

- LO to the limit of earth protection: LO The input terminals can safely "float" with respect to ground to a maximum 500 Vpk. HI Terminal protection

The maximum protection limit relative to the ground is 1000 Vpk. Therefore, the sum of the "floating" voltage and the measured voltage must not exceed 1000 Vpk.

2. sampling (HI sense and LO sense) terminal.

HI Sense and LO Sense Terminals are used for four-wire resistance measurements. These two terminals define the following two protection limits:

- HI sense arrive LO sense Protection limit: HI sense and LO sense The protection limit is 200 Vpk.
- LO sense arrive LO Protection limit: LO sense and LO The protection limit is 2 Vpk.

3. Current input (I) terminal.

I and LO Terminals are used for current test measurements. Rear panel fuse convection over I terminal current provides the maximum 10 A Protection limit.

Note: The voltage of the current input terminal is the same as LO. The terminal voltages are about the same. To maintain good protection, use only the specified type and grade

fuse to replace the fuse.

IEC Measurement category II Overvoltage protection

To avoid the risk of electric shock, SDM4000A Series digital multimeters provide overvoltage protection for power mains connections that meet both of the following conditions.

1. HI and LO Input terminals in measurement category II conditions (described below) connected to the power mains.
2. The maximum line voltage for power mains is 300 VAC.

warn:

IEC Measurement category II Includes electrical devices connected to the mains through an outlet on a branch circuit. These devices include most small appliances,

Test equipment and other equipment plugged into branch circuit outlets.

SDM4000A Series digital multimeters can be used to make measurements like this: HI and LO The input terminals are connected to the power mains in these devices, or

Connect itself to the branch outlet. but, SDM4000A series of digital multimeters HI and LO The input terminals must not be connected to permanently installed electrical

Electrical mains in gas installations, such as main circuit breaker panels, distribution panel disconnect boxes, or permanently wired motors. These devices and circuits are prone to excessive

PassSDM4000AThe digital multimeter protects against overvoltage phenomena at the limit.

Notice:

higher than300VACThe voltage can only be measured in a circuit disconnected from the power mains. However, transient overcurrents also occur in circuits disconnected from the power mains

pressure.SDM4000ASeries multimeters can safely withstand high2500Vpkaccidental transient overvoltage. Do not use this device to measure transient

Circuits with voltages that may exceed this level.

Safety terminology and notations

Terms used in this manual:

WARNING: Warning statements identify conditions and actions that may be hazardous to life.

CAUTION: Cautionary statements identify conditions and actions that may cause damage to this product and other property.

CAT II (300V) IECMeasurement categoryII. in categoryIIIIn an overvoltage condition, the input may be connected to the electrical mains (up to300VAC).

Terms used on this product:

- DANGER** Indicates that there is a direct risk of injury near the mark.
- WARNING** Indicates a potential hazard of injury exists near the mark.
- CAUTION** Indicates a potential hazard to this product and other property.

Markings used on this product:



Warning high voltage



Careful



protective terminal



Measurement ground terminal



Case ground

Maintenance and cleaning

maintenance:

When storing or placing the instrument, do not expose it to direct sunlight for long periods of time.

clean:

Please clean the instrument frequently according to usage.

Methods as below:

1. Use a soft cloth to wipe loose dust from the outside of the instrument and connectors. When cleaning the LCD screen, be careful not to scratch the transparent plastic protective screen.
2. Use a soft cloth dampened with water to clean the instrument, making sure to disconnect the power supply. For a more thorough cleaning, use 75% isopropyl alcohol in water solvent.

NOTE: To avoid damaging the instrument, do not use any corrosive or cleaning agents, and do not expose it to mist, liquids, or solvents. in re

Before using the instrument, make sure it is dry to avoid electrical short circuit or even personal injury caused by moisture.

General inspection

When you get a new instrument, it is recommended that you check it step by step as follows.

- Check for damage caused by shipping issues

If the packaging box or foam protective pad is found to be seriously damaged, please keep it until the complete machine and accessories pass electrical and mechanical tests.

