

# KM6030

## DIGITAL MULTIMETER

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### Introduction

This is a 3 1/2 digit with steady function and highly reliable hand-held measuring instrument. The Meter uses large scale of integrated circuit with double integrated A/D converter as its core and has full range overload protection. The Meter can measure DC current, AC current, DC Voltage, AC Voltage, Resistance, Capacitance, Diode, Temperature, Inductance, Frequency and Continuity, Which is an ideal tool for users.

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### A. Feature

- 32 ranges.
- Liquid Crystal Display, digit's height is 28mm.
- Overload display "1".
- Maximum display "1999" (3 1/2 digit), "19999" (4 1/2 digit).
- Full range overload protection.
- Auto-Power Off.
- Operating Temperature: 0°C to 40°C (32°F to 104°F).
- Storing Temperature: -10°C to 50°C (14°F to 122°F).
- Low Battery display "E3".
- Strap for easy carry.
- Tilt stand design, three observation angles, is in favor of reading display.
- Dimension: 192×88×42mm
- Weight: about 600g(including holster)

### B Specifications

Accuracy is specified for one year after calibration, at operating temperatures 23°C ±5°C, with relative humidity at <75%. Accuracy specifications take the form of: ± (a% readings + digits).

#### B-1 . Direct Current Voltage (DC Voltage)

Range	Accuracy		Resolution
	KM6030		
200mV			100 μV
2V	± (0.5%+3)		1mV
20V			10mV
200V			100 mV
1000V	± (1%+5)		1V

Input impedance: 10MΩ.

Overload protection: 200mV is 250V DC or AC RMS. All other ranges is

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### Safety Rules

- The meter comply with IEC 1010-1 CAT I 1000V, CAT II 600V and CAT III 300V over voltage standards. Use the Meter only as specified in this manual, otherwise the protection provided by the Meter may be impaired.
  - Do not operate the Meter before the cabinet has been closed and screwed safely as terminal can carry voltage.
  - Make sure before each measurement the Meter is set to the suitable range.
  - Before using the Meter, please inspect the cabinet and test leads for damaged insulation or exposed metal.
  - Connect the red and black test lead to the correct measuring input jack properly.
  - Do not input values over the maximum range of each measurement, otherwise the Meter could be destroyed. Make sure to use new fuses with proper rating in stead of bad fuses.
  - To avoid electric shock or damages, do not apply more than 1000V between the "COM" terminals and "⏏" earth ground.
  - Use caution when working with Voltages above 60V(DC) or 30Vrms(AC). These Voltages pose shock hazard.
  - Replace the battery as soon as the battery indicator "E3" appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.
  - Turn off the Meter once finished measuring, fetch out the battery, when the meter will not be used for long period.
  - Do not operate the Meter under adverse environmental humid area. To avoid damages and dangerous, do not change the circuit.
  - Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.
- International Electrical Symbols:

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#### B-2 . Alternating Current Voltage (AC Voltage)

Range	Accuracy		Resolution
	KM6030		
2V	± (1%+5)		1mV
20V			10mV
200V			100 mV
750V	± (1.2%+5)		1V

Input impedance: 200mV:1MΩ ,  
other ranges:10MΩ

Frequency: 40Hz-400Hz.

Overload protection: 200mV is 250VDC or AC RMS. All other ranges is 1000V DC or AC rms.

Display: Average Value (RMS of Sine Wave).

#### B-3. Direct Current Current (DC Current)

Range	Accuracy		Resolution
	KM6030		
2mA	± (1%+3)		1 μA
20mA	± (1%+3)		10 μA
200mA	± (1.5%+5)		100μA
20A	± (2%+10)		10mA

Overload protection: 0.2A/250V fuse (No fuse on 20A range).

Max current input: 20A (above 10A for 15 seconds maximum).

Measuring voltage drop: Full range is 200mV.

#### B-4. Alternating Current Current (AC Current)

Range	Accuracy		Resolution
	KM6030		
2mA	± (1.2%+5)		1 μA
20mA	± (1.2%+5)		10μA
200mA	± (2%+5)		100μA
20A	± (3%+10)		10mA

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Overload protection: 0.2A/250V fuse (No fuse on 20A range).  
 Max current input: 20A (above 10A for 15 seconds maximum).  
 Measuring voltage drop: Full range is 200mV.  
 Frequency: 40Hz-400Hz.  
 Display: Average Value (RMS of Sine Wave).

