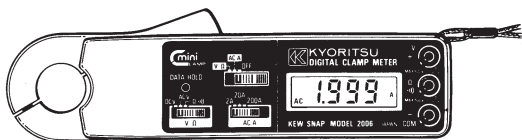


INSTRUCTION MANUAL



MINIATURE AC DIGITAL CLAMP METERS

KEW SNAP SERIES
MODEL 2006



**KYORITSU ELECTRICAL
INSTRUMENTS WORKS, LTD.**

Contents

	Page
1. Safety Warning	1
2. Features	3
3. Specifications	4
4. Instrument Layout	7
5. Measuring Methods	9
5-1. Preparation	9
5-2. Current Measurements	9
5-3. Voltage Measurements	10
5-3-1. DC Voltage Measurements	11
5-3-2. AC Voltage Measurements	11
5-4. Resistance Measurements	12
5-5. Data Hold	13
6. Battery Replacement	13
7. Optional Accessories	14
7-1. KEW Multi-tran Model 8008	14

1. Safety Warning


This instruction manual contains warnings and safety rules that must be observed by the user to ensure safe operation of the instrument and retain it in safe condition.

Therefore, read these operating instructions thoroughly and completely before using the instrument.

The symbol  on the instrument means that the user must refer to the relevant section of this instruction manual for safe operation of the instrument.

Pay particular attention to all  **WARNINGS** and  **CAUTIONS** in this instruction manual.

 **WARNING** indicates warnings to avoid an electrical shock.

 **CAUTION** indicates cautions to avoid damage to the instrument and make accurate measurements.

WARNINGS

1. Never open the instrument when making measurements.
2. If the instrument shows the following conditions, do not try to make measurements and have the instrument checked for inspection or repair.
 - Instrument shows visual damage.
 - Test leads are damaged.
 - Instrument can not be operated for intended measurements.
 - Instrument has been stored for long period of time under abnormal conditions.
 - Instrument has been subjected to severe shocks and vibrations.
3. Do not open the battery compartment cover when measuring voltage.
4. Remove the test leads from the instrument when replacing the batteries.
5. The transformer jaws are made of metal and their tips are not insulated. Be especially careful about the hazard of possible shorting where the equipment under test has exposed metal parts.
6. Do not use the instrument on a circuit with a voltage of higher than AC 600V as the instrument is not designed for measurement above this voltage.

7. Do not make measurements in an explosive atmosphere (i.e. in the presence of flammable gasses or fumes, vapour or dust).
8. Never ground yourself when conducting electrical tests. Do not touch exposed metal pipes, outlets, fixtures, etc., which might be at ground potential. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats, or any approved insulating material.
9. Adhere to local and national safety codes. Individual protective equipment must be used to prevent shock and arc blast injury where hazardous live conductors are exposed.

CAUTIONS

1. When not in use for a long period of time, place the instrument in storage after removing the batteries from it.
2. Never make measurements if the instrument, the test leads or your hand is wet.
3. Make battery replacement with power switch set to OFF position.
4. Do not exceed maximum limit for each input.
5. Do not apply voltage across COM and OHM terminals.
6. Do not measure current with test leads inserted into voltage or common terminal.
7. Do not expose the instrument to the direct sun, extremes of temperature and humidity or dew fall.
8. Calibration and repair of any instrument should only be performed by qualified and trained service technicians.
9. Do not install substitute parts or perform any unauthorized modification of the instrument. Return the unit to Kyoritsu Electrical Instruments Works, Ltd. for repair.
10. Use a damp cloth and detergent for cleaning the case of the instrument. Do not use abrasives or solvents.
11. Always set the Range Selector Switch to the OFF position after use.
12. The instrument must be used by a competent, trained person and operated in strict accordance with the instructions. Kyoritsu Electrical Instruments Works, Ltd. will not accept liability for any damage or injury caused by misuse or noncompliance with the instructions or safety procedures. It is essential to read and understand the safety rules contained in the instructions. They must be observed when using the instrument.