- Check the whole machine

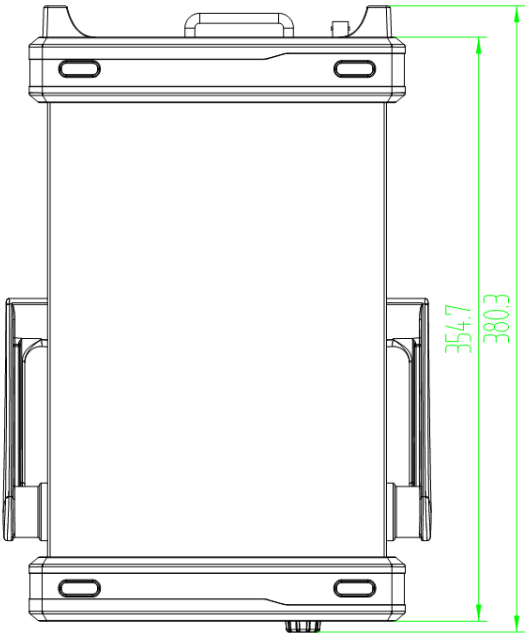
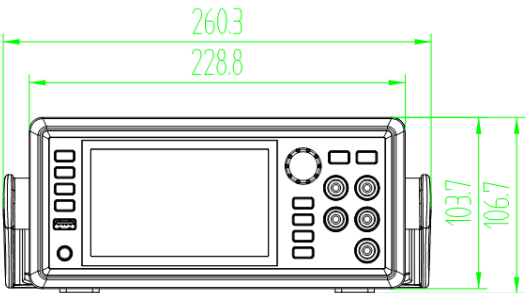
If you find any external damage to the instrument, please contact the person responsible for this service **SIGLENT** Contact your dealer or local office, **SIGLENT** Will arrange for repair or replacement

Get a new machine.

- check the attachment

Regarding the details of the accessories provided, there are detailed instructions in the "Packing List". You can refer to this to check whether the accessories are complete. If the attachment is found to be missing

missing or damaged, please contact the person responsible for this business **SIGLENT** Contact your dealer or local office.



top view

Panel introduction



front panel

1. Short press/long press the power button to turn on/off the multimeter
2. USB Host Through this interface, the current instrument status or measurement data can be stored in external devices, and can also be used when needed.
Read stored instrument status from an external device if necessary or
3. Operation menu buttons Press any button to activate the corresponding menu
4. Touchscreen display shows menus and measurements for current functions
Parameter settings, system status, prompt messages, etc.
You can use your finger to touch the screen area to perform related operations

5. Knob

6. Trigger and measurement function buttons
7. The left and right direction keys move the cursor, and their functions are the same as the left/right rotation of the knob.
8. The signal under test at the signal input terminal is connected through this input terminal.
multimeter. Different measurement objects have different measurement connection methods.
For details, please refer to the instructions on "Measurement Connection" in Basic Operations.



rear panel

1. The power socket multimeter can input two specifications of AC power source. Use the power cord provided to pass AC power through the
Connect the jack to the multimeter

Note: Before connecting the AC power, please select the correct power voltage range (use voltage selector)

2. Mains fuse

3. Please select the AC voltage selector according to the AC voltage you are using.
Choose the correct voltage range according to the specifications. Multimeters are available in two types
AC input voltage range: 110 V, 220 V

4. Inspection collection card interface (optional) multimeter supports installation 16 The
external inspection card of the channel can be selected by the user.

5. USB Host interface

6. USB Device Interface support USB-TMC protocol. Can communicate with the computer and
control the universal device through the host computer software
surface

7. LAN Interface support VXI-11 protocol. Connect the multimeter
to the LAN through this interface for remote control

8. VM Each time the output multimeter completes a
sampling, it will output a 5V pulse

9. External trigger interface You can connect an external trigger signal to
This interface is used to trigger the multimeter. At this time, the multimeter needs to be
The trigger source is set to external

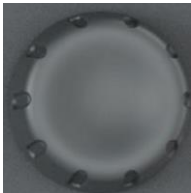
10. Current input fuse

11. Security lock hole If necessary, you can use a security lock (please purchase
it yourself) to lock the digital multimeter in a fixed position

Operation menu button

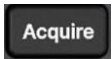
	Measurement menu key, you can set the measurement function and parameters related to the corresponding function.
	Function selection menu key to select or set measurement auxiliary functions, mathematical tools, triggered sampling, display mode, dual display function and probe hold
	Auxiliary system function menu keys for storage/recall, file management,I/OConfiguration, test management, system settings, time settings, etc. to set or view
	Provide help information for common operations

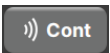
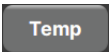
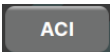
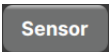
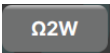
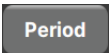
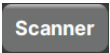
Knob



Turn the knob left/right to move the cursor, and press to select the menu item where the cursor is located or turn the menu item function on/off.

