

# TENMARS



## AC/DC DIGITAL CLAMP METER

### MODEL YF-8030N



## OPERATING MANUAL



HB2YF8030N00

## TENMARS ELECTRONICS CO., LTD



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
Thank you for your patronage. Before using this instrument, please read thoroughly the instruction manual to obtain best performance.

## **1. FEATURES**

- Max. opening size up to 53mm.
- Auto-indication of measuring units and functions.
- MIN/MAX hold.(MIN MAX)
- Current measurement protection up to 1200A.
- Rugged, tough and reliable quality.
- Voltage, Resistance, Frequency and Capacitance auto-ranging.
- Auto zero.

## **2. SPECIFICATION**

### **2.1 General Specification:**

1. Display: 3 5/6 digit LCD with max. reading 6600, units, decimal point and signs.
2. Overload Indication: LCD will display "OL" or "-OL" flash in the highest position accompanied with a continuous buzz.
3. Polarity Indication: Automatic polarity, "-" display for negative input.
4. Low battery indication: when LCD displays  the battery needs to be replaced.
5. Battery life: about 100 hours.
6. Sampling time: 2 times / sec.
7. MIN/MAX hold.(MIN MAX)
8. Power supply: 1 PC of battery 006P 9V.
9. Operation height: Altitude up to 2000M.
10. Installation categories III Double and Reinforce Insulation.
11. Operation environment: for indoor use, pollution degree 2.
12. Operating temperature and humidity:

Ambient temperature 0°C to 40°C

Relative humidity below 80%RH.

13. Storage temperature and humidity: -10°C -60°C, below 70%RH.
14. Size: 221(L) x62(W) x35(H) mm.
15. Max. Conductor size: 52mm.
16. Weight: Approx. 500g (including batter).
17. Accessories: test leads, operation manual. Carrying case, battery.

## **2.2 Electrical Specification:**

General measurement (23°C±5, below 80%RH)

**Accuracy: ± (....%+....dgt)**

### **DC Current (Auto Ranging)**

Range	Resolution	Accuracy	Overload Protection
660.0A	0.1A	±(1.5%+5)	1200A/60sec
1200A	1A	±(2%+5)	

### **AC Current (Auto Ranging)**

Range	Resolution	Accuracy (50Hz~60Hz)	Overload Protection
660.0A	0.1A	±(2%+5)	1200A/60sec
1200A	1A		

**DC Voltage (Auto Ranging)**

Range	Resolution	Accuracy	Input Impedance	Overload Protection
6.600V	1mV	±(0.5%+3)	11MΩ	DC 1000V AC750Vrms
66.00V	10mV		10MΩ	
660.0V	100mV			
1000V	1V	±(1.5%+4)		

**AC Voltage (Auto Range)**

Range	Resolution	Accuracy	Input Impedance	Overload Protection
6.600V	1mV	±(1.2%+3)	11MΩ	DC1000V AC750Vrms
66.00V	10mV		10MΩ	
660.0V	100mV			
750V	1V	±(1.5%+4)		


**Resistance (Auto Ranging)**

Range	Resolution	Accuracy	Input Impedance	Overload Protection
660.0Ω	100mΩ	±(1.0%+5)	About 1.5V	DC /AC 600Vrms
6.600KΩ	1Ω	±(1.0%+3)	About 0.45V	
66.00KΩ	10Ω			
660.0KΩ	100Ω			
6.600MΩ	1KΩ			
66.00MΩ	10KΩ	±(3.0%+5)		


**Frequency Test (Auto Ranging)**

Range	Resolution	Accuracy	Input Impedance	Overload Protection
660.0Hz	0.1Hz	$\pm(0.5\%+1)$	5Vrms	AC/DC 600Vrms
6.600KHz	1Hz			
66.00KHz	10Hz			
100.0KHz	100Hz			

**Diode Test**

Range	Resolution	Accuracy	Open Voltage	Overload Protection
	1mV	$\pm(1.5\%+5)$	About 3V	AC/DC 600Vrms

