



Safety Information


Do not operate the tester if the body of meter or the test lead look broken. Check the main function selector and make sure it is at the correct position before each measurement.
Do not perform resistance and continuity test on a live power system. Do not apply voltage between the test terminals and test terminal to ground that exceed the maximum limit record in this manual.
Exercise extreme caution when measuring live system with voltage greater than 60V DC or 30V AC.
Keep the fingers after the protection ring when measuring through the test lead. Change the battery when the  symbol appears to avoid incorrect data.

Environmental Conditions:

Altitude up to 2000 meters.
Operating temperature: 0°C ~ 40°C, <80% RH, non-condensing
Storage temperature: -10°C ~ 60°C, <70% RH, battery removed
Pollution Degree: 2
Installation Categories II

Explanation of Symbols:

 WARNING! Refer to operation Instructions.

Approvals :  IEC 1010 600V CATIII, 300V CATIII

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Electrical Specification

The accuracy specification is defined as $\pm(\dots\% \text{reading} + \dots \text{count})$ At 23±5°C, $\leq 80\% \text{RH}$

DCV (Autorange)			
Range	Resolution	Accuracy	Input Impedance
400V	0.1V	1%rdg.±2dgt.	10MΩ
600V	1V		

ACV (Autorange)			
Range	Resolution	Accuracy	Input Impedance
400V	0.1V	1.5%rdg.±5dgt.	10MΩ
600V	1V		

DCA (Autorange)			
Range	Resolution	Accuracy	Overload Protection
40A	± 0.01A	2.5%rdg.±10dgt.	600Arms
400A	0.1A		

ACA (Autorange)			
Range	Resolution	Accuracy	Band Width
40A	0.01A	2%rdg.±10dgt.	50Hz~500Hz
400A	0.1A		

Ohm (Ω)			
Range	Resolution	Accuracy	MAX Test Voltage
400Ω	0.1Ω	1%rdg.±2dgt.	1.5VDC

Continuity (•••)			
Range	Active Region	MAX Test Voltage	Overload Protection
•••	<40 Ohm	1.5VDC	600Vrms


Specification


General Specification

Digital Display:
3 3/4 digits LCD display with maximum reading 3999


Analog Display:
42 segments fast analog bar display

Symbol and Scale range:
adjust automatically according range and input signal

Polarity:
When negative signal in apply to the tester,  will show.

Over Load:
When the signal larger than the maximum will be shown 

Sample Rate:
2 times/sec for digital data
20 times/sec for analog bar

Low Power Indication:
When the battery is under the proper operation range,  will appear on the LCD display.

Power Source:
LR03 or AAA 1.5V battery x 2.

Auto Power Off:
If there is no key or dial operation for 30 minutes, the meter will power itself off to save battery consumption.

Battery Life: Approx. 50hrs (Alkaline Battery)

Power Consumption: 50mW

Clamp opening size: 25mm

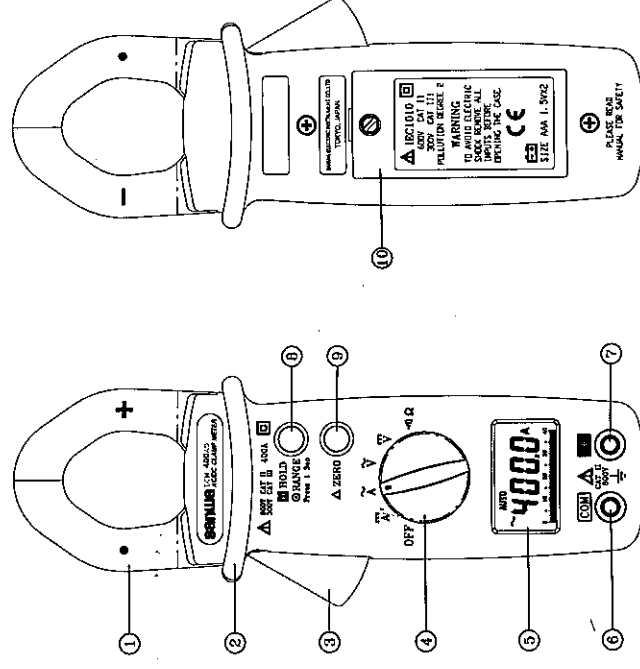
Dimension (L x W x H):
193 x 50 x 28mm, 7.60 x 1.97 x 1.1 inch

