



PHASE INDICATOR

KEW 8031

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 starting 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.
 - 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.
- ☐ 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 measurement on a circuit in which the earth potential exceeds 600V to avoid electrical shocks.
 - Do not make measurement 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 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.
 - 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 cracked case and exposed metal part.
 - First, connect the Tester to 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 measurement.
 - 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 modification to the instrument. Return the instrument to Kyoritsu or your distributor for repair or re-calibration.

DISTRIBUTOR

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

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⚠ CAUTION

- Even if all missing phase indicators are off, one phase might be live: care should be taken to avoid getting electric shock.
- Max continuous measurement time differs depending on voltages. Please refer to 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 & water proofed. 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 fingerguard during measurement.

2. Features

- **Two Functions in One Unit**
KEW8031 is 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 source 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.

3. Specifications

Nominal system voltage (Un)	: 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
Standards	: 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
Accessories	: Instruction manual Carrying Case

4. Operating instructions

⚠ WARNING

- First, connect the Tester to 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 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 electric shock.
- Max continuous measurement time differs depending on voltages. Please refer to continuous measurement time written in this document and measure each voltage within each limited time.

- (1) Connect colour 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 input to a building.
- (2) Press the push switch button located on top of the unit. Keep this button pressed during phase sequence or open phase check. When the push switch button is released it immediately goes off.
- (3) Make sure that all of the 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 open phase.

- Open phase check → Open phase on terminal where Red alligator clip is connected.
Lamp "L1" is not on
- Open phase check → Open phase on terminal where Whight alligator clip is connected.
Lamp "L2" is not on
- Open phase check → Open phase on terminal where Blue alligator clip is connected.
Lamp "L3" is not on

- ※ When the open phase check lamps are not on the rotating disc does not turn.
- (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, Whight and Blue alligator clips are connected.

Wiring diagram