**Continuity**

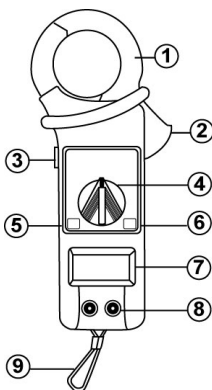
Range	Resolution	Sound Level	Open Voltage	Overload Protection
	0.1Ω	Blow 35Ω	About 0.45V	AC/DC 600Vrms

**Capacitance Test (Auto Range)**

Range	Resolution	Accuracy	Overload Protection
6.600uF	1nF	±(2.0%+8)	AC/DC 600Vrms
66.00uF	10nF		
660.0uF	100nF		
6.600mF	1uF	±(5.0%+20)	
66.00mF	10uF		



### 3. PARTS DESCRIPTION



1. Inductive Clamp Jaw.
2. Clamp Movable Handle.
3. MIN/MAX hold Switch.
4. Range Selector Switch.
5. Auto Zero buttons Switch.
6. AC/DC Selector buttons Switch.
7. Liquid Crystal Display.(LCD)
8. Jack for Voltage、Resistance、Frequency、Capacitance, Diode, Continuity, Measurement.
9. Wrist Strap.

## **4. METHOD OF MEASUREMENT**

### **4-1 AC/DC Current measurement**

- (1). Select a proper ACA or DCA (press AC/DC) range, Always start from the top range for any unknown current.
- (2). As measuring ACA, DCA. Check if the display show "000" in advance, IF the display doesn't show zero, press autos zero,
- (3). Press the jaw trigger and insert the cable to be tested to the middle of jaw area.
- (4). Read the indicating value. Highest position "4" at left means overload, and a higher range is required.

### **4-2 AC/DC Voltage measurement (Auto ranging)**

- (1). Select an ACV or DCV (press AC/DC) range, Always start from the top range for any unknown voltage.
- (2). As measuring ACV, DCV. Check if the display show "0" in advance, IF the display doesn't show zero. press auto zero button Switch.

- (3). Insert the test leads into the jack, the red plug into V $\Omega$ /Hz jack, and black plug into COM jack.
- (4). Connect the two long ends of test leads to the desired circuit in parallel, and read the indicating value.
- (5). When measurement are done using the most sensitive rang, after pressing AUTO ZERO and changing to higher ranges wrong values are displayed.

#### **4-3 Resistance( $\Omega$ )/continuity( $\cdot$ )))/Diode( $\rightarrow$ +) measurement**

- (1). Set range Switch on  $\Omega$ / $\cdot$ ))/ $\rightarrow$ + position
- (2). Press the AC/DC select key to  $\Omega$ / $\cdot$ ))/ $\rightarrow$ + position
- (3). Insert the test leads into the jack, the red plug into V/ Hz jack, and black plug into COM jack.
- (4). As measuring resistance under lower impedance, make the test leads tip Short-circuit the impedance of test leads to start measuring.
- (5). Connect the two long ends of test leads

- to the desired circuit, and read the indicating value.
- (6). If diode testing Connect the other end of red test lead to the positive pole(P) of diode and the other end of black test lead to the negative pole(N) of the diode. (LCD value will show 0.3V-0.9v). The value read from LCD is positive phase voltage drop (V f) of the diode, and the unit is "voltage ".
  - (7). When making resistance measurement, there should be no voltage in circuit. Any capacitor should be discharged firstly.

#### **4-4 Frequency Measurement (Auto ranging).**

- (1). Set range Switch to Hz position.
- (2). Insert the test leads into the jack, the red plug into V / $\Omega$ / Hz jack and black plug into COM jack.
- (3). Connect the two long ends of test leads the desired circuit, then reading will displayed.

**4-5 Capacitance measurement  
(Auto ranging) .****CAUTION**

Turn off power and discharge the capacitor before attempting a capacitance measurement. Use the (vf) function to confirm that the capacitor is discharged.

