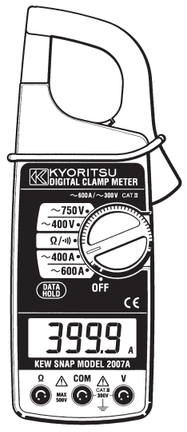
INSTRUCTION MANUAL



DIGITAL AC CLAMP METER

KEW SNAP SERIES

KEW SNAP 2007A

KYORITSU ELECTRICAL INSTRUMENTS WORKS,LTD.

1. Safety Warnings

○This instrument has been designed and tested according to IEC Publication 61010: Safety Requirements for Electronic Measuring Apparatus. This instruction manual contains warnings and safety rules which must be observed by the user to ensure safe operation of the instrument and retain it in safe condition. Therefore, read through these operating instructions before using the instrument.

⚠ WARNING

- ●Read through and understand instructions contained in this manual before starting using the instrument.
- ●Save and keep the manual handy to enable quick reference whenever necessary.
- ●Be sure to use the instrument only in its intended applications and to follow measurement procedures described in the manual.
- ●Be sure to understand and follow all safety instructions contained in the manual. Failure to follow the above instructions may cause injury, instrument damage and/or damage to equipment under test.

○The ⚠ symbol indicated on the instrument means that the user must refer to related parts in the manual for safe operation of the instrument. Be sure to carefully read the instructions following each ⚠ symbol in this manual.

⚠ **DANGER** is reserved for conditions and actions that are likely to cause serious or fatal injury.
⚠ **WARNING** is reserved for conditions and actions that can cause serious or fatal Injury.
⚠ **CAUTION** is reserved for conditions and actions that can cause minor injury or instrument damage.

○Following symbols are used on the instrument and in the instruction manual. Attention should be paid to each symbol to ensure your safety.

- ⚠ Refer to the instructions in the manual.
- ⧈ Indicates an instrument with double or reinforced insulation.
- Indicates that this instrument can clamp on bare conductors when measuring a voltage corresponding to the applicable Measurement category, which is marked next to this symbol.
- ∼ Indicates AC (Alternating Current).
- ⎓ Indicates DC (Direct Current).
- ≂ Indicates AC and DC.
- ⏚ Indicates Earth.
- Crossed-out wheel bin symbol (according to WEEE Directive: 2002/96/EC) indicating that this electrical product may not be treated as household waste, but that it must be collected and treated separately.

⚠ DANGER

- ●This instrument is designed to work in distribution systems where the line to earth has a maximum voltage of 300V. Be sure to use it within this rated voltage.
- ●Do not attempt to make measurement in the presence of flammable gasses, fumes, vapor or dust. Otherwise, the use of the instrument may cause sparking, which can lead to an explosion.
- ●Transformer jaw tips are designed not to short the circuit under test. If equipment under test has exposed conductive parts, however, extra precaution should be taken to minimize the possibility of shorting.
- ●Never attempt to use the instrument if its surface or your hand is wet.
- ●Do not exceed the maximum allowable input of any measurement range.
- ●Never open the battery compartment cover when making measurement.
- ●Never try to make measurement if any abnormal conditions, such as broken Transformer jaws or case is noted.
- ●The instrument is to be used only in its intended applications or conditions. Otherwise, safety functions equipped with the instrument doesn't work, and instrument damage or serious personal injury may be caused.

⚠ WARNING

- ●Never attempt to make any measurement if any abnormal conditions are noted, such as broken case, cracked test leads and exposed metal part.
- ●Do not turn the function selector switch with plugged in test leads connected to the circuit under test.
- ●Do not install substitute parts or make any modification to the instrument. Return the instrument to Kyoritsu or your distributor for repair or re-calibration.
- ●Do not try to replace the batteries if the surface of the instrument is wet.
- ●Always switch off the instrument before opening the battery compartment cover for battery replacement.
- ●Verify proper operation on a known source before starting to use the instrument or taking action as a result of the indication of the instrument.

