




KYORITSU KEW 8031 Phase Indicator Instruction Manual

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KYORITSU KEW 8031 Phase Indicator



Product Information

The product is the KEW 8031/KEW 8031F, which includes an alligator clip set in red, white, and blue, as well as a phase indicator. It has been designed and tested according to IEC Publication 61010 safety requirements for electronic measuring apparatus. The instrument is marked with various symbols, including the symbol for double or reinforced insulation and the symbol for a separate collection for electrical and electronic equipment.

Usage Instructions

Before using the instrument, it is important to read and understand all the safety warnings and instructions contained in the manual. The instrument should only be used for its intended applications, and failure to follow the instructions may cause injury or damage to the instrument or equipment under test.

When using the instrument, do not attempt to make any measurements if the instrument has any structural abnormalities such as a cracked case or exposed metal parts. First, connect the tester to the three-phase system and then press the push switch button. If the cables are accidentally disconnected, release your hand from the push switch button and stop the measurement. Additionally, do not touch the disconnected cables while the push switch button is being pressed down. If the outer jacket of the test lead is damaged and the inner metal or color jacket is exposed, stop using the test lead immediately. Do not install substitute parts or make any modifications to the instrument. Instead, return the instrument to Kyoritsu or your distributor for repair or re-calibration.

It is also important to note that even if all missing phase indicators are off, one phase may still be present. The instrument has different measurement categories (over-voltage categories) to ensure safe operation in various electrical environments. Higher-numbered categories correspond to electrical environments with a greater momentary energy.

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 starting using the instrument.

WARNING

- Read through and understand the instructions contained in this manual before starting to use the instrument.
- Save and keep the manual handy to enable quick reference whenever necessary.
- The instrument is to be used only in its intended applications.
- Understand and follow all the safety instructions contained in the manual. Failure to follow the instructions may cause injury, instrument damage and/or damage to equipment under test. Kyoritsu is by no means liable for any damage resulting from the instrument in contradiction to this cautionary note.

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.

The following symbols are used and marked on the instrument and in the instruction manual. Please carefully check before starting to use the instrument.

- Must refer to the Instruction Manual to protect humans and devices.
- An instrument with double or reinforced insulation.
- AC
- This instrument satisfies the marking requirement defined in the WEEE Directive (2002/96/EC). This symbol indicates separate collection for electrical and electronic equipment.

DANGER

- Never make measurements on a circuit in which the earth potential exceeds 600V to avoid electrical shocks.
- Do not make measurements when thunder is rumbling. If the instrument is in use, stop the measurement immediately and remove the instrument from the measured object.
- Put insulated protective gears when there is a danger of electrical shock hazard.
- Do not attempt to make measurements 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.
- Never attempt to use the instrument if its surface or your hand is wet.
- The instrument should be used only in its intended applications or conditions. Otherwise, safety functions equipped with the instrument do not work, and instrument damage or serious personal injury may be caused.

WARNING

- Never attempt to make any measurement, if the instrument has any structural abnormality such as a cracked case and exposed metal part.
- First, connect the Tester to the Three-phase system and then press the push switch button.
- If the cables are accidentally disconnected, release your hand from the push switch button and stop the measurement.

WARNING

- Don't touch the disconnected cables while the push switch button is being pressed down.
- Stop using the test lead if the outer jacket is damaged and the inner metal or color jacket is exposed.
- Do not install substitute parts or make any modifications to the instrument. Return the instrument to Kyoritsu or your distributor for repair or re-calibration.