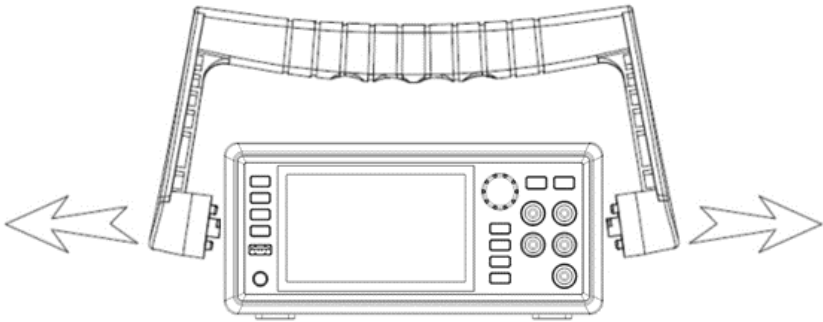
Trigger and measurement function buttons

	single trigger
	Automatic trigger/stop
	sampling, triggering,VMCExport and save read settings
	Open the measurement function selection menu and select the following measurement functions:

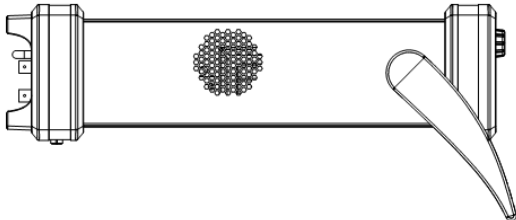
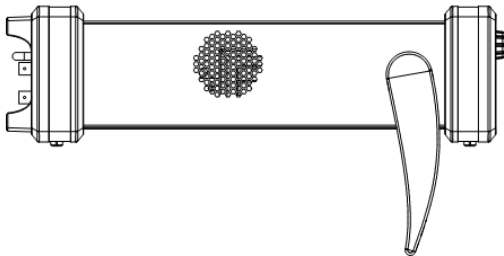
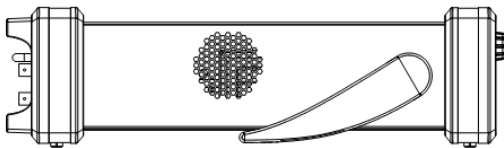
	Measure DC voltage		Test connectivity
	Measure AC voltage		test diode
	Measure DC current		measure temperature
	Measure AC current		Measuring sensor
	Measure the resistance of two wires		Measurement period
	Measure four-wire resistance		Measure capacitance
	Measurement frequency		Enable scanning card functionality

Preparation before use

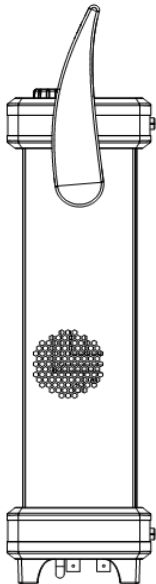
 Adjust the support legs



Adjust the handle



flat position



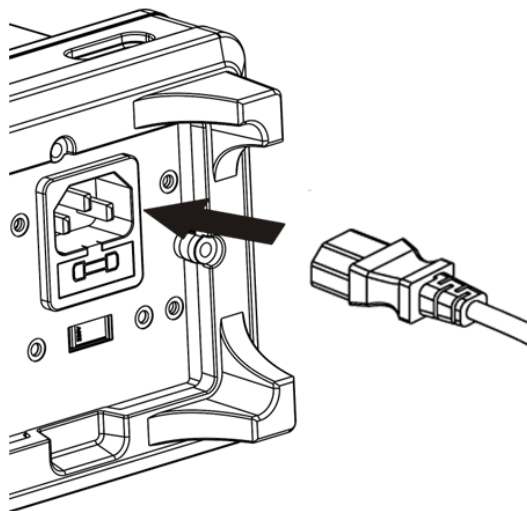
move Place



Enable multimeter

Before connecting the power cord, please select the correct voltage range from the voltage selector on the rear panel according to the AC specifications you are using, and then connect as shown below.

