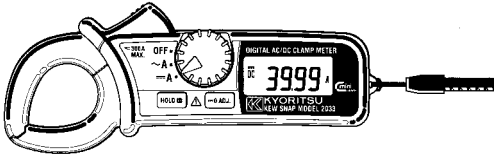
INSTRUCTION MANUAL



DIGITAL AC/DC CLAMP METER

KEW SNAP SERIES

MODEL 2033

KYORITSU ELECTRICAL INSTRUMENTS WORKS, LTD.

Contents

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 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 injury or instrument damage.**

⚠ DANGER

- **Never make measurement on a circuit above 300V AC or DC.**
- **Do not attempt to make measurement in the presence of flammable gasses. Otherwise, the use of the instrument may cause sparking, which can lead to an explosion.**
- **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.**

⚠ WARNING

- **Never attempt to make any measurement, if the instrument has any structural abnormality such as cracked case and exposed metal part.**
- **Do not install substitute parts or make any modification to the instrument. Return the instrument to 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.**

⚠ CAUTION

- **Make sure that the function selector switch is set to an appropriate position before making 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 batteries.**

2. Features

- Small Clamp Meter capable of AC/DC current measurement.
- Tear-drop-shaped jaws for ease of use in crowded cable areas and other tight places
- Provides a wide measuring range from 0 up to 300A
- Designed to CAT.III 300V and pollution degree 2 specified by the international safety standard, IEC 61010-1.
- Data hold function to allow easy readings in dimly lit or hard-to-read locations
- Sleep function to conserve battery life.
- Provides a dynamic range of 4,000 counts full scale
- Wide frequency range from 20Hz to 1kHz
- Transformer jaws fitted with Guard to further improve safety

3. Specifications

●Measurement Ranges and Accuracy

DC current (Auto-ranging)

Range	Measuring Range	Accuracy
40A	0 ～ ±40.00A	±1.0%rdg±4dgt
300A	±20.0 ～ ±200.0A	±1.5%rdg±4dgt
	±200.0 ～ ±300.0A	±3.0%rdg

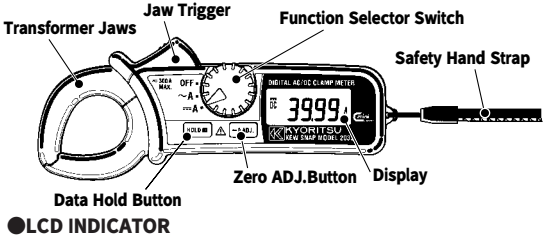
AC current (Auto-ranging)

Range	Measuring Range	Accuracy
40A	0 ～ 40.00A	±1.0%rdg±4dgt(50/60Hz) ±2.5%rdg±4dgt(20Hz～1kHz)
300A	20.0 ～ 200.0A	±1.5%rdg±4dgt(50/60Hz) ±2.5%rdg±4dgt(20Hz～1kHz)
	200.0 ～ 300.0A	±3.5%rdg (50/60Hz) ±4.0%rdg (20Hz～1kHz)

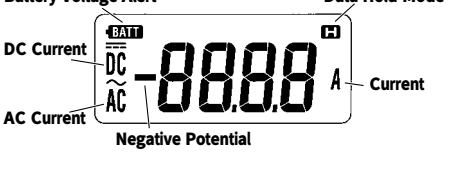
●Operating System : Dual Integration
●Display : Liquid crystal display with a maximun count of 4,000
●Over-range Indication : "OL" is displayed
●Response Time : Approx. 2 sec.
●Sample Rate : Approx. 2.5 counts/sec
●Temperature and Humidity for Guaranteed Accuracy
: 23℃±5℃, relative humidity up to 85% without condensation
●Operating Temperature
: 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 LR44 or SR44(DC3V) batteries
●Current Consumption : Approx. 9mA
●Sleep function : Automatically goes into the sleep mode in about 5 minutes after the last switch operation. (Current consumption: approx. 20μA)
●Conductor Size : Approx. 24mm diameter max.
●Dimensions : 147(L)×59(W)×25(D)mm
●Weight : Approx 100g(batteries included)

●Safety Standards : IEC 61010-1 CAT.III 300V
: IEC 61010-2-32
●EMC Standards : IEC 61326
●Overload protection : AC/DC current ranges; 360A AC/DC for 10sec
●Withstand voltage : 3700V AC for 1 minute between housing case and metal part of jaws
●Insulation Resistance: 10MΩ or greater at 1000V between housing case and metal part of jaws
●Accessories : Two LR44 batteries
Carrying case MODEL 9090
Instruction manual
●Optional Accessories : Multi-Tran MODEL 8004 , 8008
: Energizer MODEL 8021

4. Instrument Layout



●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 shown, replace the batteries according to section 8: Battery Replacement.

NOTE

The Sleep function automatically turns the instrument off in about five minutes 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 have exhausted. Then, replace the batteries.

5—2 Checking Switch Setting

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

⚠ DANGER

●Do not make measurement on a circuit above 300V AC. This may cause shock hazard.

●Do not make measurement with the battery compartment cover removed from the instrument.

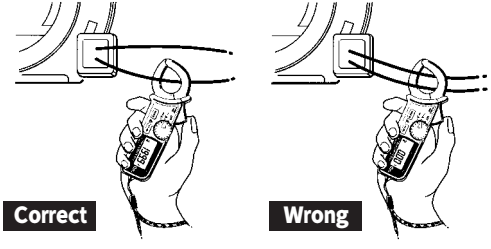
(1) Set the Function Selector switch to the "∼A" position. "AC" should be shown on the lower left corner of the display.