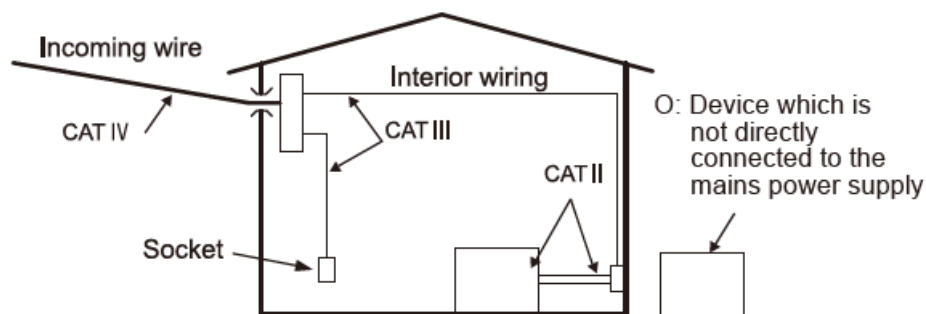
CAUTION

- Even if all missing phase indicators are off, one phase might be live: care should be taken to avoid getting an electric shock.
- Max continuous measurement time differs depending on voltages. Please refer to the continuous measurement time written in this document and measure each voltage within each limited time.
- Do not expose the instrument to the direct sun, extreme temperatures or dew fall.
- Use a damp cloth and detergent for cleaning the instrument. Do not use abrasives or solvents.
- This instrument isn't dust & waterproofed. Keep away from dust and water.
- Choose and use the test leads and caps that are suitable for the measurement category. When the instrument and the test lead are combined and used together, whichever lower category either of them belongs to will be applied.
- Keep your fingers and hands behind the protective finger guard during measurement.

Measurement categories(Over-voltage categories)

To ensure safe operation of measuring instruments, IEC 61010 establishes safety standards for various electrical environments, categorized as 0 to CAT IV, and called measurement categories. Higher-numbered categories correspond to electrical environments with a greater momentary energy. So a measuring instrument designed for CAT III environments can endure greater momentary energy than one designed for CAT II.

- **O(None, Other):** Circuits that 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 overcurrent protection device (distribution panel).



Features

• Two Functions in One Unit

KEW8031 and KEW8031F are designed to check phase sequence. Lamps provided on the unit will also tell you if a phase is open.

• Highly Reliable

Can check a wide range of 3-phase power sources from 110V to 600V. Sealed against dust, the unit ensures trouble-free performance.

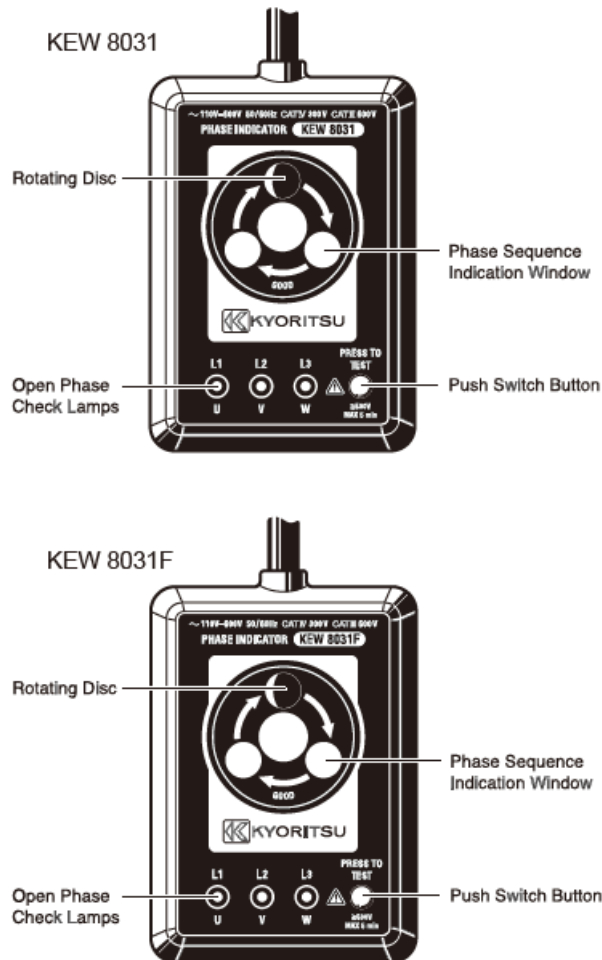
- **Functional Design**

Small, Lightweight and portable. Designed for maximum ease of operation and ruggedness.

- **Safety Design**

No exposed metal parts. Safety features are incorporated including the instant push button switch operation.

Instrument Layout



Specifications

- **Nominal system voltage U_n):** AC230V
- **Voltage ranges:** AC110V to 600V
- **Rated frequency:** 50Hz / 60Hz
- **Continuous operation time:**
 - Continuous up to AC280V
 - 40 minutes or less from AC281V to AC300V
 - 20 minutes or less from AC301V to AC400V
 - 10 minutes or less from AC401V to AC500V
 - 5 minutes or less from AC501V to AC600V
- **Safety Standards:** IEC 61010-1, IEC 61010-2-030
 - Measurement category CAT IV 300V, CAT III 600V

