


# kaise

## AC DIGITAL CLAMP METER INSTRUCTION MANUAL


### SK-7601


#### KAISE CORPORATION


### FOR SAFETY MEASUREMENTS!!

To prevent an electrical shock hazard to the operator and/or damage to the instruments, read this instruction manual carefully before using the instrument. **WARNINGS** with the symbol  on the instrument and this instruction manual are highly important.

#### Important Symbols :

 The symbol listed in IEC 61010-1 and ISO 3864 means "Caution (refer to instruction manual)".

 **WARNING** The symbol in this manual advises the user of an electrical shock hazard that could result in serious injury or even death.

 **CAUTION** The symbol in this manual advises the user of an electrical shock hazard that could cause injury or material damages.

### WARNING

**Measurement on High Power Line (High Energy Circuits) is very dangerous. It sometimes includes High Surge Voltage that could cause dangerous arcs of explosive short in the instrument and could result in serious injury to the operator. When measuring high power line, be careful not touch any part of the circuit.**

### INTRODUCTION

Thank you for purchasing KAISE "SK-7601 AC DIGITAL CLAMP METER". To obtain the maximum performance of this instrument, read this Instruction Manual carefully, and take safe measurement.

### 1. UNPACKING AND INSPECTIONS

Confirm if the following items are contained in the package in good condition. If there is any damage or missing items, ask your local dealer for replacement.

- |                         |                    |
|-------------------------|--------------------|
| 1. Digital Clamp Meter  | 1 pce.             |
| 2. Carrying Case (1004) | 1 pce.             |
| 3. Battery (3V CR2032)  | 1 pce. (installed) |
| 4. Instruction Manual   | 1 pce.             |

### 2. SPECIFICATIONS

#### 2-1. GENERAL SPECIFICATIONS

##### 1. DISPLAY (LCD)

- Numerical Display : 3 3/4 digit, 4000 count, Maximum reading 4000, 12mm high.
- Units and Symbols : ~, A, DH, BAT, AUTO, APO and decimal point.

##### 2. OPERATING PRINCIPLE : $\Sigma \Delta$ conversion

##### 3. RANGE SELECTION : Auto range

##### 4. OVERLOAD INDICATION : "OL" indication more than 400A

##### 5. BATTERY WARNING : "BAT" indication at approx. 2.4V or less

##### 6. SAMPLING RATE : 2.5 times per second

##### 7. DISPLAY HOLD : Hold indicating values by DH Key

##### 8. OVERLOAD PROTECTION : 400A AC (300V Line) for 1 minute

##### 9. DIELECTRIC STRENGTH : 3.7kV AC for 1 minute (between case and metal part)

##### 10. OPERATING TEMPERATURE & HUMIDITY : 0°C to 40°C, 80%RH or less in non-condensing

##### 11. STORAGE TEMPERATURE & HUMIDITY : -10°C to 50°C, 70%RH or less in non-condensing.

##### 12. TEMPERATURE COEFFICIENT : 0°C to 18°C, 28°C to 40°C ; add accuracy at 23°C $\pm 5^\circ\text{C} \times 0.1 / ^\circ\text{C}$

##### 13. SAFETY LEVEL : CE marking approved (IEC-61010-1, IEC-61010-2-032 CAT III 300V and EMC Test passed)

##### 14. POWER SUPPLY : 3V CR2032 battery x 1

##### 15. POWER CONSUMPTION : 3mA max.

##### 16. CONTINUOUS OPERATING TIME : Approx. 70 hours

##### 17. AUTO POWER OFF : Power turns off automatically after approx. 12 minutes

##### 18. CONDUCTOR DIAMETERS : $\phi 27\text{mm}$ max.

##### 19. DIMENSIONS & WEIGHT : 150(H) $\times$ 52(W) $\times$ 24(D)mm, Approx. 110g

##### 20. ACCESSORIES : 1004 Carrying Case, 3V CR2032 Battery (x1, installed), Instruction manual

#### 2-2. MEASUREMENT SPECIFICATION (23°C $\pm 5^\circ\text{C}$ , <80%RH in non-condensing)

AC CURRENT ( $\sim$ A)		Average rectification	
Range	Accuracy (50/60Hz)	Resolution	Max. Input Current
40.00A	$\pm 1.8\% \text{rdg} \pm 5 \text{dgt}$	10mA	300A (300V line max.)
300.0A		100mA	

Frequency Response : 0A to 200A ; 40Hz to 500Hz (add 1.5%rdg + 3dgt to the above accuracy.)  
NOTE : Add 3dgt for 0A to 0.5A.

