

kaise

AC CLAMP ADAPTER INSTRUCTION MANUAL

821

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.

INTRODUCTION

Thank you for purchasing KAISE "821 AC CLAMP ADAPTER". 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. Clamp Adapter | 1 pce. |
| 2. BNC Conversion Adapter (731) | 1 pce. |
| 3. Carrying Case (1020) | 1 pce. |
| 4. Batteries (1.5V LR03) | 2 pcs. |
| 5. Instruction Manual | 1 pce. |

2. SPECIFICATIONS

2-1. GENERAL SPECIFICATIONS

- RANGE SELECTION** : Manual-ranging (20A/50A/100A/400A)
- OUTPUT WAVEFORM** : AC output or RMS output selected by Function Switch
- LOAD RESISTANCE** : 200Ω or less
- BATTERY WARNING** : BAT LED disappears at approx. 2.1V or less
- OVERLOAD PROTECTION** : 600A AC rms for 30 seconds
- DIELECTRIC STRENGTH** : 5.55kV AC rms, for 1 minute (50/60Hz, between input terminal and case)
- OPERATING TEMPERATURE & HUMIDITY** : 0 to 40°C, 80%RH or less in non-condensing
- STORAGE TEMPERATURE & HUMIDITY** : -20 to 60°C, 70%RH or less in non-condensing
- TEMPERATURE COEFFICIENT** : Accuracy in 23°C±5°C × 0.1°C
- SAFETY LEVEL** : CE marking approved (IEC-61010-1, IEC-61010-2-032 CAT III 300V, CAT II 600V and EMC Test passed.)
- POWER SUPPLY** : 1.5V R03 or LR03 (AAA) batteries x 2
※NOTE : Batteries are not necessary for AC output
- POWER CONSUMPTION** : Approx. 7mA
- CONTINUOUS OPERATING TIME (for RMS output)** : Approx. 170 hours (alkaline), Approx. 85 hours (manganese)
- CONDUCTOR DIAMETER** : φ 27mm max.
- OUTPUT CABLE LENGTH** : 2.5m
- OUTPUT TERMINAL** : BNC connector (0.2V f.s)
- DIMENSIONS & WEIGHT** : 171(H) × 58(W) × 35(D)mm, Approx. 220g
- ACCESSORIES** : 731 BNC Conversion Adapter, 1020 Carrying Case, 1.5V LR03 (AAA) batteries x 2, Instruction Manual

2-2. MEASUREMENT SPECIFICATION

(23°C±5°C, <80%RH in non-condensing)

1. AC Current (~A) : AC Output

Range	Accuracy (45 to 66 Hz)	Resolution	Maximum Input
20A	±2%rdg±1%f.s	10mV/1A	20A rms
50A		4mV/1A	50A rms
100A		2mV/1A	100A rms
400A		0.5mV/1A	400A rms

Frequency Characteristic : 40Hz to 1kHz, following readings are added.
±6%rdg(20A range), ±3% rdg(50A/100A/400A ranges)

Range Selection : Manual-ranging

Overload Protection : 600A AC rms for 30 seconds

2. AC Current (~A) : RMS Output

Range	Accuracy (45 to 66 Hz)	Resolution	Maximum Input
20A	±3%rdg±1%f.s	10mV/1A	20A rms
50A		4mV/1A	50A rms
100A		2mV/1A	100A rms
400A		0.5mV/1A	400A rms

Frequency Characteristic : 40Hz to 1kHz, following readings are added.
±6%rdg(20A range), ±3% rdg(50A/100A/400A ranges)

Range Selection : Manual-ranging

Overload Protection : 600A AC rms for 30 seconds

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 Instrument

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

⚠ WARNING 2. Warning of High Power Line Measurements

High Power Line (High Energy Circuit) such as distribution transformers, bus bars and large motors are very dangerous. For safety of high power line measurement, 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 measurement. (Refer to fig. 1)

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. 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 batteries when the instrument is out of use for a long time. The exhausted batteries might leak electrolyte and corrode the inside.
- ⚠ **1.** Do not use the instrument under large temperature difference. Allow the instrument for a while to let it used to the surrounded temperature.

4. NAME ILLUSTRATION

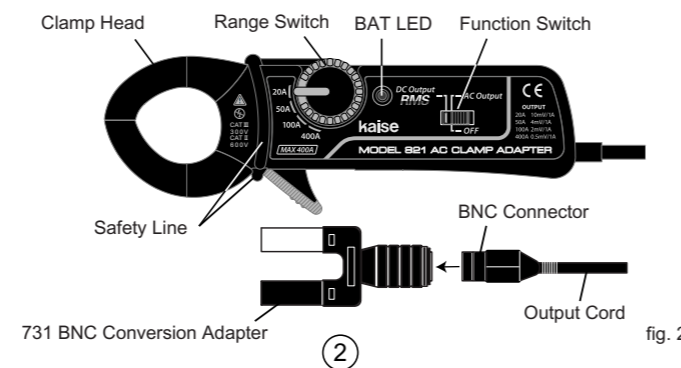


fig. 2

4-1. Clamp Head

Clamp a single conductor in the center of clamp head.

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

4-2. Safety Line

The line to protect yourself against electrical shock hazard. Do not put your fingers over this line while measurement.

