



Instruction Manual

**UK
CA**

**AC / DC Earth Leakage
Clamp Meter to 0.001A**

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1. SAFETY INFORMATION


Do not operate the tester if the body of meter or the test lead appear damaged.

Check the main function dial 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 indicated in this manual.

Ensure your hand and fingers are kept below the Safety Protection Ring (see 4-2 item 2).

Replace the battery when the  symbol appears to avoid incorrect readings.

Environmental Conditions

Operation Temperature: 0°C to 40°C(32°F to 104°F); < 80 % RH

Storage Temperature: -10°C to 60°C(14°F to 140°F); < 80 % RH

Explanation Symbols



Attention refer to operation Instructions.



Dangerous voltage may be present at terminals.



This instrument has double insulation.

Approvals:  EN61010 300V CAT IV

2. GENERAL SPECIFICATION


Digital Display:

4 digital liquid crystal (LCD), Maximum reading 5000 count.

Polarity:

When a negative signal is applied, the  signal appears.

Low Battery Indication:

When the battery is below the correct operation range,  will appear on the LCD display.

Sample Rate:

2 times/sec for digital data.

Power Source:

1.5V size AAA battery X 2

Typical battery Life: (without buzzer, backlight)

Type: 15 hours at DCA function;

60 hours at ACA and ACV function;

100 hours at DCV and Ohm function.

Auto Power Off:

If there is no key or dial operation for 30 minutes, the meter will power itself off to save battery consumption. This function can be disabled by pressing and holding the " **HOLD** " button then power the unit on

Over Load:

If the reading is greater than the maximum, the display indicates .

Maximum jaw opening:

∅ 23 mm

Dimensions:

206 x 76 x 33.5 mm

Weight:

262g (with batteries)

Accessories:

Carrying case, Batteries, Test Lead & Instruction Manual.

3. ELECTRICAL SPECIFICATION

The accuracy specification is defined as \pm (percent of reading + digit)
At $23\pm 5^{\circ}\text{C}$, $\leq 80\% \text{RH}$.

3-1 Direct Voltage

Range	Resolution	Accuracy
50V / 300V	0.01V / 0.1V	1.0% + 2dgts

Input impedance: 1 M Ω **3-2 Alternating Voltage (True RMS)**

Range	Resolution	Accuracy(40~1KHz)
50V / 300V	0.01V / 0.1V	1.2% \pm 5dgts

Input impedance: 1 M Ω **3-3 Direct Current**

Range	Resolution	Accuracy
300.0mA	0.1mA	1.0% + 10dgts
3.000A	0.001A	
10.00A	0.01A	3.0% + 10dgts

Influence of terrestrial magnetism: Less than $\pm 1.0\text{mA}$ Influence of CT opening and closing: Less than $\pm 1.0\text{mA}$

3-4 Alternating Current (True RMS)

Range	Resolution	Accuracy(50~60Hz)
300.0mA	0.1mA	1.0% + 5dgts
3.000A	0.001A	
20.00A	0.01A	

3-5 Resistance (Ω)

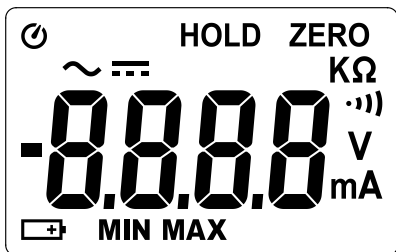
Range	Resolution	Accuracy
500 Ω	0.1 Ω	1.0% + 2dgts
5K Ω	1 Ω	
50K Ω	10 Ω	
500K Ω	100 Ω	







3-6 Continuity \cdot)

Range	Buzzer Function
\cdot)	Ohm < 100 Ω

4. DESCRIPTION OF THE INSTRUMENT

4-1 Description Of The Display



	Auto power off indication
	Polarity indication
	Low battery indication
	Alternative source indication
	Direct source indication
A	Current measurement indication
V	Voltage measurement indication
ZERO	ZERO indication
HOLD	Data hold indication
MAX	Maximum indication
MIN	Minimum indication
	Continuity test indication
K	Measurement unit
Ω	Resistance measurement indication
m	Measurement unit



TEST INSTRUMENT SOLUTIONS

Unit 12/14, Luddite Way Business Par, Rawfolds Way
Rawfolds, Cleckheaton, BD19 5DQ

