GTC
General Technologies Corp

# CT8017

## 1. SAFETY RULES

- This meter is designed for indoor use at temperatures between 0°C to 40°C and altitudes up to 2,000m.
- To ensure that the meter is used safely, follow all safety and operating instructions in this operation manual. If the meter is not used as described in this operation manual, the safety features of this meter might be impaired.
- Do not use the meter if the meter or test leads look damaged ,or if you suspect that the meter is not operating properly.
- When using the instrument, keep your fingers behind the finger guards on the plastic casing and probes.
- Disconnect the live test lead before disconnecting the common test lead.
- Make sure power is off before cutting, desoldering, or breaking the circuit wires. Small amounts of current can be dangerous.
- Do not apply more than 600 VDC or 600V AC rms between a terminal and ground.
- To avoid electrical shock, use CAUTION when working above 60V DC or 25V AC rms. Such voltages pose a shock hazard.
- Never make measurements with the battery cover off.
- To avoid electrical shock or damage to the meter, do not exceed the input limits.

## 2. INTERNATIONAL SYMBOLS

| | |
|---|---|
| ⚠ Important information see manual | ⚠ Dangerous Voltages |
| ~ AC | Continuity |
| ⎓ DC | ⏚ Ground |
| | ⧈ Double Insulation |

## 3. TECHNICAL SPECIFICATIONS

### 3.1 General Specifications

| | |
|---|---|
| Display: | 3 3/4 digit LCD with decimal point and 33 segments bargraph display. |
| Polarity: | Automatic, (-) negative polarity indication |
| Zero adjustment: | Automatic |
| Sample rate: | 0.5 Sec. |
| Over range indication: | Symbol "OL" is displayed |
| Power: | 2 x 1.5 V battery, type AA, UM3 or equiv. |
| Power saving: | Automatic power off |
| Battery life: | Approx. 50 hours. (w/ alkaline batteries) |
| Dimension: | 6.34 x 3 x 2" (HxWxD). |
| Weight: | Approx. 11.4 Oz. (including batteries).. |
| Accesories: | User's Manual,Test Leads,Protective, Holster, Soft Pouch and 2 x 1.5 Volt alkaline batteries |

### 3.2 Electrical Specifications

- Accuracies are ±(% of reading + number of least significant digits) at 23°C ±5°C, less than 75% RH.

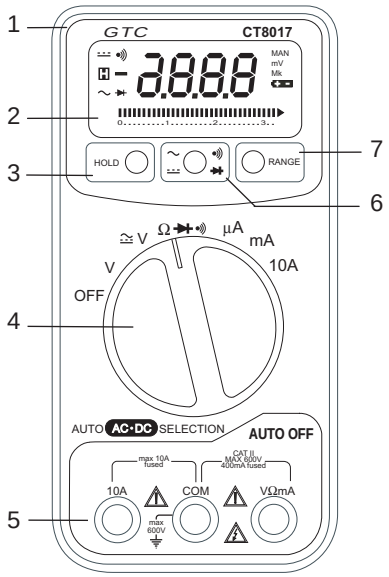
| Function | Range | Accuracy | Input Impedance | Remarks | Overload Protection |
|---|---|---|---|---|---|
| DC Voltage | 320 mV | 0.8%+2 | 2 MΩ | - | 600 Vp-p |
| | 3.2V, 32V, 320V, 600V | 1.2%+2 | | | |
| AC Voltage | 3.2V, 32V, 320V, 600V | 1.2%+5 | 2 MΩ | 50~400Hz | 600 Vp-p |
| DC Current | 320μA, 3200μA, 32mA,320mA | 1.5%+2 | < 163 mV Voltage Drop 10A max. for <10 Sec | | Fuse protection 10 A - 250V, 10A max. 10 sec. |
| | 10A | 2.5%+2 | | | |
| AC Current | 320μA, 3200μA, 32mA,320mA | 1.5%+5 | < 163 mV Voltage Drop 10A max. for <10 Sec | | Fuse protection 10 A - 250V, 10 A max 10 sec. |
| | 10A | 2.5%+5 | | | |

| Function | Range | Accuracy | Remarks | Overload Protection |
|---|---|---|---|---|
| Resistance | 320Ω, 3.2KΩ, 32kΩ ,320kΩ, 3.2MΩ | 1.2%+5 | Max. Testing Voltage: < 1.5 V | 250 Vp-p |
| | 32MΩ | 3.5%+5 | | 250 Vp-p |
| Continuity | Buzzer sounds when <18Ω | | Test Voltage: 1.2 V Max. | 250 Vrms |
| Diode Test | Displays forward diode Voltage drop (Vf) | | Test Current < 0.6mA | 250 Vrms |

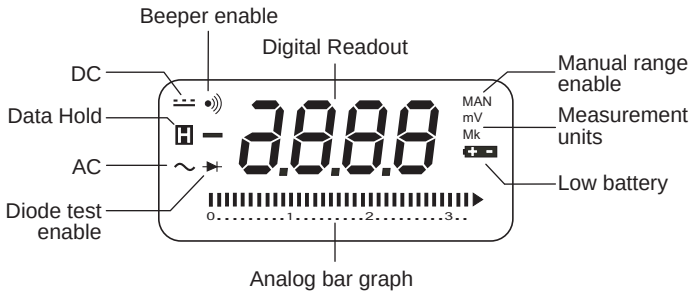
## 4. OPERATION

### 4.1 Instrument Description

1) Case
2) Display
3) Hold button
4) Function switch
5) Input and common connectors
6) Alterate function button
7) Range button




### 4.2 LCD Display Description




### 4.3 Measurement Procedures

⚠ **CAUTION**: Maximum Input Voltage is 600Vrms,do not exceed this rating to avoid personal injuries or damage to the instrument. The range FUNCTION/RANGE switch should be set to the range you want to test before the operation.