- (1). Turn off power on the circuit waiting for testing and totally discharge the capacitor.
- (2). Before discharge of voltage from the capacitor, please note the safe discharge is to use a 100K resistor by means of parallel connection on the both ends of the capacitor.
- (3). Set range Switch to Capacitance position.
- (4). Insert the test leads into the jack, the red plug into V/ $\Omega$  Hz jack, and black plug into COM jack.
- (5). The other two ends of the test lead waiting for measuring capacitance (parallel connection with the circuit waiting for testing).
- (6). For measuring if capacitor is electrolytic capacitor or polarity capacitor, red test lead must be connected to positive (+)

end, black test lead to the negative(-) end.

- (7). Read the capacitance value waiting for testing from LCD.

#### **4-7 MIN MAX Minimum (MIN), Maximum(MAX), Recording**

Press MIN MAX to enter the MIN MAX Recording mode. The minimum, maximum values are then reset to the present input. In the MIN MAX Recording mode the minimum and maximum readings are stored in memory. Push MIN MAX to cycle through the maximum (MAX) minimum (MIN) and exit. The Hold MIN. Hold MAX annunciate turns on the indicate what value is being displayed.

**5. DESCRIPTION OF SYMBOLS**

1. Represent DC
2. Represent AC
3. Represent grounding
4. Represent insulation
5. Represent warning
6. Represent HV Danger

**6. NOTES**

- (1). Check if the battery is put in correctly.
- (2). Is sure LCD and range indicator show the same, as the function desired.
- (3). When changing ranges, Please put away tested conductor or circuit to avoid accident.
- (4). Always keep hand through the wrist strap to prevent carelessly dropping the meter. Also any unnecessary vibration and impacts should be avoided so as not to damage the meter itself.
- (5). When changing ranges or releasing Data Hold, be sure the LCD shows "0" before next measurement.
- (6). Do not measure or connect circuit Range

- overload protection voltage and current.
- (7). When measuring resistance, do not put on voltage between ends, since Overstrung voltage is liable to lead to malfunction, although there is a protection function.
  - (8). Take off test lead of voltage & resistance measurement when measuring current.
  - (9). Strong current beside clamp jaw will affect accuracy.
  - (10). This meter is not available for wave irregular. AC current measurement otherwise will cause great error.
  - (11). When measuring current, put the tested cable at middle of clamp jaw to acquire accurate reading.




**7. WARNING**

Take extreme care for the following conditions when measuring:

- (1). Measuring voltage over 20V.
- (2). When measuring AC power supply, it might Cause human body electricity conduction.
- (3). Do not measure voltage, current under humid or wet environment.
- (4). IF any unusual condition of testing end (metal part) and attachment of the meter such as breakage, deformation, fracture, foreign substance, no display, etc., do not conduct any measuring.
- (5). Do not contact any exposed metal (conduction) parts such as end of test lead. socket, fixing object, circuit, etc.
- (6). Keep you insulated from the object waiting for measuring.
- (7). Do not operate the meter under the environment with explosive gas (material),combustible gas (material), steam or filled with dust.

## **8. MAINTENANCE**

### **8.1 Battery Replacement**

The sign "  "showing up on the LCD means the battery should be replaced.

- (1). Set range switch to OFF range.
- (2). Take away the test lead or object under test.
- (3). Open the bottom battery cover.
- (4). Loose the battery and the pin with care, and take out the battery.
- (5). Connect the new battery and the pin, put it back to the compartment.
- (6). Put on the battery cover.

### **8.2 STORAGE**

- (1). This is a precision instrument.  
The operation should be in compliance with the above description to avoid damage and danger. When maintenance and cleanup, please use soft and dry clothe for cleaning, do not wipe with damp cloth, solvent, water, etc.
- (2). Keep it away from high temperature, humility or under direct sunlight.

- (3). Be sure to put it in off position after use.  
For long storage, the battery should be taken out lest the leakage of batter liquid damage the interior parts.

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## **Professional Electrical and Environment Test & Measurement Instruments:**

LED light meter, Temperature & Humidity meter,  
Infrared Thermometer, Sound level meter  
Light meter, EMF meter, UV Light meter,  
RF meter, Hot wire Anemometer, Co meter  
Anemometer, Lan cable tester, Co2 meter,  
Solar power meter, Radiation meter,  
Clamp meter, Multimeter, Phase Rotation test,  
Digital Insulation tester

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