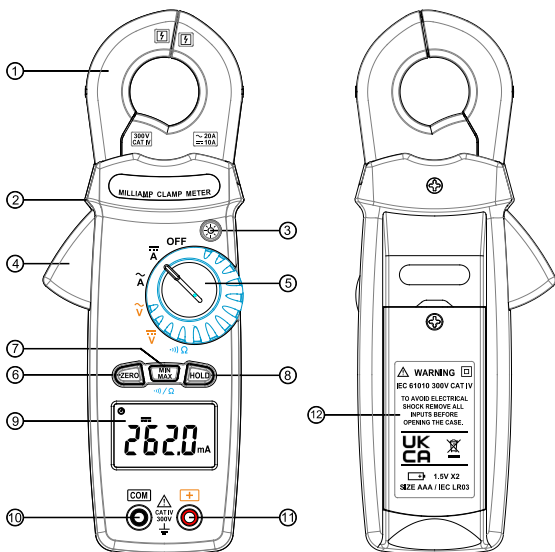
Telephone: 01274 752 407 Fax: 01274 870 175

Email: sales@tis-tic.co.uk

Web: www.testinstrumentsolutions.co.uk

GCA000262-12000

4-2 Description Of Front And Rear



- ① Current Sensing Clamp
- ② Safety protection ring
- ③ Backlight button
- ④ Clamp opening handle
- ⑤ Function select dial
- ⑥ ZERO button
- ⑦ Max/Min button
- ⑧ Data hold button
- ⑨ LCD display
- ⑩ COM input terminal
- ⑪ Positive input terminal
- ⑫ Battery compartment

5. BUTTON INSTRUCTION

5-1 HOLD Function

It is possible to freeze the value displayed by pressing the "**HOLD**" button.

Press the "**HOLD**" button again to exit the Hold mode.

5-2 MAX/MIN Function

When the "MAX/MIN" button is pressed, the meter enter MAX/MIN mode.

Press the button, to read MAX, MIN sequence. Press the button for 1 sec. or more to exit the MAX/MIN mode.

When you turn the rotary switch on the Continuity Test.

Press the "**MAX/MIN**" button to select Resistance measurement, press the "**MAX/MIN**" button again to select continuity test with buzzer.

5-3 ZERO Function

Press "**ZERO**" button to enter the Zero mode, **ZERO** Annunciate will appear and Zero the display. The reading is stored as reference value for subsequent measurement.

Press the "**ZERO**" button again, to exit the zero mode.

5-4 BACKLIGHT Function

When the "☀" button is pressed, the backlight will be turned on.

To disable the function, the button is pressed again. The backlight will be automatically turned off after 30 seconds.

6. MEASURING INSTRUCTION

6-1 ACA Measurement :

With the clamp disconnected from any conductor, switch the function selector to \tilde{A} range.

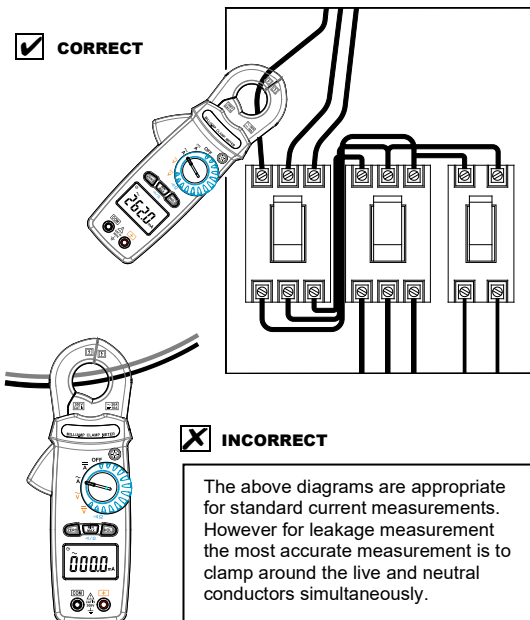
Open the clamp by pressing the jaw-opening handle and insert the Cable to be measured into the jaw.

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

Note:

Before this measurement, disconnect any test lead with the meter for safety.

In some cases where reading is difficult, press the HOLD button and read the result later.



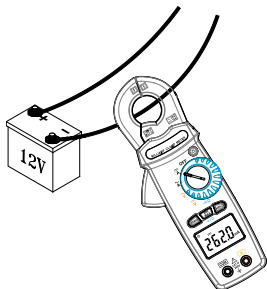
6.2 DCA measurement:

With the clamp disconnected from any conductor, switch the function selector to $\overline{\text{A}}$ range.