Weight: 230g, 8.11OZ. (include battery)

Accessory:
Instruction Manual, Carrying case, Test lead, Battery 1.5V x 2

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Instrument Familiarization



- ① Current Sensing Clamp
- ② Safety protection ring
- ③ Jaw-opening handle
- ④ Main function selector
- ⑤ LCD display
- ⑥ COM input terminal
- ⑦ Positive input terminal
- ⑧ Data hold & Manual range button
- ⑨ Zero button
- ⑩ Battery cabinet

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SANWA

DCM400AD DIGITAL CLAMP METER

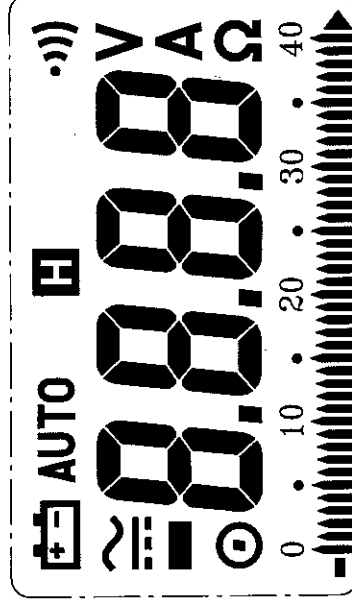
SANWA












**SANWA ELECTRIC
INSTRUMENT CO.,LTD.**
Dempa Bldg,Sotokanda2-Chome
Chiyoda-Ku,Tokyo,Japan

INSTRUCTION MANUAL



Symbol Definition



-  Low battery indication
-  AUTO
-  Hold Data indication
-  Continuity function indication
-  Voltage measurement indication
-  Current measurement indication
-  Alternative source indication
-  Direct source indication
-  Resistance
-  Polarity indication
-  Analog bar graph indication


Button Instruction

Zero Button

Press Zero button to enter the Zero mode, "Δ" annunciate turn on and Zero the display and the reading is stored as reference value for subsequent measurement.
Press it again, the "Δ" annunciate blinking and memorized reference value will display.
Press and hold down zero button for 2 second to exit the zero mode.
When the tester is under zero mode the auto range function will be disabled.

Data Hold & Manual Range Button

The user may hold the present reading and keep it on the display by pressing the "Hold" button.
When the hold data is no longer needed, one may release the data-hold operation by press "Hold" button again.

One may hold present reading by press the hold button instantaneously. One may also change the measuring scale range by press and hold the  RANGE button. When the decimal point changes, the user should release the button and scale range will stay at the setting range. If the user press and hold the button for more than 2 seconds, the tester will be in auto range mode again.

Disable Auto power off

Press and hold "ZERO" button and then the power on the meter.

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Measuring Instrument

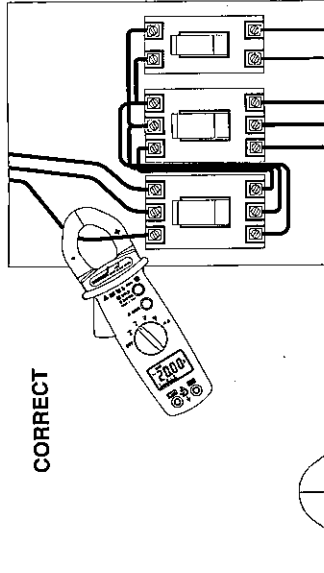
AC Current Measurement

Switch the main function selector to \tilde{A} range. Open the clamp by pressing the jaw-opening handle and insert the cable to be measured into the jaw.

Close the clamp and get the reading from the LCD display.

Note:

Before this measurement, disconnect the test lead with the meter for safety. In some occasions that the reading is hard to read, push the HOLD button and read the result later.



INCORRECT

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Resistance Measurement

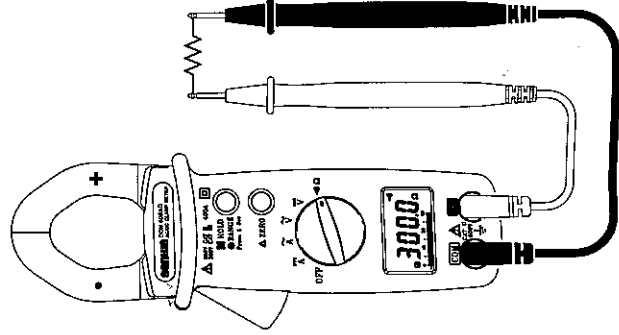
Switch the main function to Ω range.