2. Features

- Miniature digital clamp meter with current measurement capability up to 200A AC. AC/DC voltage and resistance.
- 1 mA resolution on 2A AC range.
- 1 mV resolution on 2V AC and DC ranges.
- Operates from 2 × 1.5 battery cell.
- Autoranging in AC and DC volt ranges.
- Electronic overload protection on resistance ranges up to 500V AC or DC.
- Continuity test buzzer (continuous sound).
- Buzzer also sounds (intermittently) when reading exceeds full scale on AC current ranges, range is going up on AC and DC volts and function and range switches are operated.
- Ideal for working in crowded switch boxes and cable areas where access is difficult for other large-sized clamp meters.
- Compact, lightweight and easy to use.
- Covers a broad range of application needs from diagnosing and maintenance of electrical equipment to testing at laboratories and checking DC circuits without interruption of operation.
- A wide frequency response of 40Hz to 1 kHz for both AC current and voltage measurements.
- Safety design test leads have shielded banana plugs that fit into recessed input terminals.
- Data hold facility to allow for easy reading in dimly lit or hard to reach places. In such difficult situations the display can be observed away from the conductor.

3. Specifications

(Specified for 23°C ±5°C at 75% max. relative humidity)

Function	Ranges	Accuracy
AC current	2A (0–1.999A) 20A (0–19.99A)	±2.0%rdg ±5dgt (50Hz–1kHz)
	200A (0–199.9A)	±2.0%rdg ±5dgt (50, 60kHz) ±5%rdg ±10dgt (40Hz–1kHz)
	2V (0–1.999V)	
AC Voltage	20V (2–19.99V)	±1.0%rdg ±2dgt (DC volts)
DC Voltage	200V (20–199.9V)	±1.5%rdg ±2dgt (50, 60Hz)
	500V (200–500V)	±1.5%rdg ±5dgt (40Hz–1kHz)
Resistance	2k Ω (0–1.999k Ω)	±1.5%rdg ±2dgt

Continuity test buzzer sounds at less than 350 Ω ±60 Ω

Operating

Principle: Dual Integration system

Display: 3-1/2 digit liquid crystal display with maximum reading of 1999

Range

Selection: Manual on AC current, automatic on AC and DC volts

Low Battery

Indication: “B” sign shows

Overrange

Indication: Numeral “1” appears on highest digit (except voltage ranges)

Response

Time: Approx. 1 second

Sample Rate: Approx. 3 times per second

Data Hold: For all ranges

Operating

Temperature

& Humidity: 0°C — +50°C at 85% max. relative humidity

Storage

Temperature

& Humidity: –10°C — +50°C at 75% max. relative humidity

Current

Consumption: Approx. 3mA

Battery Life: Approx. 300 hours on continuous use (for manganese battery)

Overload

Protection: 500A AC/DC max. on AC 200A current ranges
1000V DC max. on voltage ranges
500V AC/DC max. on resistance range
(electronic overload protection)

Insulation

Resistance: 1000V/10M Ω min. between electrical circuit and housing case or metal section of transformer jaws.

Frequency

Response: 40Hz—1 kHz

Withstand

Voltage: 2200V AC max. for one minute between electrical circuit and housing case or metal section of transformer jaws.

Conductor

Size: Approx. 19mm max.

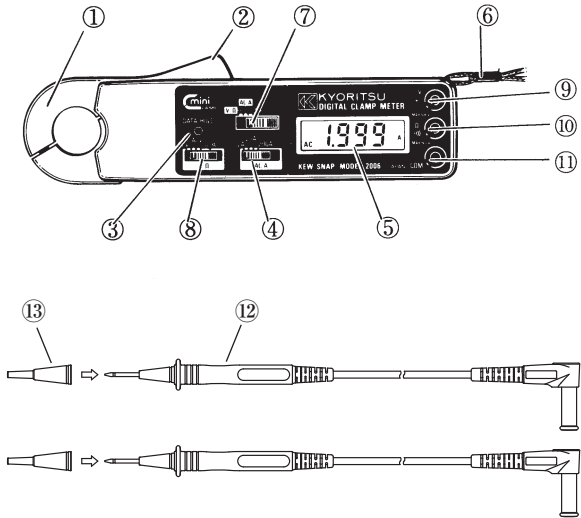
Dimensions: 184 (L) \times 54 (W) \times 32 (D) mm

Weight: Approx. 160g (battery included)

Power Source: 2 \times 1.5V battery type SUM-3, AA, R6 or equivalent.