⚠ **CAUTION**: Always ensure that the correct terminals are used for the type of measurement to be made. Avoid making connections to "live" circuits whenever possible. When making current measurements ensure that the circuit is not "live" before opening it in order to connect the test leads.

### 4.3.1 AC/DC Voltage measurement

- Connect the black test lead to the "**COM**" socket and red test lead to the "**V Ω mA**" socket.
- Set the **FUNCTION SWITCH** to the desired range:

  "**⎓V**" function for Manual range

  "**V**" function for Auto range
- If **MANUAL MODE** is selected and the voltage range is not known beforehand, using the **RANGE BUTTON** to set the range to the highest and work down as needed.
- If in **MANUAL MODE**, select AC or DC voltage measurement by pressing the **AC/DC/Beeper/Diode Button** function button.
- Connect the test leads across the source or load under measurement.
- The measurement and polarity will be shown the LCD Display when the probe are connected.

### 4.3.2 AC/DC Current measurement

- Connect the black test lead to the "**COM**" socket and red test lead to:

  "**V Ω mA**" for measurements below 320 mA

  "**10 A**" for measurements between 320 mA and 10 A
- Select the current range using the **FUNCTION SWITCH,** if the current range is not known beforehand, start with the highest range and work down as needed.
- If needed select AC or DC current measurement by pressing the **AC/DC/Beeper/Diode Button** function button.
- Connect the test leads in series with the circuit or load under measurement.
- The measurement and polarity will be shown the LCD Display when the probe are connected and current flows through the meter.

### 4.3.3 Resistance measurement

⚠ **CAUTION**: Maximum Input Voltage for this function is 250 Vrms for less than 10 Sec., do not exceed this rating to avoid personal injuries or damage to the instrument. Also ensure there is no power applied to the component or circuit and all capacitors are discharged.

- Connect the black test lead to the "Ω →|•))" socket and red test lead to the "**V Ω mA**" socket.
- Set the **FUNCTION SWITCH** switch to the "Ω" function.
- Connect the test leads across the componet or circuit under measurement.
- The range will adjust automatically for optimal readout, and the measurement will be shown the LCD Display when the probe are connected.

## 4.4 Other Functions

⚠ **CAUTION**: Maximum Input Voltage for this function is 250 Vrms for less than 10 Sec., do not exceed this rating to avoid personal injuries or damage to the instrument. Also ensure there is no power applied to the diode.

### 4.4.1 Diode test

- Connect the black test lead to the "**COM**" socket and red test lead to the "**V Ω mA**" socket.
- Set the **FUNCTION/RANGE** switch to the "Ω →|•))" function.
- Press the **AC/DC/Beeper/Diode** button until the diode test enable symbol →| appears on the display
- Proceed to connect the test leads across the diode observing the polarity: red probe to the anode (+) of the diode and black test lead to the cathode (-).
- The measurement will be shown on the LCD Display when the diode is connected.

### 4.4.2 Continuity Test

- Connect the black test lead to the "**COM**" socket and red test lead to the "**V Ω mA**" socket.
- Set the **FUNCTION/RANGE** switch to the "Ω →|•))" function.
- Press the **AC/DC/Beeper/Diode** button until the beeper enable symbol •)) appears on the display
- Proceed to connect the test leads across the circuit or component to test.
- Buzzer will sound if the circuit resistance is below 18Ω

### 4.4.3 Display Hold

The **Hold Button** is used to hold display readings during measurements.

- Pressing the button holds the display reading, and "**H**" appears on the display.
- Pressing the button again resumes normal operation.

# 5. MAINTENANCE

⚠ **CAUTION:** Before attempting battery removal or replacement, disconnect test leads and remove the instrument from any energized circuit to avoid shock hazard.

### 5.1 Battery Replacement

- To replace the battery, remove the screw of the back **Battery Cover** (back of the case) and remove the batteries.
- Replace with new 1.5 V alkaline battery type AA, UM3 or equivalent observing the proper polarity from the diagram on the label inside the battery compartment.
- Reinstall the battery cover and tighten the securing screw.

### 5.2 Fuse replacement

- Remove the screw of the back **Battery Cover** (back of the case) and remove the batteries.
- Remove the four screws at the bottom of the case and of the battery compartment.
- Replace new fuses only with the identical type and rating.

  **F1=200mA**: Type IEC60127-2 or UL248-14 (5 x 20mm) fast acting fuse, rated at 400mA/250V.

  **F2=10A**: Type IEC60127-2 orUL248-14 (6.3x25.4mm) fast acting fuse, rated at 10A/250V.
- Reinstall the back cover, and replace the four screws.
- Reinstall the battery observing the polarity on the battery compartment label, the battery cover and tighten the securing screw.

### 5.3 Cleaning

Periodically wipe the case with a soft damp cloth and mild household cleanser. Do not use abrasives or solvents. Ensure that no water gets inside the instrument to prevent possible shorts and damage.

# 6. WARRANTY

One year limited warranty, excluding batteries and fuses. For details see Standard Warranty Information in our webpage or you may request a printed copy.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