1. Features

- Designed to meet international safety standards.
- Meets IEC 61010-1 & 61010-2-020 &IEC 61010-1 & 61010-2-032 Measurement Category (CAT) IV 600V Caluation Degree 2
- Double molded main body provides comfortable operation.
- D.O.S, Front Switch function to facilitate working at dirty site situations. (KEW2005 only)
- SEL (Safety) function indicates measurement variation.
- (Current, voltage, resistance measurement)
- SEL gets output enables easy reading of min & max value during measurement.
- With Continuity & Diode Check Function.
- MAX & MIN (Max Contact Voltage) Function for wiring check.
- 600V Input protection.
- Sleep function to extend battery life.
- High precision: ±0.2% of F.S ±0.005% of F.S at 50/60Hz

2. Safety Warnings

- This instrument has been designed, manufactured and tested in compliance with IEC 61010. Safety measurements for Electronic Measuring apparatus, and delivered in the package after passing the inspection. This instruction manual contains warnings and safety notes which must be observed by the user to ensure safe operation of the instrument and retain it in safe condition.
- Read through and understand the instructions contained in this manual before using the instrument.
- Keep the manual at hand to enable quick reference whenever necessary.
- The instrument is to be used only in its intended applications.
- Understand and follow all the safety precautions contained in the manual.
- It is essential that the above instructions are followed.
- Failure to follow the above instructions may cause injury, instrument damage and/or damage to equipment under test.

3. General Specification

- Operation: AC-DC: 100A
- Over range indication: “OL” display when exceeding the measuring range. (except for AC/DCV and 100A Function)
- Sample rate: three times per second (AC/DCV)
- Resolution: 0.01V, 0.01Ω, 1μA, 0.01mS
- Temperature & humidity: -20°C ~ 50°C, 35%RH ~ 95%RH, relative humidity accuracy guaranteed ± 3% or less (at a condensation)
- Stray temperature: ±2°C, ±10% or less (at a condensation)
- Current consumption: approx. 25mA (DC Function), 20mA (AC Function)
- Sleep function: Automatically powered off in about 90 minutes after the instrument is off. The instrument will not respond to any key or command. Pressing any switch will reactivate the instrument.
- Outdoor use: Altitude up to 2000m
- EMC: EN 61326-1, EN 61326-2-3, EN 61010-1, EN 61010-2-030 EN 61010-2-035 EN 61010-1, EN 61010-2-035
- Safety: CE, UL 61010-1&2, CAT II 61010-2-033
- Overall Dimension: 270 x 105 x 40mm

4. Preparation for measurement

- 4.1. Checking Battery Voltage

- Set the Function Switch to any position other than “Off”. When the display is clear without “BATT” mark, showing battery voltage is enough. When the display is blank or “BATT” mark is indicated, replace the batteries according to Section 7. Battery Replacement.

5. Measurement

5.1. AC Current Measurement

- Set the Function Switch to “100A” or “10’000A” position. (KEW2005 only) The selected measuring range is indicated in the display. (KEW2005 only)
- Set the trigger of the test leads to “Battery” or “current” position.
- Connect the test leads from the instrument to the current to be measured.

5.2. DC Current Measurement (KEW2005 only)

- Set the Function Switch to “100A” or “10’000A” position. (KEW2005 only) The selected measuring range is indicated in the display. (KEW2005 only)
- Set the trigger of the test leads to “Battery” or “current” position.
- Connect the test leads from the instrument to the current to be measured.

6. Application Notes


7. Maintenance

- Periodically clean the instrument with a soft damp cloth. Do not use solvents or cleaners.
- Do not immerse the instrument in water.
- Do not apply any force to the display panel.
display.
(2) With the transformers closed and without clamping them onto the conductor, press the ZERO key to zero adjust the display. (mark is displayed at the upper right on the display.)
(3) Press the trigger to open the transformers and clamp them onto the conductor under test, the conductor should be at the center of the jaws, then take the reading on the display.
(4) Set the Function Switch to an appropriate position according to your test.
(5) Pressing the ZERO key again releases ZERO function, mark at the upper right on the display disappears.

**DANGER**

- When the current flows from the inside (the display side) to the outside of the instrument, the polarity of the reading is positive and vice versa.
- Keep your fingers and hands behind the barrier during measurement.

5.3 AC Voltage Measurement

- Never make measurement on a circuit in which voltage over DC50V exists to avoid getting electrical shock.
- Do not make measurement with the Battery Cover removed.
- Keep your fingers behind the barrier on the instrument during measurement.

(1) Set the Function Switch to "ACV" position.
(2) Connect the red test lead to V/O terminal and the black test lead to COM terminal.
(3) Connect the test leads to the circuit under test. Take a reading on the display. (Presuming the red lead of “Hi/DUTY”" key while reading on the display switches the indication in following sequence.