Accessories: (included) Test Leads Model 7066A,
2 \times 1.5V battery,
carrying case, instruction manual
(optional) KEW Multi-trans Model 8008

4. Instrument Layout



- ① **Transformer Jaws**
Picks up current flowing through the conductor.
- ② **Jaw Trigger**
Operates the transformer jaws. Press to open the jaws.
- ③ **Data Hold Switch**
Simply push this button to freeze the reading. "DH" appears on the display. This allows easy reading in dimly lit or hard to reach places. After the reading is taken push it again to release the lock.
- ④ **AC Current Range Selector Switch**
Manually selects AC current ranges.

- ⑤ **LCD Display**
3-1/2 digit, liquid crystal display with maximum indication of 1999. Function symbols, units and decimal point automatically appear on the display as each of the function and range switches is selected. "B" also appears automatically for low battery warning. "1" is displayed for overrange warning (except for AC and DC voltage ranges). "DH" and "AC" appears to indicate data hold and AC current or voltage measurements.
- ⑥ **Hand Strap**
Prevents the instrument from slipping off the hand during use.
- ⑦ **Power/Function Switch**
Turns power on and off. Also, selects AC current, voltage and resistance measurement functions.
- ⑧ **Function Switch**
Selects AC voltage, DC voltage and resistance measurement functions.
- ⑨ **Volt Terminal**
Accepts test leads for voltage measurement.
- ⑩ **OHM Terminal**
Accepts test leads for resistance measurements.
- ⑪ **COM Terminal**
Accepts one of the test leads for voltage and resistance measurements. (always connect to the low voltage side of the circuit under test.)
- ⑫ **Test leads Model 7066A**
- ⑬ **Protective Cap**
This Cap is detachable.

5. Measuring Method

BEFORE USING THE INSTRUMENT, READ THE SAFETY WARNING THOROUGHLY.

5-1. Preparation

- (1) When the power switch is set to V · Ω or AC · A position, all display readings once flicker and then settle to the function selected. Battery voltage is OK when the display is clear and symbol “B” does not appear. If no display readings appear or “B” only is indicated, replace the battery in accordance with the battery replacement instructions in section 6.

 **Caution**

Replace with new batteries when battery voltage becomes insufficient and symbol “B” appears on the lower left hand of the LCD display.

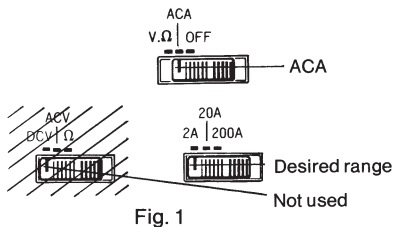
- (2) The instrument is in data hold mode when DH appears on the display. Push the data hold switch to clear the display.

5-2. Current Measurements (2/20/200A – 3 manual ranges)

 **Caution**

- **Make certain that the test leads are removed from the input terminals.**
- **The maximum diameter of the conductor to be measured is 19mm. Do not clamp onto a conductor larger than this. Accurate measurements cannot be made when the instrument is clamped onto a larger conductor and the transformer jaws are not fully closed.**
- **To obtain maximum accuracy the transformer jaws are precisely adjusted. Exercise extreme care to avoid shock, vibration or excessive force when using this instrument.**

- (1) Set all selector switches as indicated in Fig. 1.



- (2) Press the jaw trigger to open the transformer jaws and clamp onto one conductor only. Take the reading as indicated on the display.

⚠ Caution

Overrange indication appears when input current exceeds full scale of the range selected. Buzzer also sounds intermittently. Switch over to a higher range when overrange indication appears.