Connect to power.



Power connection diagram

After the power cord is connected and the instrument is powered on, press the power button on the front panel. At this time, please check whether the instrument starts normally. If not, please press

Follow these steps to check:

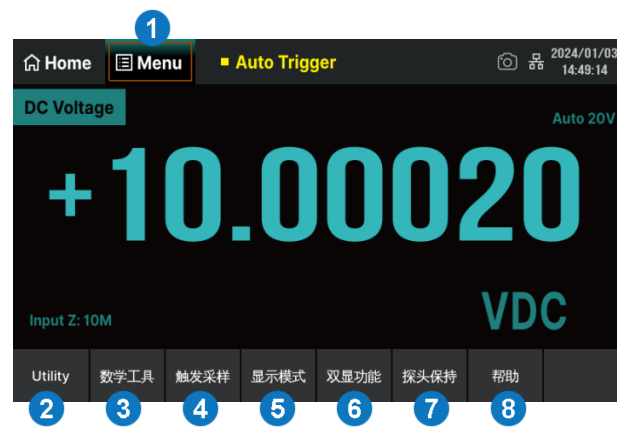
1. Check whether the power cord is in good contact;
2. Check whether the power switch on the front panel is pressed firmly;
3. If the instrument still does not start after checking, please check whether the fuse has been blown, and if necessary, replace the fuse;
4. If the instrument still does not start after the above checks are correct, please contact **SIGLENT** connect.

user interface



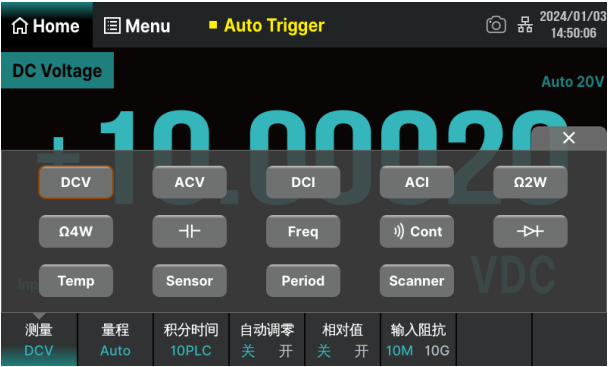
Homeinterface

1. HomeMenu options The function is equivalent to the front panel left side "Home" button
2. Trigger mode
3. Quick screenshot logo
4. Network status prompt
5. Current time display
6. Measurement function
7. Measurement results
8. Current range used
9. Current input impedance
10. Select the measurement function in the operation menu and perform this function
Related parameter settings



Menuinterface

1. MenuMenu options Functionally equivalent to the one on the left side of the front panel "Menu" button
2. UtilityPerform storage/recall, file management, interface, test management, system, time and LXI Related function settings.
The function is equivalent to the "Utility" button
3. Math tools enable or disable statistics, limits, dB/dBm, relative value function
4. Triggered sampling sampling mode (continuous/recorder/digitizer) settings, trigger settings, VMCO output settings and save readings
5. Display mode can be set to number/bar graph/trend graph/histogram picture
6. Dual display function simultaneously measures two characteristics of the same input signal
7. Probes remain up to spawnable 8 readings
8. HelpBuilt-in help system for easy viewing of help information



ClickHomeClick the "Measurement" menu at the bottom left of the interface, or click

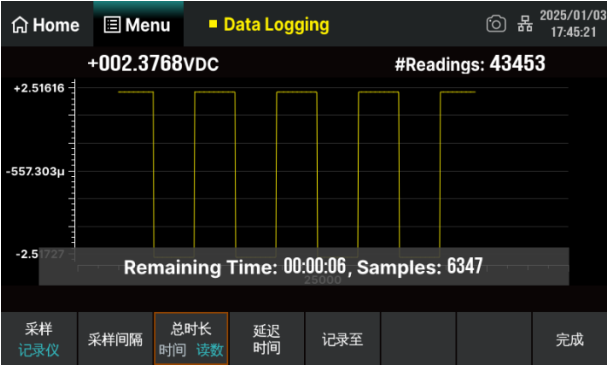
Panel's"Function"button to enter the selection interface of measurement functions.

face (as shown on the left). Touch or use the knob according to measurement needs

Select the function button on the interface and set the parameters related to the function

set up.