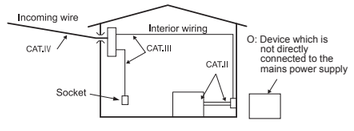
⚠ CAUTION

- ●Make sure that the function selector switch is set to the appropriate position before making measurement.
- ●Always make sure to insert each plug of the test leads fully into the appropriate terminal on the instrument.
- ●Make sure to remove the test leads from the instrument before making current measurement.
- ●Do not expose the instrument to the direct sun, extreme temperatures or dew fall.
- ●Be sure to set the function selector switch to the "OFF" position after use. When the instrument will not be in use for a long period of time, place it in storage after removing the battery.
- ●Use a damp cloth and detergent for cleaning the instrument. Do not use abrasives or solvents.

○Measurement categories (Over-voltage categories)

To ensure safe operation of measuring instruments, IEC61010 establishes safety standards for various electrical environments, categorized as O to CAT IV, and called measurement categories. Higher-numbered categories correspond to electrical environments with greater momentary energy, so a measuring instrument designed for CAT III environments can endure greater momentary energy than one designed for CAT II.

- O : Circuits which are not directly connected to the mains power supply.
- CAT Ⅱ: Primary electrical circuits of equipment connected to an AC electrical outlet by a power cord.
- CAT Ⅲ: Primary electrical circuits of the equipment connected directly to the distribution panel, and feeders from the distribution panel to outlets.
- CAT Ⅳ: The circuit from the service drop to the service entrance, and to the power meter and primary over-current protection device (distribution panel).



2. Features

- ●Tear-drop-shaped jaws for ease of use in crowded cable areas and other tight places
- ●Safety design conforming to the following provisions of IEC61010
  Measurement category Ⅲ 300V, pollution degree 2,
- ●Data Hold function for easy reading in dimly light or hard-to-read locations
- ●"Sleep" feature to extend battery life
- ●Beeper permits easy continuity check
- ●Provides a dynamic range of 4,000 counts full scale
- ●Uses shrouded transformer jaws to further improve safety

3. Specifications

●Measuring Ranges and Accuracy

AC Current (∿ A)

Range	Measuring Range	Accuracy
400A	0～399.9A	±1.5%rdg±4dgt (50/60Hz)
600A	0～599A	±2.0%rdg±5dgt (40～400Hz)

AC Voltage (∿ V) (Input impedance: approx. 2MΩ)

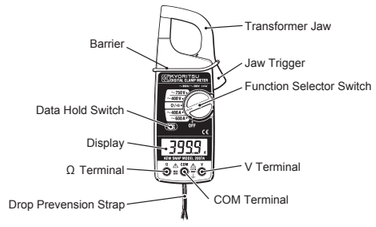
Range	Measuring Range	Accuracy
400V	0～399.9V	±1.2%rdg±3dgt (50/60Hz)
750V	0～749V	±1.5%rdg±4dgt (40～400Hz)

Resistance (Ω / ·))(Auto-ranging)

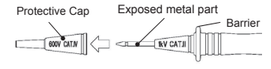
Range	Measuring Range	Accuracy
400Ω / 4kΩ	0～399.9Ω 0.150～3.999kΩ	±1.5%rdg±2dgt (Buzzer beeps below 50±35Ω)