(2) Press the jaw trigger to open the transformer jaws and clamp them onto the conductor under test, then take the reading on the display. Position the conductor at the center of the transformer jaws for accurate measurement.

Note :

◇During current measurement, keep the transformer jaws fully closed. Otherwise,accurate measurement cannot be made. The maximum measurable conductor size is approx. 24mm in diameter.

◇Unlike in DC current measurement, zero adjustment is not necessary in AC current measurement. There is no polarity in the reading either.



6—2 DC Current Measurement

⚠ DANGER

●Do not make measurement on a circuit above 300V AC. This may cause shock hazard.

●Do not make measurement with the battery compartment cover removed from the instrument.

(1) Set the Function Selector switch to the "⎓A" position DC should be shown on the upper left corner of the display.

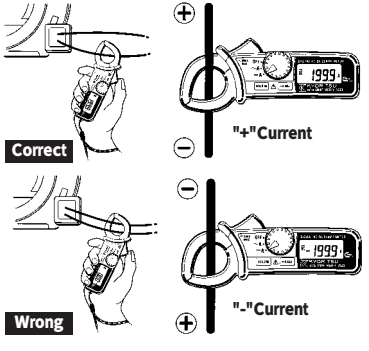
(2) With the transformer jaws closed and without clamping them onto the conductor, press the Zero ADJ. Button for about one second to zero adjust the display.

(3) Press the jaw trigger to open the transformer jaws and clamp them onto the conductor under test and take the reading on the display. Position the conductor at the center of the transformer jaws for accurate measurement.

Note

◇During current measurement, keep the transformer jaws fully closed. Otherwise, accurate measurement cannot be made. The maximum measurable conductor size is approx. 24mm in diameter.

◇ When the current flows from the upside (the display side)to the underside of the instrument, the polarity of the reading is positive and vice versa. (See the figure at the left.)



7. Other functions

7—1 Sleep Function

NOTE

The instrument consumes small amount of current even in the Sleep (power-down) mode. Make sure to turn the Function Selector switch to the "OFF" position, when the instrument is not in 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 go into the Sleep (powered-down) mode about 5 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.

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 the subsequent variation in current under test. The "H" symbol is shown on the upper right 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 to release it.

NOTE:

If the instrument in the Data Hold mode goes into "sleep," the Data Hold function will remain effective when the instrument is powered on again.

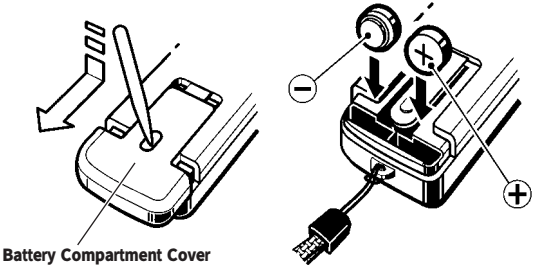
8. Battery Replacement

> ⚠ **WARNING**
> ●To avoid electric shock hazard, never try to replace batteries during measurement.

> ⚠ **CAUTION**
> ●Do not mix new and old batteries.
> ●Make sure to install batteries in correct polatiry as indicated in the battery compartment.

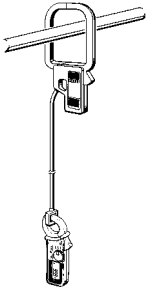
If the instrumet is powered on, but the display blanks or BATT is shown on the display, replace the batteries

(1) Set the Function Selector switch to the "OFF" position.
(2) Press in the hole on the battery compartment cover with the tip of a pointed object, then slide open the cover.
(3) Replace the batteries observing correct polarity. Make sure to use two new LR44 or SR44 batteries.
(4) Slide the battery compartment cover back in place.



9. Optional Accessories

●MODEL 8004 and 8008 (For AC current measurement only)
Multi-Tran MODEL 8004 and 8008 are designed to increase the measuring capability of a clamp meter. With the use of a Multi-tran, you can not only extend current range over 300A, but also clamp on a large bus-bar or conductor.

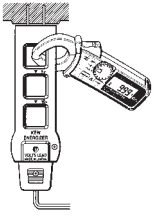


(1) Set the Function Selector switch of MODEL 2033 to the "∼A" position.
(2) As shown in the figure, open the transformer jaws of MODEL 2033 and close them over the pickup coil of MODEL 8004 or 8008.
(3) Clamp the Multi-Tran onto the bus-bar or conductor under test.
(4) Take the reading on MODEL 2033 and multiply it by 10.

Model	Maximum Conductor Size	Range	Mutiplication Factor
8004	60mm in diameter	0∼1000A AC	10:1
8008	100mm in diameter	0∼3000A AC	10:1

●MODEL 8021(Energizer)
Energizer splits an appliance's two-conductor power cord for current readings with a clamp meter.

(1) As shown on the right, connect the Energizer between an AC power outlet and the appliance under test and clamp MODEL 2033 onto the loop "×1" of the Energizer. Take the reading on MODEL 2033 for the value of the current through the power cord. The maximum allowable current for the Energizer is 10A.
(2) When measuring low currents, clamp MODEL 2033 onto the loop "5×" or "10×" of the Energizer and divide the reading by 5 or 10 respectively.



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