Logger



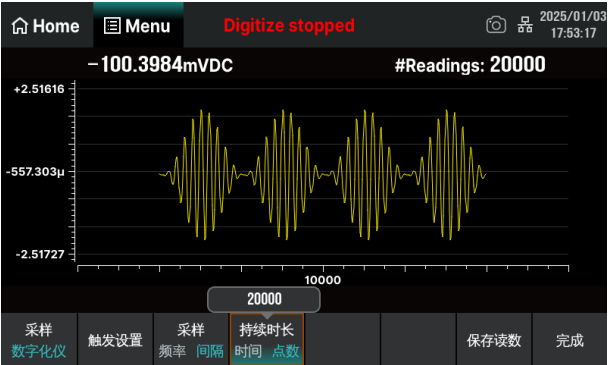
Supports AC and DC voltage, AC and DC current, resistance, capacitance, frequency,

Cycle and temperature data are logged. Logging interval0.1 s ~ 3600

s, record to the maximum recordable memory2Mpoint, record to file maximum

recordable360Mpoints, the longest that can be recorded100Hour.

Digitizer



Supports digitizing DC voltage and DC current and saving readings.

Highest sampling rate50kSa/s, the maximum single collection can2Mpoint, bring

Width10kHz.

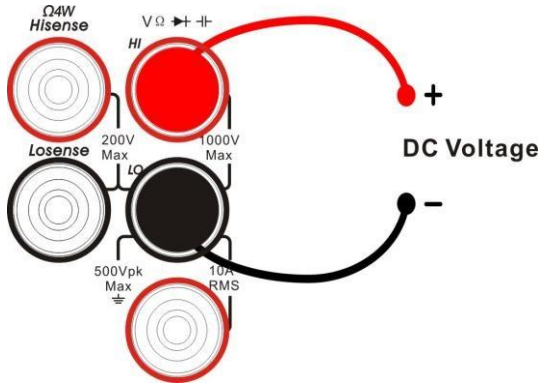
Basic operations



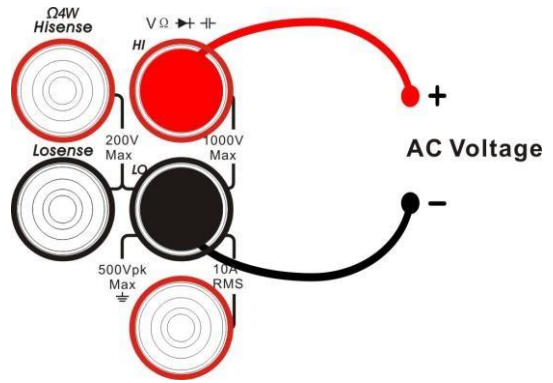
Measurement connection

Multimeters offer a variety of measurement functions. After selecting the required measurement function, please connect the measured signal (device) to the multimeter as shown in the figure below.

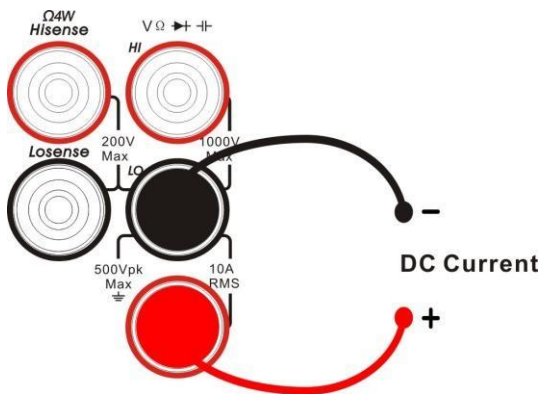
DC voltage measurement (DCV)