- ●**Operating System** : Dual Integration
- ●**Display** : Liquid crystal display (maximum count: 3999)
- ●**Low Battery Warning** :"BATT" is shown on the display
- ●**Overrange Indication** :"OL" is shown on the display
- ●**Response Time** :Approx. 2 seconds
- ●**Sample Rate** :About 2.5 times per second
- ●**Location for use** : Indoor use, Altitude up to 2000m
- ●**Temperature and Humidity for Guranteed Accuracy** :23±5℃, relative humidity up to 85% without condensation
- ●**Operating Temperature and Humidity** :0-40℃, relative humidity up to 85% without condensation
- ●**Storage Temperature and Humidity** :-20-60℃, relative humidity up to 85% without condensation
- ●**Power Source** :Two R03 or equivalent (DC1.5V) batteries
- ●**Current Consumption** :Approx. 2.5mA.
- ●**Sleep function** :Automatically powered down in about 10 minutes after the last switch operation (power consumption in the sleep mode is about 35μ A.)
- ●**Standards** :IEC61010-1 CAT Ⅲ 300V, pollution degree 2
  IEC61010-2-030
  IEC61010-031
  IEC61010-2-032
  IEC61326(EMC)
- ●**Location for use** In-door use, altitude 2000m or less
- ●**Overload Protection** :AC current ranges: 720A AC for 10sec
  AC voltage ranges: 900V AC for 10sec
  Resistance ranges: 600V AC for 10sec
- ●**Withstand Voltage** :3470VAC(RMS,50/60Hz) for 5 sec. between electrical circuit and housing case
- ●**Insulation Resistance** :10MΩ or greater at 1000V between electrical circuit and housing case
- ●**Conductor Size** :Approx. 33mm diameter max.
- ●**Dimensions** :195(L)x78(W)x36(D)mm
- ●**Weight** :Approx. 260g (including batteries)
- ●**Accessories** :Test leads M-7066A
  Two R03 batteries
  Carrying case M-9097
  Instruction manual
- ●**Optional Accessories** :Multi-Tran M-8008

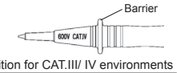
4. Instrument Layout



Barrier:
It is a part providing protection against electrical shock and ensuring the minimum required air and creepage distances.



Uncapped condition for CAT.II environment

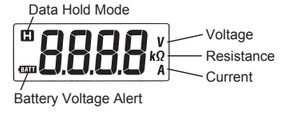


Capped condition for CAT.III/ IV environments

Use of our Protective Cap offers different lengths of the exposed metal part suitable for the test environments.
Please attach the Cap onto the metal part under CAT.III or higher test environments.

⚠ CAUTION
The Cap should be firmly attached to the Probes.
Keep your fingers and hands behind the barrier during measurement.

●LCD INDICATOR



5. Preparation for Measurement

5－1 Checking Battery Voltage

Set the function selector switch to any position other than "OFF". When the display is clear without " BATT " showing, proceed to measurement. When the display blanks or " BATT " is indicated, replace the batteries according to the instructions described in section 8. Battery Replacement.

NOTE
The sleep feature automatically turns the instrument off in a certain period of time after the last switch operation. Therefore, the display may be blank with the function selector switch set to a position other than "OFF". To operate the instrument in this case, set the switch back to the "OFF" position, then to the desired position, or press any button. If the display still blanks, the batteries are exhausted. Replace the batteries.

5－2 Checking Switch Setting and Operation

Make sure that the function selector switch is set to the correct position and the data hold function is deactivated. Otherwise, desired measurement cannot be made.

6. Measurement

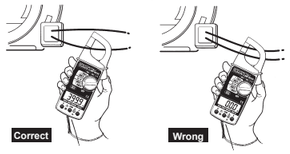
6－1 AC Current Measurement

⚠ WARNING

- ●This instrument is designed to work in distribution systems where the line to earth has a maximum voltage of 300V. Be sure to use it within this rated voltage.
- ●Transformer jaw tips are designed to minimize the possibility of shorting conductors in the circuit under test. If equipment under test has exposed conductive parts, however, extra precaution should be taken to avoid possible shorting.
- ●Do not make measurement with the battery compartment cover removed.
- ●Do not make current measurement with the test leads connected to the instrument.
- ●Keep your fingers and hands behind the barrier during measurement.

(1) Set the function selector switch to the "400A" or "600A" position.
(2) Press the trigger to open the transformer jaws and clamp onto one conductor only.
(3) Take the reading on the display.

Note:
◇During current measurement, keep the transformer jaws fully closed. Otherwise, accurate measurement cannot be made. The maximum conductor size is 33mm in diameter.
◇When measuring a larger current, the transformer jaws may buzz. This does not affect the instrument's accuracy.

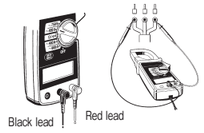


6－2 AC Voltage Measurements

⚠ DANGER

- ●This instrument is designed to work in distribution systems where the line to earth has a maximum voltage of 300V. Be sure to use it within this rated voltage.
- ●Do not make measurement with the battery compartment cover removed.
- ●Keep your fingers and hands behind the barrier during measurement.