### 3. SAFETY PRECAUTIONS

Correct knowledge of electric measurements is essential to avoid unexpected danger such as operator's injury or damage to the instrument. Read the following precautions carefully for safety measurements.

#### 3-1. WARNINGS

##### WARNING 1. Checks of the Instrument

Before measurement, check if there are no damage to the instrument. Dust, grease and moisture must be removed.

##### WARNING 2. Warning for High Power Line Measurement

High Power Line (High Energy Circuits) such as distribution transformers, bus bars and large motors are very dangerous. High Power Line sometimes includes High Surge Voltage that could cause explosive short in the instrument and could result in shock hazard. Generally, shock hazard could occur when the current between the circuit, that involves more than 30V AC or 42.4V DC, and ground goes up to 0.5mA or more. When measuring high power line, do not touch the live line and keep enough distance.


##### WARNING 3. Maximum Input Observance

Do not measure any current that might exceed the specified maximum input value.


##### WARNING 4. Safety Line


Do not put your fingers over the safety line while current measurement.


#### 3-2. PRECAUTION FOR USE


 **CAUTION** : Do not measure AC high-frequency current. Clamp head becomes heated and could damage the instrument.


#### 3-3. GENERAL WARNINGS AND CAUTIONS

 **WARNING 1.** Children and the persons who do not have enough knowledge about electric measurements must not use this instrument.

 **WARNING 2.** Do not measure the electricity in naked of barefooted to protect yourself from electrical shock hazard.

 **CAUTION 1.** Away the instrument from hot and humid conditions like in the car. Do not apply hard mechanical shock or vibration.

 **CAUTION 2.** Do not polish the case or attempt to clean it with any cleaning fluid like gasoline or benzine. If necessary, use silicon oil or antistatic fluid.

 **CAUTION 3.** Remove the battery when the instrument is out of use for a long time. The exhausted battery might leak electrolyte and corrode the inside.

### 4. NAME ILLUSTRATION

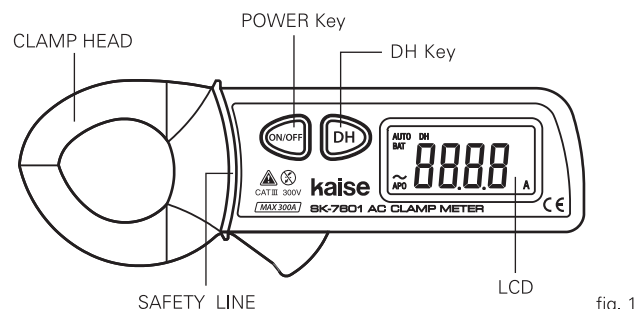


fig. 1

#### 4-1. LCD



fig. 2

- ~ : Alternating current (AC)
- BAT : Low battery warning
- AUTO : Auto range
- DH : Display Hold
- A : Unit of Current
- APO : Auto Power Off

#### 4-2. POWER Key

Press this key to turn the clamp meter on. To turn off, press it once again.

#### 4-3. DH Key : Display Hold

Hold LCD displayed value by pressing this key. ("DH" lights up)

To release it : Press DH key once again.

#### 4-4. Clamp Head

Clamp a single conductor in the center of clamp head.

**NOTE** : Measurement cannot be done if the several conductors are clamped.

#### 4-5. Safety Line

The line to protect yourself against electrical shock hazard. Always keep your fingers behind the safety line.

### 5. MEASUREMENT PROCEDURES

#### 5-1. PREPARATION FOR USE

##### 1. INSTRUCTION MANUAL

Read INSTRUCTION MANUAL carefully to understand the specification and functions properly. "3. SAFETY PRECAUTIONS" is very important for safety measurement.

##### 2. BATTERY

One 3V CR2032 battery is installed in this instrument. When battery is exhausted, "BAT" lights up on LCD. For the replacement, refer to "6-2. BATTERY REPLACEMENT".

##### 3. OVERLOAD INDICATION

LCD displays "OL" when the input value exceeds 400A AC.

### WARNING

Do not measure any current that might exceed 300A AC (300V line maximum) to avoid electrical shock hazard and/or damage to the instrument .

#### 4. AUTO POWER OFF






Approx. 12 minutes after the last operation of the **POWER** or **DH** keys the clamp meter will automatically turn off.

**NOTE** : There is small current consumption even in the auto power off or power off conditions.

**NOTE** : Press **POWER** Key **twice** to turn on the clamp meter after the auto power off.

#### 5. SYMBOL MARK

The following symbol marks shown on the instrument and instruction manual are listed in IEC 61010-1 and ISO 3864.