**B-5. Resistance**

Range	Accuracy KM6030	Resolution
200Ω	± (1%+5)	0.1Ω
2K Ω	± (1%+2)	1 Ω
20KΩ		10 Ω
200KΩ		100Ω
2MΩ		1K Ω
20MΩ	± (1%+15)	10KΩ

Voltage at open circuit: ≤700mV (200MΩ range, open circuit voltage around 3V).  
 Voltage at open circuit: All ranges 250VDC or AC RMS.  
 Caution: At 200MΩ range, as test lead is short circuit the LCD display 10 digits is normal, deduct this 1MΩ from the measured 1MΩ reading during measuring.  
 At 200Ω range, the resistance value caused by short circuit of test load should be deducted from the measured reading during measuring.

**B-6. Capacitance**

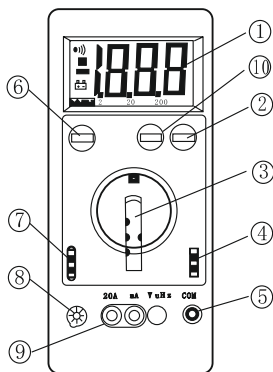
Range	Accuracy KM6030	Resolution
2nF	± (4%+3)	1pF
20nF		10pF
200nF		100pF
2 μF		1nF
200μF	± (5%+3)	100nF

Testing frequency and voltage: around 400Hz 40mVrms.  
 Overload protection: Maximum 36V DC or AC RMS.



**C. Making Measurements**

Caution:  
 (1) If there is no display or “E” is shown on the LCD when the Meter is switched on, replace the battery ASAP.  
 (2) Never exceed the maximum input voltage or current limits shown besides the input jacks “ ”, otherwise the Meter will be damaged and this is dangerous to life.  
 Turn the rotary switch to proper range before operating.



- (1)Liquid Crystal Display
- (2)Data hold switch
- (3)Rotary switch
- (4)Temperature jack or inductance jack
- (5)Common Input jack
- (6)On/Off Switch
- (7)Capacitance jack
- (8)Transistor jack
- (9)Input jack for General Measurement
- (10)back light



**B-7. Frequency**

Range	Accuracy KM6030	Resolution
2KHz	± (2%+5)	1Hz

Input sensitivity: ≥200mV rms  
 Overload protection: 250VDC or AC rms.

**B-8. Temperature**

Range	Accuracy KM6030	Resolution
-40°C—0°C	± (5% + 5)	1°C
0°C—400°C	± (1% + 3)	1°C
400°C—1000°C	± (3% + 4)	1°C

**B-9 Diode Test and Continuity Beeper**

Range	Resolution	Comment	Measuring Condition
	1mV	Display diode forward voltage	Forward DC Current about 1mA Backward DC voltage about 2.8V
	—	Beeper sounds if Continuity Resistance ≤ 70 Ω ± 20 Ω .	Open circuit Voltage about 2.8V

Overload protection: 250V DC or AC RMS.

**B-10 Transistor hFE test**

Range	Comment	Measuring Condition
hFE	Can measure NPN or PNP transistor hFE. Range: 0 -1000 β	Basic polarity current about 10 μ A, Vce about 2.8V.



**D. Maintenance**

The Meter is a highly precise electrical testing instrument, do not attempt to change the circuit of your Meter on your own. Take a note of the following points:  
 a) Do not input to DC Voltage above 1000V or AC above 700V RMS.  
 b) Do not input Voltage when the rotary switch is in “Current Range”, “Ω ” “ ” and “ ” .  
 c) Do not operate the Meter if battery is not inside the Meter or bottom cabinet is not securely screwed.  
 d) Disconnect the test leads and power off the Meter before replacing the Battery and Fuses.

**E. Accessories**

- 1)Instruction manual 1PC
- 2)Test lead 1PC
- 3)TP01 K temperature measuring probe (250°C) 1PC



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