

AC DIGITAL CLAMP METER MODEL: TM-16E

Thank you for purchasing this instrument. Please read this instruction manual carefully and completely before using the digital clamp meter. Correct operation will insure the best performance and decrease the possibility of damages.

◆ Safety precaution

Take extreme care for the following conditions while measuring

- Measuring voltage over 20V as it may cause human body electricity conduction.
- Measure AC power.
- Do not measure voltage, current under humid or wet environment.
- If any unusual condition (such as breakage, deformation, fracture, foreign substance, no display, etc.) of the test leads end (metal part) and attachment of the meter, please do not conduct any measuring.
- Do not contact any exposed metal (conductive) parts, such as end of test lead, jack, fixing object, circuit etc.
- Keep you insulated from the object waiting for measuring.
- Do not operate the meter under the environment with explosive gas (material), combustible gas (material) steam or filled with dust.
- In order to avoid reading incorrect data, you have to replace the batteries immediately when the symbol BAT appears on the LCD.
- In order to avoid the damage caused by contamination and static electricity, do not touch the circuit board before you take any adequate action.
- Operating Environment: Indoor use. This instrument has been designed for using in an environment of pollution degree 2.
- Operation Altitude: up to 2000m.
- Operating Temperature & Humidity: 5°C ~ 40°C, below 80%RH.
- Storage Temperature & Humidity: -10°C ~ 60°C, below 70%RH.
- Fingers should hold under the protection guard of test probe.
- Category: CATIII 600V for body.

CATIII 600V for clamp.

◆ Symbols Description

- ⊥ : Ground
- : Meter Double insulated.
- ⚠ : Caution
- ⚡ : Danger high voltage: risk of electric shock.

◆ Specifications

- Display: 3 1/2 digits LCD with maximum reading 1999. Plus decimal point, unit symbol indication.
- Overload Indication: LCD will show a "1" in the left highest position.
- Low Battery Indication: Replace battery as LCD display "BAT".
- Sampling Rate: 2 times per second for digital display.
- Power Supply: R03(AB)/SIZE AAA 1.5V/UM4 battery x2.
- Battery Life: About 200 hours.
- Jaws opening up to 30mm.
- Dimension: 195mm(L)x64mm(W)x30mm(H).
- Weight: About 240g.(including batteries)
- Accessories: Test Leads, manual, Batteries.

Electrical Specifications

Accuracy: ±(.....%rdg.....dgt)

ACA (Auto)

Range	Resolution	Accuracy 50Hz~60 Hz	Overload Protection
200A	0.1A	± (2.0%+5)	600A rms (60 second)
600A	1A		

ACV (Auto)

Range	Resolution	Accuracy 50Hz~500 Hz	Overload Protection
200V	0.1V	± (1.5%+5)	600V rms
600V	1V		

ACV Input Impedance 1MΩ.

Continuity

Range	Buzzer	Max. Open Voltage	Overload Protection
•)))	below 100Ω	-1.6V _{DC}	500V rms

Resistance

Range	Resistance	Accuracy	Max. Open Voltage	Overload Protection
200Ω	0.1Ω	± (1.9%+3)	-1.6V _{DC}	500V rms

◆ Instrument Description

- Inductive clamp jaw.
- Safety guard.
- Jaw Trigger.
- Rotary Range Selector.
- LCD
- COM Jack: it is used for the connection of negative signal input while measuring ACV, Ω / (L).
- V/Ω Jack: It is used for the connection of positive signal input while measuring ACV, Ω / (L).
- DATA HOLD button: The reading data shown on LCD can be locked while pressing the button.

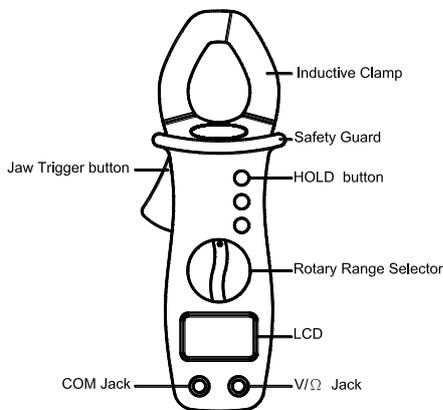


Fig.(1)

◆ Measurement

4-1. AC Current (ACA) measurement

Make sure that all the test leads are disconnected from the meter's terminal for current measurement.

- Select "~A" range.
- Open the clamp and put the tested conductor in the center of the clamp jaws (See Fig.2). (No gap is allowed between the connections of clamp jaws)
- The current value will be indicated on the LCD.
- If the reading is difficult, press the DATA HOLD button to hold the obtained value. To exit from this function press DATA HOLD button again.

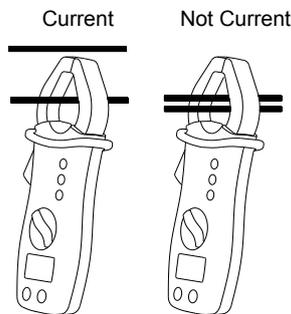


Fig.(2)

4-2. AC Voltage (ACV) measurement

Maxim input for DCV or ACV is 600V. Do not attempt to take any voltage measurement that exceeds the limits. Exceeding the limits could cause electrical shock and damage the clamp meter.

- Select "V~" range.
- Insert the test leads into the jacks. The red test lead plug into V/Ω jack, and the black test lead plug into COM jack.
- Connect the two long ends of test leads to the desired circuit, and then reading will be displayed.
- If the reading is difficult, Press DATA HOLD button to hold the obtained value. To exit from this function, press DATA HOLD button again.

4-3. Resistance measurements

Before taking any in circuit resistance measurement, remove power from the circuit being tested and discharge all the capacitors. If a reading is over range, the message "OL" will be displayed.

- Select "Ω/•)))" range.
- Insert the test leads into the jacks, the red test lead play into "V/Ω" jack, and the black test lead plug into COM jack.
- Connect the two long ends of test leads to the desired circuit, then reading will be displayed.
- Press DATA HOLD button to hold the value when takes the resistance measurement, if it's necessary.
- Connect the two long ends of test leads to the

desired circuit, then reading will be displayed while the buzzer sounds the resistance value is lower than 100Ω approximately.

◆ Battery Replacement

If the symbol "BAT" is shown on the display while measuring, you have to replace the batteries.

- Remove all test leads and the conductor under test before performing of battery replacement.
- Set the range to OFF position.
- Remove the screws from the battery cover with screwdriver, and detach the battery cover from the bottom cover.
- Remove the batteries from battery holder carefully, (replace them with new batteries UM-4 or SIZE 1.5V x 2).
- Attach the battery cover back to its right place, and tight it with screws.

◆ Maintenance and Care

- This meter is a precision digital instrument. Whether in use or in storage, please do not exceed the specification requirements to avoid any possible damage or danger during use.
- Do not use strong or abrasive detergents, water, and wet cloth to clean the instrument. Do use a dry cloth to clean the instrument.
- Do not place this meter in high temperature or humidity or expose to direct sunlight.
- Once the measurement is completed, turn the rotary switch to off. Remove the batteries from battery holder if the instrument is not be used for a long period in order to avoid the liquid leakage from the battery.
- That all necessary requirements of inspection and maintenance are not mentioned in this manual, a qualified technician should perform it.

◆ NAME AND ADDRESS OF MANUFACTURER

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R.O.C.