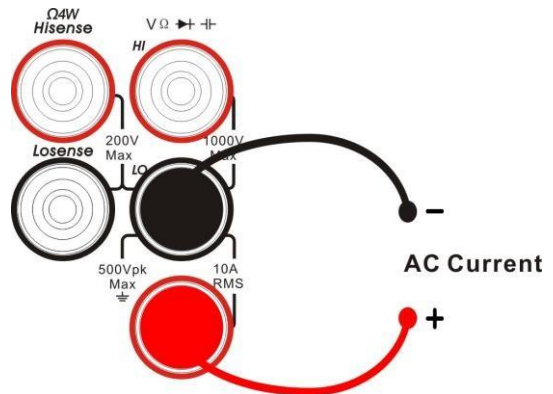
AC voltage measurement (ACV)



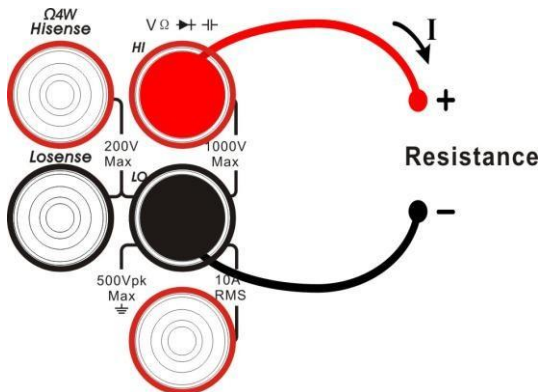
DC current measurement (DCI)



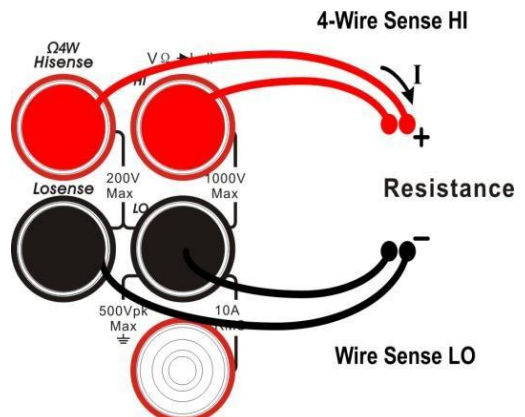
AC current measurement (ACI)



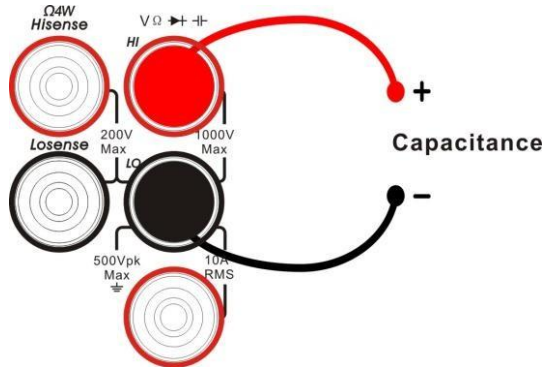
Two-wire resistance measurement ($\Omega 2W$)



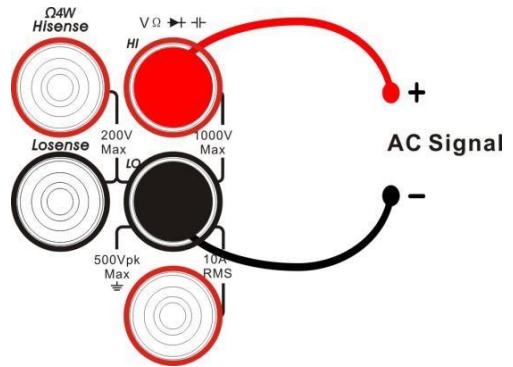
Four-wire resistance measurement ($\Omega 4W$)



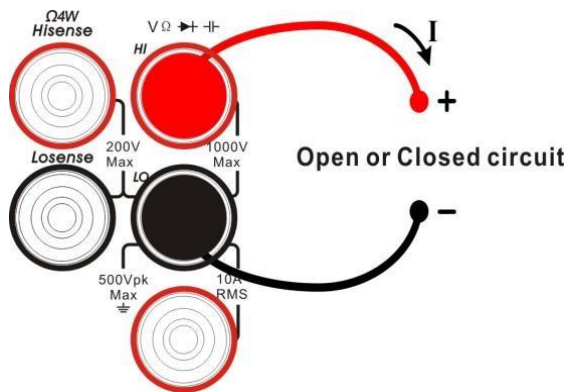
Capacitance measurement (Cap)