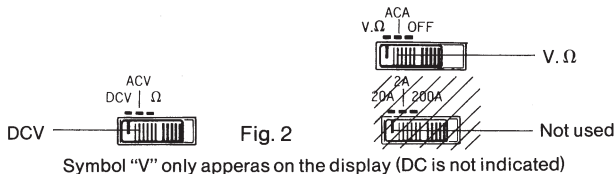
5-3 Voltage Measurements

⚠ Caution

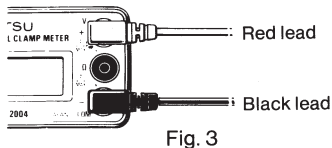
- Be careful not to apply excessive input. Maximum allowable input voltages is: 500V AC and DC. Buzzer sounds when Model 2006 autoranges from 2V AC or DC upward, but when input voltage exceeds 500V no indication will be given by the overrange symbol on the display or the sounding or the buzzer.
- To avoid shock hazard never open the battery compartment cover during voltage measurement.

5-3-1 DC Voltage Measurements (2/20/200/500V— Autoranges)

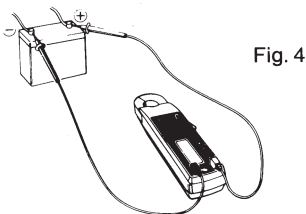
- (1) Set the function selector switches as shown in Fig. 2.



- (2) Insert the red test lead into the VOLT terminal of the instrument and the black test lead into the COM terminal as shown in Fig. 3.



- (3) Touch the test lead prods to the circuit under test. The DC voltage measured will be indicated on the display. When a negative (–) reading is obtained a negative voltage is present in the circuit where the red test lead is contacted as shown in Fig. 4.



5-3-2 AC Voltage Measurements (2/20/200/500V— Autoranges)

- (1) Set the function selector switches as shown in Fig. 5.

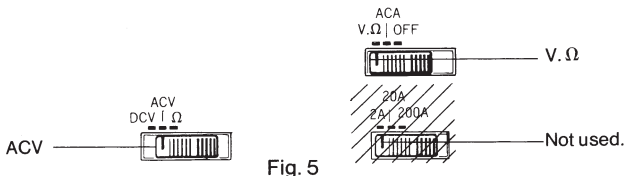


Fig. 5

Symbol "AC.V" only apperas on the display.

- (2) As is with the DC voltage measurements, insert the test leads into the input terminals of the instrument.
- (3) Touch the test lead prods to the circuit under test. The AC voltage measured will be indicated on the display.

5-4 Resistance Measurements (Continuity Test)

- (1) Set the function selector switches as shown in Fig. 6.

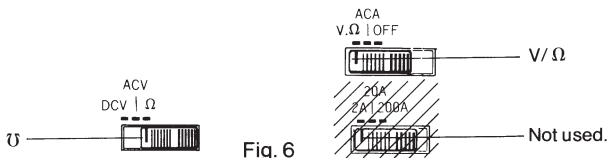


Fig. 6

Symbol "k Ω" apperas on the display.

- (2) Insert the red test lead into the OHM terminal and black test lead into the COM terminal as shown in Fig. 7.
- (3) First, make certain that the display shows overranging with no input connected. With the test leads shorted, make certain that the display reads zero (00.0ohm). A count of 00.2ohm or thereabout may sometimes be displayed. This is due to the resistance of the test leads and does not indicate a faulty condition of the instrument.

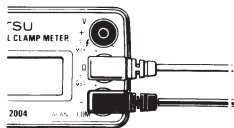


Fig. 7

- (4) Touch the test lead prods to the circuit under test. The resistance measured will be indicated on the display. When the resistance is above 2kohm an overrange indication will occur.

⚠ Caution

Make certain that the circuit under test is de-energized. Taking resistance measurements on live circuit can cause electrical shock or damage to the instrument. Terminal voltage is approximately 0.4V when the input terminals are open. A positive (+) output voltage is available from OHM terminal. Short circuit current is approximately 0.2mA.

5-5 Data Hold

When the data hold switch is pressed, the reading will be held as shown in Fig. 8. This is especially useful for taking a reading in dimly lit or hard-to-reach places. When the switch is pressed again the data hold will be released (“DH disappears”).