Press "ZERO" button to enter the zero reading.

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 panel.



Note:

Before these measurements, disconnect any test lead from the meter for safety.

In some cases where reading is difficult, press the "HOLD" button and read the result later.

6-3 ACV Measurement :

⚠ WARNING!

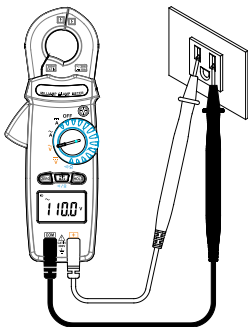
Maximum Input Voltage is 300V AC/DC. Do not attempt to Take any voltage measurement that may exceed this maximum to avoid Electrical shock hazard and/or damage to this instrument.

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

Connect red test lead to "+" terminal and black one to the "COM" terminal.

Measure the voltage by touching the test lead tips to the circuit where the voltage is expected.

Read the result from the LCD panel.



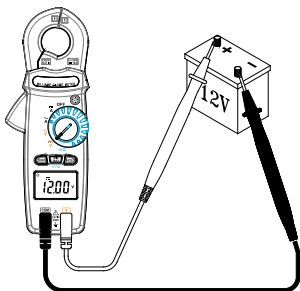
6-4 DCV Measurement :

Switch the main function selector to $\overline{\text{V}}$ range.

Connect red test lead to "+" terminal and black one to the "COM" terminal.

Measure the voltage by touching the test lead tips to the circuit where the voltage is expected.

Read the result from the LCD panel.

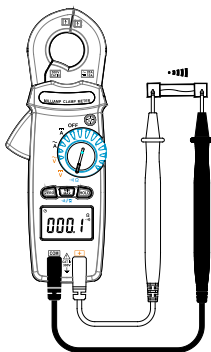
**6-5 Continuity Test With Buzzer :**

Switch the main function to Ω range. Press the "MAX/MIN" to change from $\text{k}\Omega$ to Ω range.

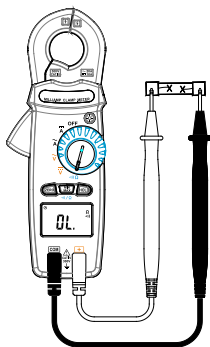
Connect red test lead to "+" terminal and black one to the "COM" terminal.

Connect tip of the test leads to the points where the conduction condition expected.

If the resistance is under 100Ω , the beeper will sound continuously.



Short circuit



Open circuit

6-6 Resistance Measurement

Switch the main function to Ω range.

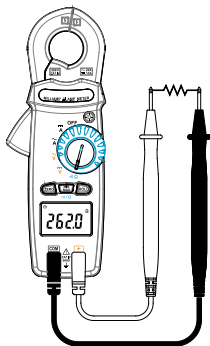
Connect red test lead to "+" terminal and black one to the "COM" terminal.

Connect tip of the test leads to the points where the value of the resistance is expected.


Read the result from the LCD panel.

Note :

When taking a value from a circuit system, make sure the power is cut off and all capacitors have been discharged.



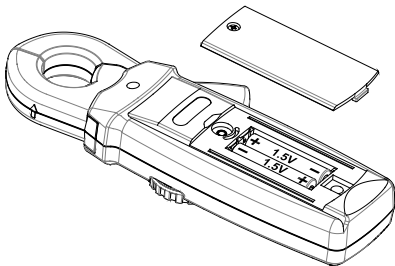
7. BATTERY CHANGING

When the battery voltage indicator appears on the LCD Display  the battery needs to be changed.

Before changing the battery, switch the main dial to "OFF" and disconnect the test leads.

Open the back cover by removing the screw.

Replace the old batteries with two new 1.5V(AAA Size) batteries, take care with the correct polarity. Close the back cover and fasten the screw, taking care not to over tighten.



8. MAINTENANCE

WARNING!

Before opening the meter, disconnect both test lead and never use the meter before the battery cover is closed.

CAUTION!

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

8-1 MAINTENANCE / WARRANTY:

- If the meter is not going to be used for a long time, take out the batteries and do not store the meter in high temperature or high humidity environment.
- When taking current measurement, keep the cable at the center of the clamp which will produce more accurate test results.
- Repairs or servicing not covered in this manual must be performed by returning your instrument to T.I.S. for an under warranty repair (with proof of purchase) or outside of warranty for a quotation to repair.

8-2 CLEANING:

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