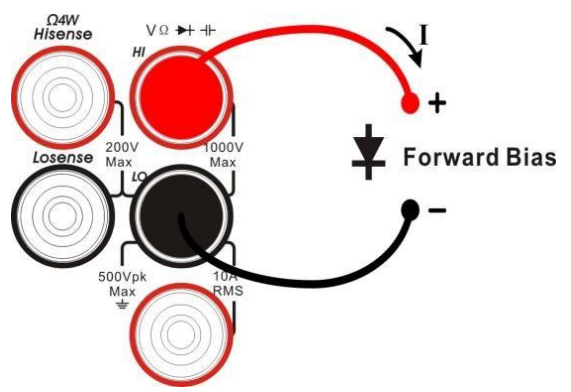
frequency/period measurement (Freq/Period)



Connectivity Measurement (Cont)

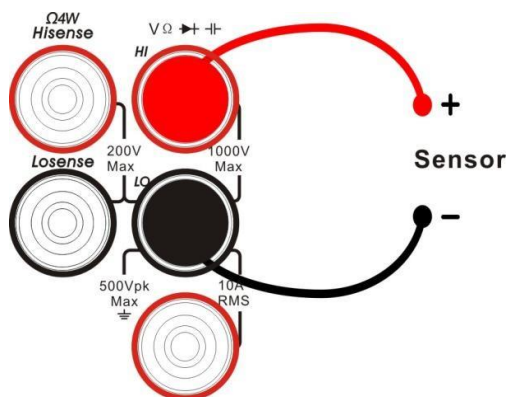


Diode measurement (Diode)



Temperature measurement (Temp)

(Applicable to thermocouples, Thermal resistance type sensor)



Use built-in help

To obtain the built-in help information of this product, press [Help] key to enter the help menu interface, select the item that requires help, and view the corresponding help information.

The built-in help information list is as follows:

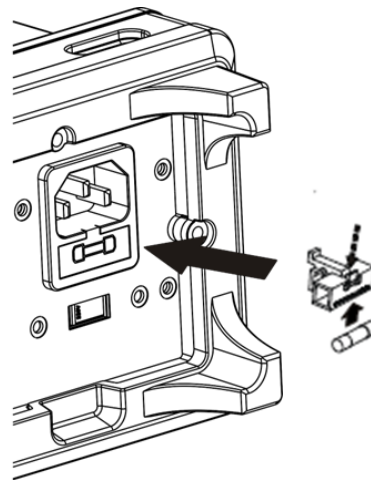
- | | |
|---------------------------|--|
| 1.basic measurements | 6.Storage function |
| 2.temperature measurement | 7.Optional multi-channel scanning card |
| 3.Capacitance measurement | 8.Key conventions and tips |
| 4.math functions | 9.support |
| 5.Dual display function | |

Replace power fuse

The multimeter comes with a power fuse installed at the factory. This fuse is a fast-acting, explosion-proof, T315mA, 5x20mm of fuse. like

If the fuse needs to be replaced, please replace it as follows:

- 1.Turn off the power of the multimeter;
- 2.Use a slotted screwdriver to press down on the tab (dotted arrow) (finger position), then pull out the fuse holder;
- 3.Select the correct voltage range at the voltage selector;
- 4.Replace the fuse with the specified specification;
- 5.Reinstall the fuse holder into the slot.



Replace power fuse

Replace current input fuse

The multimeter has a current input fuse installed at the factory to provide maximum 10A Protection limit. If you need to replace the current fuse, please

Replace as follows:

- 1.Turn off the power of the multimeter;
- 2.Use a flat-blade screwdriver to turn it counterclockwise and pull out the fuse holder;
- 3.Replace the fuse with the specified specification;
- 4.Reinstall the fuse holder into the slot.

Common troubleshooting

The following lists possible faults and troubleshooting methods that may occur during use of the digital multimeter. When you encounter these failures, please follow the appropriate steps

Process it. If it cannot be processed, please contact us in time. **SIGLENT** Company contact.

1. If you press the power button, the digital multimeter screen remains black with no display:

- 1) Check whether the power connector is connected properly.
- 2) Check whether the power switch on the front panel is pressed firmly.
- 3) Check whether the power fuse is blown. If it is blown, please replace the fuse as required.
- 4) If it still doesn't start properly, please contact **SIGLENT** connect.