5.4 DC Voltage Measurement

- Never make measurement on a circuit in which voltage over DC50V exists to avoid getting electrical shock.
- Do not make measurement with the Battery Cover removed.
- Keep your fingers behind the barrier on the instrument during measurement.

(1) Set the Function Switch to "DCV" position.
(2) Connect the red test lead to V/O terminal and the black test lead to COM terminal. Confirm ‘OL’ is indicated on the display.
(3) Set the test leads to the both ends of the resistor under test.
(4) Take the reading on the display.

**CAUTION**

- Even if the short test lead test, indicated value may not be zero. But this is because of the resistance of test lead and not a failure.
- When test leads are open, ‘OL’ is indicated on the display.
- Keep your fingers and hands behind the barrier during measurement.

5.4.2 Cont/Cont Diode Measurement

- Never use the instrument on an energized circuit.
- Do not use measurement with the Battery Cover removed.

(1) Set the Function Switch to ‘OL’/Cont/Cont Dioda’ position.
(2) Connect the red test lead to V/O terminal and the black test lead to COM terminal. Confirm ‘OL’ is indicated on the display and short-circuit the tip of test leads. Indication should become zero and buzzer sounds.
(3) Connect the test leads to the both ends of the conductor under test. The buzzer sounds, if the resistance under test is 1000 or less.
(4) Set the Function Switch to ‘Diode’ position. ‘Q’ has been selected by default; press the SELECT key to change it to ‘Diode’
(5) Connect the red test lead to V/O terminal and the black test lead to COM terminal.
(6) Connect the red and black test leads to the Anode and Cathode of the diode under test respectively. Take the reading on the display. If the connection is reversed, the display indicates ‘OL’.

6. Other functions

6.1. Sleep Function

- This is a function to prevent the instrument from being left on power in order to conserve battery life.
- This function causes the instrument to enter Sleep mode about 15 minutes after the last key operation. To exit the Sleep mode, turn the Function Switch to ‘OFF’, then to any other position, or press any key.
- Sleep Function is disabled when MIN/MAX Function is selected. Continuous measurement is made with the Sleep Function being disabled. To activate Sleep Function again, disable the MIN/MAX Function.

6.2. HOLD Key

- This is a function to freeze the measured value on the display. Press the ‘HOLD’ key to freeze the reading.
- The reading will be held regardless of subsequent variation in input. ‘H’ is indicated on the upper left corner of the display while the instrument is in the Data Hold mode. To exit Data Hold mode, press the ‘HOLD’ key again.

6.3. NCV Function

Red LED on the upper area on the Panel lights up at all functions except for OFF when electric field exceeding 100V is detected by the sensor installed in the device.
- It indicates a presence of voltage in an electrical circuit or equipment without touching them.
- NCV Sensor can detect electrical field only from the direction indicated in the right figure.
- Put the fixed element (left side) closer to the conductor under test.
- Detection against in-wall outlet is impossible.

7. Battery Replacement

(1) Unscrew and remove the Battery Compartment Cover on the bottom of the instrument.
(3) Replace the batteries observing correct polarity. Use new R0 (AA44A) or LR03 1.59 batteries.
(4) Install the Battery Compartment and tighten the screws.

Replace the batteries when a Low Battery Voltage warning ‘MATT’ mark is indicated on the display. Note that when the battery is completely exhausted, the display blanks without ‘MATT’ mark shown.

(1) Set the Function Switch to ‘OFF’ position.
(2) Unscrew and remove the Battery Compartment Cover on the bottom of the instrument.
(3) Replace the batteries observing correct polarity. Use new R0 (AA44A) or LR03 1.59 batteries.
(4) Install the Battery Compartment and tighten the screws.

**CAUTION**

- Hold readings are released when Sleep Function is activated while the instrument is in the Data Hold mode.
- This is a function to freeze the measured value on the display. Press the ‘HOLD’ key to freeze the reading.
- The reading will be held regardless of subsequent variation in input. ‘H’ is indicated on the upper left corner of the display while the instrument is in the Data Hold mode. To exit Data Hold mode, press the ‘HOLD’ key again.

6. Backlight ON/OFF (KB2503 only)

Pressing the HOLD key 2 sec or more lights up the Backlight. Pressing the HOLD key 2 sec or more again turns off the Backlight.

6.3. NCV Function

Red LED on the upper area on the Panel lights up at all functions except for OFF when electric field exceeding 100V is detected by the sensor installed in the device.

- It indicates a presence of voltage in an electrical circuit or equipment without touching them.
- NCV Sensor can detect electrical field only from the direction indicated in the right figure.
- Put the fixed element (left side) closer to the conductor under test.
- Detection against in-wall outlet is impossible.