	Caution (refer to instruction manual.)
	Do not apply around, or remove from HAZARDOUS LIVE conductors.
	Alternating Current (AC)
	Earth (Ground)
	Double Insulation

#### 5-2. AC CURRENT MEASUREMENT ( $\sim$ A)

### WARNING

- Do not measure any current that might exceed the maximum input value, 300A AC (300V line maximum).
- Read "3. SAFETY PRECAUTIONS" carefully to avoid electrical shock hazard and serious damage to the instrument.
- Always keep your fingers behind the safety line.
- Do not touch any part of the power line or the circuit to be measured.

- Press **POWER** Key to turn on the clamp meter.
- Open Clamp Head and clamp a single conductor.  
**NOTE** : Measurement cannot be done if the several conductors are clamped.
- Read the measurement value on LCD.
- After finishing the measurement, remove the clamp head from the conductor. Press **POWER** Key to turn off.

Available Function : Display Hold (refer to 4-3)

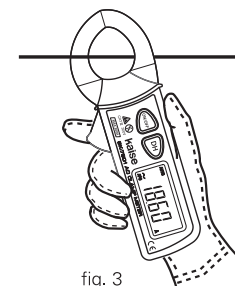


fig. 3

### 6. MAINTENANCE

#### 6-1. BATTERY REPLACEMENT

### WARNING

To avoid electrical shock, detach the clamp meter from the circuit when to replace the battery and turn it off.

Replace the battery when "BAT" lights up on LCD.

- Turn off the clamp meter.
- Loosen a screw of battery cover and remove it.
- Remove the exhausted battery. Insert a tweezers (or similar tool) into the side hole of the battery case and push the battery up.
- Insert a new 3V CR2032 battery in correct polarity, + mark up.
- Fix the battery cover and tighten the screw.

**NOTE** : Remove the batteries when the instrument is out of use for a long time. The exhausted batteries might leak electrolyte and corrode the inside.

**NOTE** : Installed battery is for inspection purpose and might be exhausted earlier than the new battery.

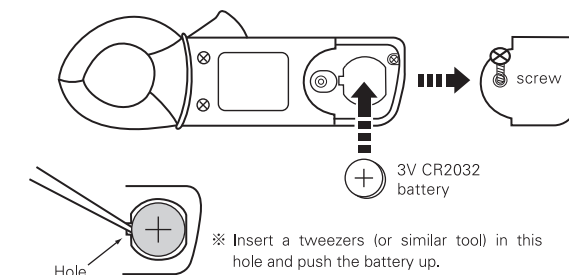


fig. 4

#### 6-2. PERIODICAL CHECK AND CALIBRATION

Periodical check and calibration is necessary to make safety measurements and to maintain the specified accuracy. The recommended check and calibration term is once a year and after the repair service. This service is available at KAISE AUTHORIZED SERVICE AGENCY through your local dealer.

#### 6-3. REPAIR

Repair service is available at KAISE AUTHORIZED SERVICE AGENCY through your local dealer. Pack the instrument securely with your name, address, telephone number and problem details, and ship prepaid to your local dealer.

#### Check the following items before asking repair service.

- Check the battery connection, polarity, and capacity.
- Confirm if the over input, exceeding the maximum input value, is not applied.
- Confirm that measured accuracy is adopted in the operating environment.
- Confirm that the body of this instrument has no cracks or any other damages.
- Check if the instrument is not affected by the strong noise generated from the equipment to be measured or measuring surroundings.

#### WARRANTY

SK-7601 is warranted in its entirety against any defects of material or workmanship under normal use and service within a period of one year from the date of purchase of the original purchaser. Warranty service is available at KAISE AUTHORIZED SERVICE AGENCY through your local dealer. Their obligation under this warranty is limited to repairing or replacing SK-7601 returned intact or in warrantable defect with proof of purchase and transport charges prepaid. KAISE AUTHORIZED DEALER and the manufacturer, KAISE CORPORATION, shall not be liable for any consequential damages, loss or otherwise. The foregoing warranty is exclusive and in lieu of all other warranties including any warranty of merchantability, whether expressed or implied. This warranty shall not apply to any instrument or other article of equipment which shall have been repaired or altered outside of KAISE AUTHORIZED SERVICE AGENCY, nor which have been subject to misuse, negligence, accident, incorrect repair by users, or any installation or use not in accordance with instructions provided by the manufacturer.

#### KAISE AUTHORIZED DEALER



#### KAISE CORPORATION

422 Hayashinogo, Ueda City, Nagano Pref., 386-0156 Japan  
TEL : +81-268-35-1601 / FAX : +81-268-35-1603  
E-mail : sales@kaise.com http://www.kaise.com

Product specifications and appearance are subject to change without notice due to continual improvements.