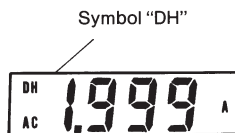


Fig. 8

6. Battery Replacement

IF the low battery symbol “B” appears replace the battery.

⚠ Caution

Do not replace the battery while measuring.

- (1) Remove the test lead from the instrument and set the function/range switch to the off position.
- (2) Loosen the screws of the battery compartment cover at the back of housing. And then slide and remove the battery compartment cover.

Note: Do not loosen the screws completely to the end in order to avoid losing them.

- (3) Replace the battery.
- (4) Push the battery compartment cover into place and fasten the screws firmly.

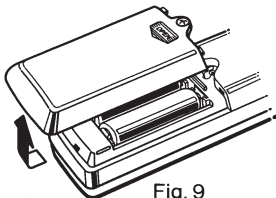


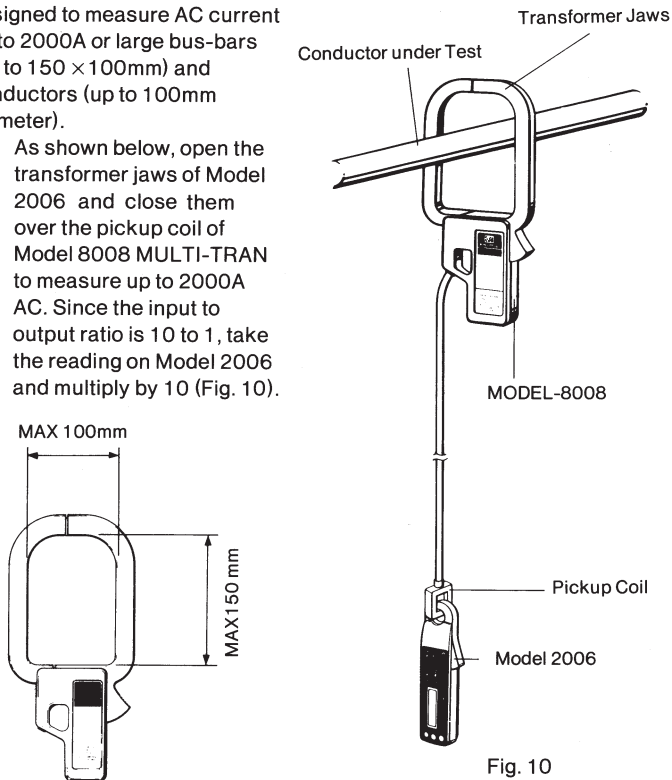
Fig. 9

7. Optional Accessories

7-1. Model 8008

Model 8008 MULTI-TRAN is designed to measure AC current up to 2000A or large bus-bars (up to $150 \times 100\text{mm}$) and conductors (up to 100mm diameter).

- (1) As shown below, open the transformer jaws of Model 2006 and close them over the pickup coil of Model 8008 MULTI-TRAN to measure up to 2000A AC. Since the input to output ratio is 10 to 1, take the reading on Model 2006 and multiply by 10 (Fig. 10).



Note: Model 8008 is not designed for DC current measurements.

Waste Electrical and Electronic Equipment (WEEE),
Directive 2002/96/EC

This Product complies with the WEEE Directive (2002/96/EC) marking requirement.

The affixed product label (see below) indicates that you must not discard this electrical/ electronic product in domestic household waste.

Product Category

With reference to the equipment types in the WEEE directive Annex 1, this product is classified as a “Monitoring and Control instrumentation” product.



MEMO

MEMO

DISTRIBUTOR

Kyoritsu reserves the right to change specifications or designs described in this manual without notice and without obligations.



KYORITSU ELECTRICAL INSTRUMENTS WORKS, LTD.

No.5-20,Nakane 2-chome, Meguro-ku,
Tokyo, 152-0031 Japan
Phone: +81-3-3723-0131
Fax: +81-3-3723-0152
Factory: Ehime

www.kew-ltd.co.jp