Connect red test lead to “+” terminal and black one to the “COM” terminal. Connect tip of the test leads to the points where the value of the resistance is needed.

Read the result from the LCD display.

Note:

When take resistance value from a circuit system, make sure the power is cut off and all capacitors need to be discharged.



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DC Current Measurement

Switch the main function selector to \bar{A} range.

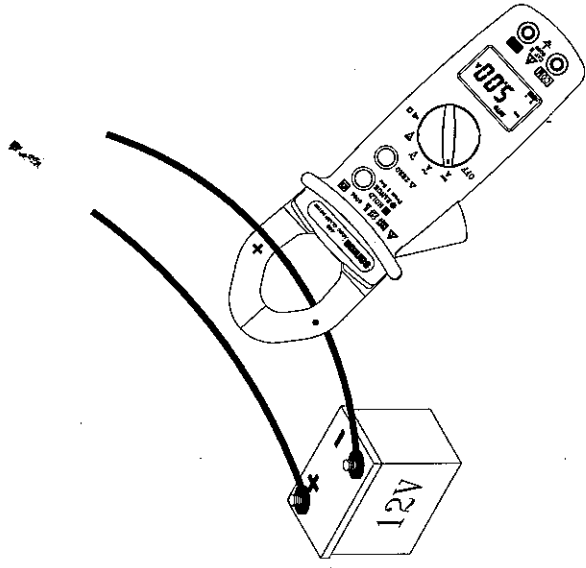
Press ZERO button to enter the zero reading. Before measuring current larger than 40A, adjust the scale to 400A range by pressing the range button and press ZERO button again.

Open the clamp by pressing the jaw-opening handle and insert the cable to be measured into the jaw.

Close the clamp and get the reading from the LCD display.

Note:

Before this measurement, disconnect the test lead with the meter for safety. In some occasions that the reading is hard to read, push the HOLD button and read the result later.



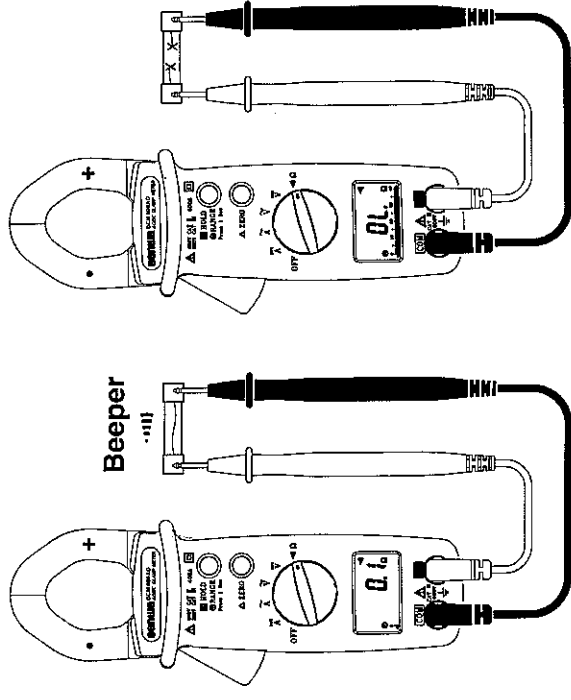
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Continuity Test

Switch the main function to Ω range.

Connect red test lead to “+” terminal and black one to the “COM” terminal. Connect tip of the test leads to the points where the conduction condition needed.

If the resistance is under 40Ω, the beeper will sound continuously.



Short circuit

Open circuit

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ACV Measurement

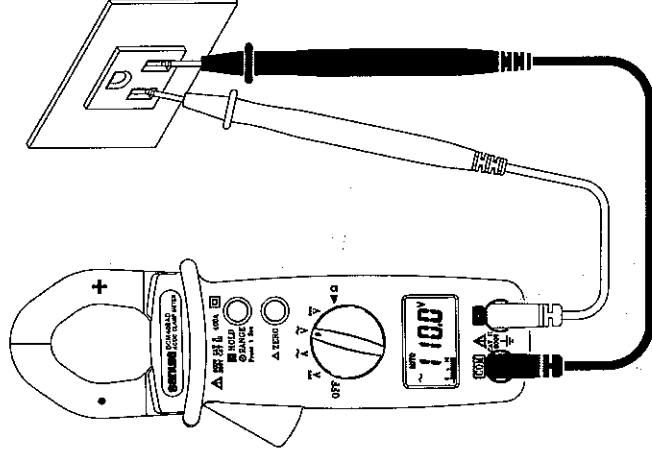
WARNING!