- Pollution degree 2
- IEC 61010-031
- IEC 61557-1, IEC61557-7
- **Standards:** IEC 61326-1 (EMC), IEC 60529 (IP30)
- **Environmental standards:** IEC 50581 (EU RoHS)
- **Location for use:** Altitude 2000m or less, Indoor use
- **Withstand Voltage:** AC6300V(rms) for 5seconds
- **Dimensions:** 106(L) x 75 (W) x 40 (D) mm (Body) 1.3m (Test lead)
- **Weight:** Approx. 350g
- **Fuse:** 0.5A / 600V (F) ϕ 6.3X32mm (only KEW8031F)
- **Accessories:** Instruction manual Carrying Case

Operating instructions

WARNING

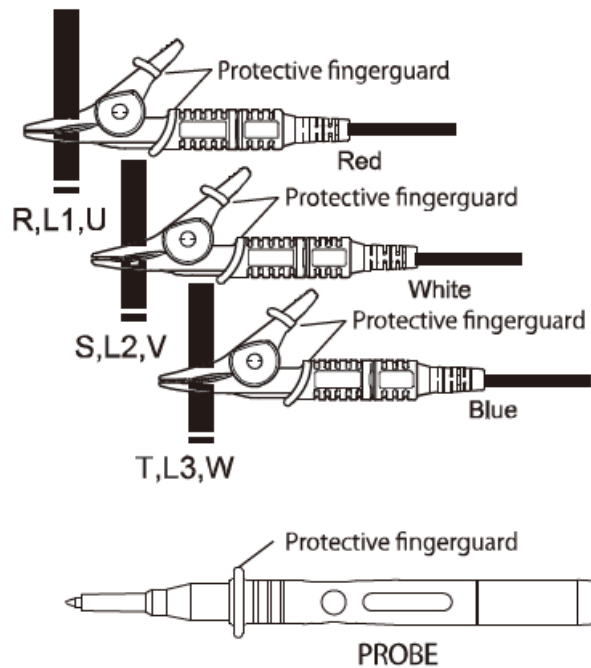
- First, connect the Tester to the Three-phase system and then press the push switch button.
- If the cables are accidentally disconnected, release your hand from the push switch button and stop the measurement.
- Don't touch the disconnected cables while the push switch button is being pressed down.

CAUTION

- Even if all missing phase indicators are off, one phase might be live: care should be taken to avoid getting an electric shock.
 - Max continuous measurement time differs depending on voltages. Please refer to the continuous measurement time written in this document and measure each voltage within each limited time.
1. Connect color-coded alligator clips or prods to the terminals of a 3-phase power source where a rotating electrical machine such as a motor will be connected or inputted to a building.
 2. Press the push switch button located on top of the unit. Keep this button pressed during the phase sequence or open phase check. When the push switch button is released it immediately goes off.
 3. Make sure that all three lamps for phase check are on. If so, there is no open phase. When any of the three lamps is Not on there is an open phase.
 - Open phase check → Open phase on terminal
 - Lamp "L1" is not on where the Red alligator clip is connected.
 - Open phase check → Open phase on terminal
 - Lamp "L2" is not on where the White alligator clip is connected.
 - Open phase check → Open phase on terminal
 - Lamp "L3" is not on where the Blue alligator clip is connected.
 4. Check the rotating direction of the inside disc through the phase sequence indication window.
 - When the rotating disc turns counter-clockwise alternate the connection of the two of the three alligator clips. Then, the rotating disc will turn clockwise.
 - When the rotating disc turns clockwise phase sequence is L1, L2, and L3 in order of the power source

terminals where the Red, White, and Blue alligator clips are connected.

Wiring diagram

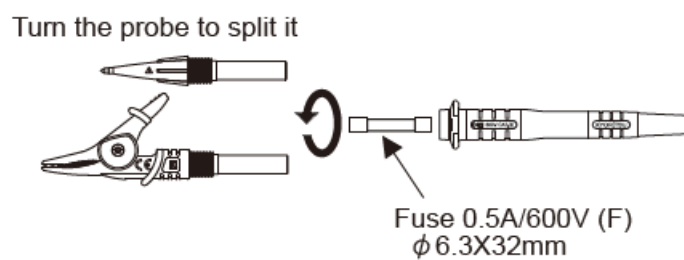


Protective finger guard:

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

- When the instrument and the test lead are combined and used together, whichever lower category either of them belongs to will be applied.

How to replace the fuse (KEW8031F)




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

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Documents / Resources

	<p>KYORITSU KEW 8031 Phase Indicator [pdf] Instruction Manual KEW 8031 Phase Indicator, KEW 8031, Phase Indicator, Indicator</p>
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