(1) Set the function selector switch to the "400V" or "750V" position. "
(2) Plug the red test lead into the V terminal and the black test lead into the COM terminal.
(3) Connect the test lead prods to the circuit under test and take the reading on the display.



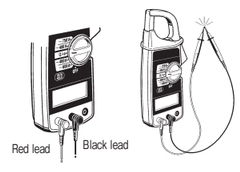
6－3 Resistance Measurement

⚠ DANGER

- ●Always make sure that the circuit under test is powered off.
- ●Do not make measurement with the battery compartment cover removed.
- ●Keep your fingers and hands behind the barrier during measurement.

(1) Set the function selector switch to the " Ω / ·)) " position.
(2) Plug the red test lead into the Ω terminal and the black test lead into the COM terminal.
(3) Check that the display reads "OL". With the test lead prods shorted together, also check that the buzzer beeps and the display reads "0" .
(4) Connect the test lead prods to the circuit under test and take the reading on the display. The buzzer beeps the reading is below about 50Ω.

NOTE
◇When shorting the test lead prods together, the display may show a very small resistance instead of "0". This is the resistance of the test leads.
◇If one of the test leads has an open, the display reads "OL".



7. Other Functions

7－1 Sleep Function

NOTE
The instrument still consumes small amount of battery power in the sleep mode. Make sure to set the function selector switch to the OFF position after use.

This is a function to prevent the instrument from being left powered on in order to conserve battery life. This function causes the instrument to automatically enter the sleep (powered-down) mode about 10 minutes after the last switch or button operation.
To exit the sleep mode, turn the function selector switch back to "OFF", then to any other position, or press any button.

How to disable the sleep function:
To disable the sleep function, power on the instrument with the Data Hold button pressed. "P.OFF" is shown on the display for about 3 seconds after the instrument is powered on.
To enable the sleep function, power the instrument off, then power it on without pressing the Data Hold button.

7－2 Data Hold Function

This is a function used to freeze the measured value on the display. Press the Data Hold button to freeze the reading. The reading will be held regardless of subsequent changes in input. " H " is shown on the upper left corner of the display while the instrument is in the Data Hold mode.
To exit the Data Hold mode, press the Data Hold button again.

NOTE:
◇If the instrument in the Data Hold mode enters the sleep mode, the Data Hold mode will be cancelled.

8. Battery Replacement

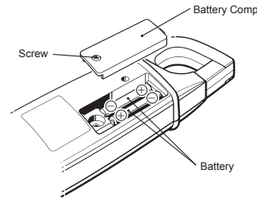
⚠ WARNING
To avoid electric shock hazard, make sure to set the function selector switch to "OFF" and remove the test leads from the instrument before trying to replace the batteries.

⚠ CAUTION

- ●Do not mix new and old batteries.
- ●Make sure to install battery in correct polatiry as indicated inside the battery compartment.

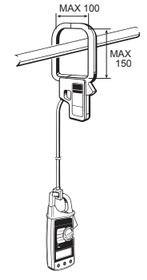
When " BATT " is shown on the display, replace the batteries. Note that when the battery is completely exhausted, the display blanks without " BATT " shown.

(1) Set the function selector swith to the "OFF" position.
(2) Unscrew and remove the battery compartment on the bottom of the instrument.
(3) Replace the batteries observing correct polarity. Use two new R03 or equivalent batteries.
(4) Mount and screw the battery compartment cover.



9. Optional Accessories

●Model 8008 Multi-Tran
Multi-Tran Model 8008 is designed to increase the measuring capability of a clamp meter. With the use of the Multi-tran, you can measure AC current up to 3000A and a large bus-bar or conductor.
(1) Set the function selector switch to the "400A" position.
(2) As shown in the figure, clamp KEW SNAP 2007A onto the pickup coil of Model 8008.
(3) Clamp Model 8008 onto the bus-bar or conductor under test.
(4) Take the reading on KEW SNAP 2007A and multiply it by 10.



DISTRIBUTOR

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