2. Connecting a current signal does not change the reading:

- 1) Check whether the test leads are correctly inserted into the current jack and LO jack.
- 2) Check whether the current level fuse on the back has blown.
- 3) Check whether the measurement gear has been correctly switched to DC I or AC I gear.
- 4) Check if the input is AC I, while the gear is at DC I gear.

3. U Disk device not recognized:

- 1) examine whether the disk device can work properly.
- 2) Confirm to use Flash type U disk device, this instrument does not support hard disk type U disk device.
- 3) If it still doesn't work properly U disk, please contact **SIGLENT** connect.

More product information

You canUtility"system setup"Get your device information and status. For more information about this product, please check the following

Download the manual (you can log inSIGLENTOfficial website download<http://www.siglent.com>).

- 《SDM4000ASeries Digital Multimeter User Manual": Provides detailed description of the functions of this product.
- 《SDM4000ASeries Digital Multimeter Data Manual": Provides the main features and technical specifications of this product.
- 《SDM4000ASeries Digital Multimeter Programming Manual": Provides the programming instruction set for this product.

Warranty Card



please
use
household
service
must
fill
Write
back
along
empty
Wire
Cut
Down
send
return

Customer information feedback registration form

gratefulWhen you purchase a product from Dingyang Technology, please keep this product warranty card properly. andles special invoice

Product qualification certificate
Quality Certificate

Manufacturer Name: Shenzhen Dingyang Technology Co., Ltd.

Qualified
Certified

QA
PASS

Product number
Model

serial number
Serial No.

Service center:

Service Center Address: First Floor, Building 5, Antongda Industrial Park, Liuxian 3rd Road, District 68, Baoan District, Shenzhen City, Guangdong

Province Service and Support Hotline: 400-878-0807

Email: Service@siglent.com

Maintenance registration card

Maintenance record one	Fault phenomenon	
	date of receipt	
	Troubleshooting	
	maintenance engineer	
	return date	
Maintenance record two	Fault phenomenon	
	date of receipt	
	Troubleshooting	
	maintenance engineer	
	return date	

Company Name: _____

Contact name: _____

contact number: _____

E-mail: _____

mailing address: _____

Purchase date: _____

Product number: _____

Product Serial Number: _____

hardware version: _____

Software version: _____

Fault phenomenon description:

Warranty Summary

Shenzhen Dingyang Technology Co., Ltd. (SIGLENT TECHNOLOGIES CO., LTD) promises that if its products malfunction during normal use during the warranty period, SIGLENT will repair or replace parts free of charge for the user.

This warranty applies to SIGLENT products purchased by users in mainland China from regular mainland channels. SIGLENT factory direct sales channels, authorized agent sales channels and authorized online sales channels. When purchasing SIGLENT products, users have the right to require merchants to provide SIGLENT authorization documents to protect their own interests.

Standard warranty promise

SIGLENT promises a three-year warranty for the main unit of this product and a one-year warranty for modules, probes, and batteries. SIGLENT

The product warranty start date defaults to the date on the customer's valid purchase voucher (tax invoice). Unable to provide valid purchase

If the certificate is provided, the product's factory date will be postponed by 7 days (default shipping time) as the warranty start date. Maintenance

commitment

For free repair products, SIGLENT promises to complete the repairs within 10 working days after receiving the faulty product. For products with paid maintenance, SIGLENT will repair the faulty product within 10 working days after the user pays the fee. If the user confirms not to repair, SIGLENT will return the faulty product to the customer.

The following situations are not included in SIGLENT's free maintenance scope: 1. Instrument failure or damage caused by

incorrect installation or use in a non-product-specified working environment;

2. Product appearance damage (such as burns, extrusion deformation, etc.);

3. The product warranty seal has been torn or has signs of being uncovered;

4. Accidental damage caused by using a power supply or power adapter not approved by SIGLENT;

5. Failure or damage caused by force majeure factors (such as earthquakes, lightning strikes, etc.); This warranty card replaces the previously released version of the warranty card. Any other form of warranty terms shall be subject to the above warranty description. SIGLENT has the sole responsibility for maintenance matters final interpretation right.

contact us

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statement

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