4-3. Range Switch

The switch to change measurement ranges. 20A, 50A, 100A, or 400A can be selected.

4-4. BAT LED

Lights up in RMS output (DC Output).

The light disappears when battery voltage becomes at approx. 2.1V or less.

NOTE : Accuracy of RMS output is not assured after the light disappeared.

4-5. Function Switch

Selects AC output (AC Output) or RMS output (DC Output).

Set Function Switch to "OFF" after RMS output measurement.

4-6. Output Cord · BNC Connector

Insert BNC connector to the input terminal of connecting equipment fitting the both guide together. Turn the connector to the right until it is locked.

4-7. SYMBOL MARK

The following symbol marks shown on the instrument and instruction manual are listed in IEC 61010-1, IEC 61010-2-032 and ISO 3864.

⚠	Caution (refer to instruction manual.)	~	Alternating Current (AC)
⊞	Double Insulation	CE	CE Marking Conformity
⊗	Do not apply around, or remove from HAZARDOUS LIVE conductors.		

5. MEASUREMENT PROCEDURES

⚠ WARNINGS

- To avoid electrical shock hazard, do not use this instrument in the circuit over 600V AC.
- Do not measure any current that might exceed maximum input value.
- Read 「3. SAFETY PRECAUTIONS」 carefully to avoid electric shock hazard and serious damage to the instrument.
- Do not twist clamp head while measurement. Measurement should be incorrect if any pressure is applied.
- Do not touch any part of power line or the circuit to be measured.

- Set the range of connecting equipment enabling to measure 200mV AC. (Connecting equipments . . . Oscilloscopes, Memory recorders, or Testers)
- Insert BNC connector to the input terminal of connecting equipment fitting the both guide together. Turn the connector to the right until it is locked. To remove, turn the BNC connector to the left until it is unlocked and pull it out.

NOTE :

When removing the BNC connector, always confirm that it is completely unlocked. Do not pull the cable.

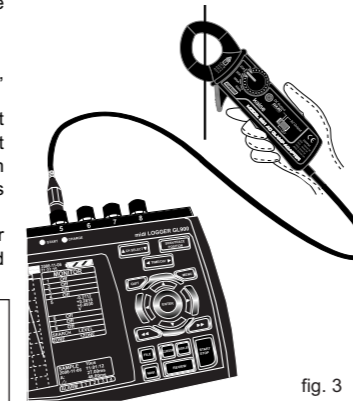


fig. 3

● When connecting BNC connector to banana-type input terminal (e.g. Testers, DMMs) ;

Put 731 BNC Conversion Adapter on the tip of BNC connector. Generally, insert black plug to COM terminal, and red plug to V terminal of the testers.

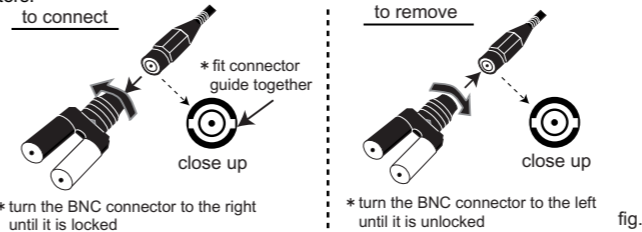


fig. 4

- Set Range Switch of Clamp Adapter to a suitable current range to be measured. If the current value to be measured is uncertain, set Range Switch to 400A.
- Select output waveform by Function Switch. AC Output (common with "OFF") : AC output. DC Output (RMS) : RMS output. **NOTE** : Batteries are necessary for RMS output. Confirm if the batteries are installed properly.

- Open clamp head, and clamp a single conductor in its center. **NOTE** : Measurement cannot be done if several conductors are clamped.
- Select the suitable range by Range Switch if necessary.
- Read the measurement value displayed on the connected equipment. **NOTE** : The displayed value is 0.2V f.s.
- Set Function Switch to "OFF" after the measurement of RMS output.

NOTE :

- Do not measure DC-superimposed circuit to avoid measurement error.
- Earth shielded conductor cannot be measured correctly.
- Confirm if the connecting equipment has enough input resistance.
- Reading the instruction manual of connecting equipment is recommended.
- Do not measure bare conductor.

6. MAINTENANCE

6-1. BATTERY REPLACEMENT

※Batteries are necessary for RMS output. Not used in AC output.

⚠ WARNING

To avoid electrical shock, detach clamp head from circuit when to replace battery. Set Function Switch to "OFF".

Replace the batteries when BAT LED is disappeared.

- Detach clamp head from circuit, and set Function Switch to "OFF".
- Unscrew battery cover and remove exhausted batteries.
- Insert 2 pcs of new 1.5V R03 or LR03 batteries in correct polarity.
- Fix 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.

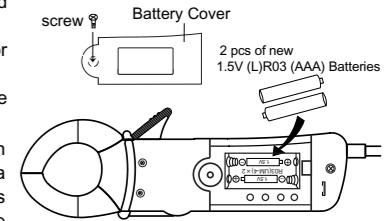


fig. 5

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 "BAT LED").
- Confirm that the keys are set correctly.
- Confirm that measured accuracy is adopted in the operating environment.
- Confirm that the body of this instrument has no cracks or any other damages.

WARRANTY

821 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 821 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 (REP.) / 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.