Maximum Input Voltage is 600V AC/DC. Do not attempt to take any voltage measurement that may exceed to avoid Electrical shock hazard and/or damage to this instrument.

Switch the main function selector to \tilde{V} range.

Connect red test lead to “+” terminal and black one to the “COM” terminal. Measure the voltage by touch the test lead tips to the test circuit where the value of voltage is needed.

Read the result from the LCD display.



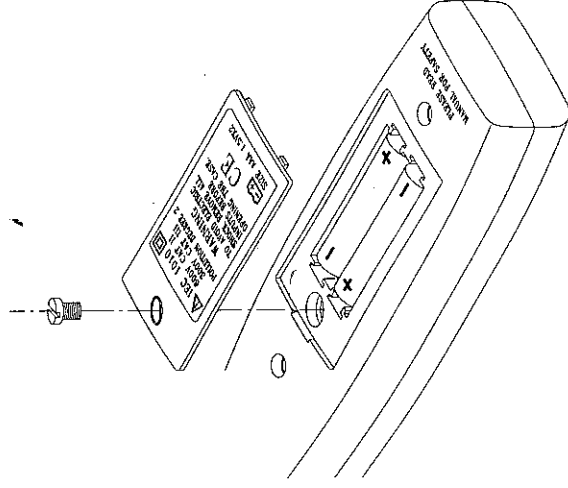
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Battery Changing

WARNING!

To prevent electrical hazard or shock, turn off clamp meter and disconnect test leads before removing battery cover.

1. When the battery voltage drop below proper operation range the symbol will appear on the LCD display and the battery need to be changed.
2. Before changing the battery, switch the main dial to “OFF” and disconnect test leads. Open the cover of the battery cabinet by a screwdriver. Replace the old batteries with two LR03 or AAA size batteries.
3. Close the battery cabinets cover and fasten the screw.



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DCV Measurement

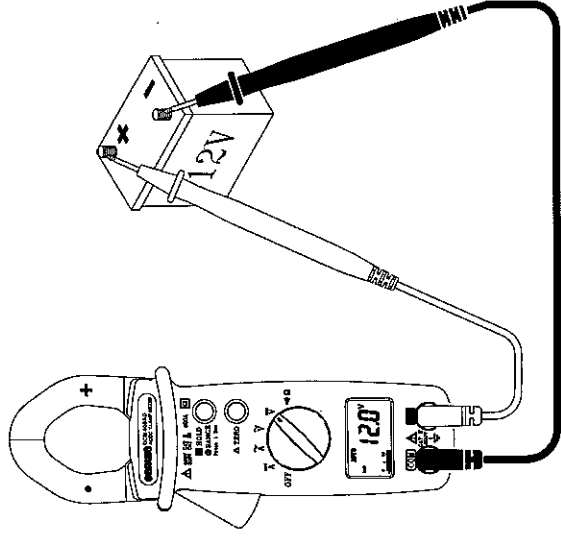
WARNING!

Maximum Input Voltage is 600V AC/DC. Do not attempt to take any voltage measurement that may exceed to avoid Electrical shock hazard and/or damage to this instrument.

Switch the main function selector to \bar{V} range.

Connect red test lead to “+” terminal and black one to the “COM” terminal. Measure the voltage by touch the test lead tips to the test circuit where the value of voltage is needed.

Read the result from the LCD display.



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Maintenance

Warning

Before open the battery door, disconnect both test lead and never uses the meter before the battery door is closed.

Caution

To avoid contamination or static damage, do not touch the circuit board without proper static protection.

Remark

1. If the meter is not going to be used for a long time, take out the battery and do not store the meter in high temperature or high humidity environment.
2. When take current measurement, keep the cable at the center of the clamp will get more accurate test result.
3. Repairs or servicing not covered in this manual should only by qualified personal.

Clearing

Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents on this instruments.

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