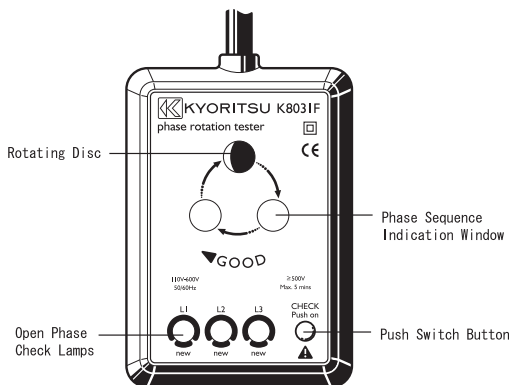


# INSTRUCTION MANUAL

## PHASE ROTATION TESTER

### K8031F

#### DESIGNATIONS






#### 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 instruction before 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.
- 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 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 instructions following each  Symbol in this manual.

 **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 property damage.

Following symbols are used on the instrument and in the instruction manual. Attention should be paid to each symbol to ensure your safety.

Refer to this instructions in the manual.

 This symbol is marked where the user must refer to the instruction manual so as not to cause personal injury or instrument damage.

 Indicates an instrument with double or reinforced insulation.

## **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.
  - a) Instrument shows visual damage.
  - b) Test leads are damaged.
  - c) Instrument can not be operated for intended measurements.
  - d) Instrument has been stored for a long period of time under abnormal conditions.
  - e) Instrument has been subjected to severe shocks and vibrations.
3. High voltage may be present with high energy levels.  
Connect the leads to the system carefully with fingers behind all finger guards.
4. If the all open phase lamps are not lit on, any phase may still be live-be carefull.

## **CAUTIONS**

1. Make sure to never apply a voltage more than 600V ACrms. between the test leads of the instrument and earth to avoid damage to the instrument.
2. Do not measure for more than five minutes when measuring on 500V AC or more, although the instrument is designed for the use 110V through 600V AC.

### Measurement categories (Over-voltage categories)

To ensure safe operation of measuring instruments, IEC61010 establishes safety standards for various electrical environments, categorized as CAT. I to CAT.IV, and called measurement categories. Higher-numbered categories correspond to electrical environments with greater energy, So a measuring

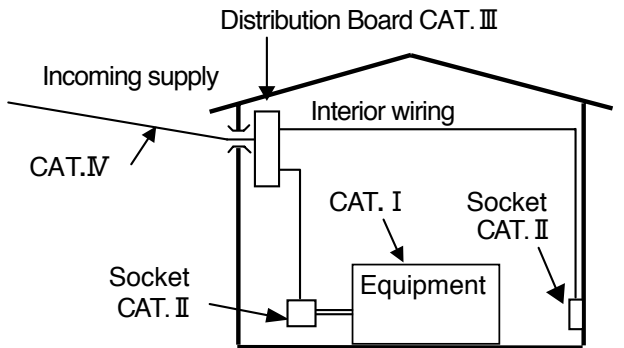
instrument designed for CAT. III environments gives greater protection than one designed for CAT. II .

**CAT. I :** Equipment connected to a mains outlet socket

**CAT. II :** Fault category level at a mains socket

**CAT. III :** Fault category at distribution board level

**CAT. IV :** The circuit from the service drop to the power meter and primary over-current protection device (distribution panel).



## FEATURES

### ● Two Functions in One Unit

K8031F 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.

## SPECIFICATIONS

Standard	: IEC 61010-1 CAT. III 600V Pollution degree 2
Voltage	: 110V to 600V
Frequency	: 50Hz / 60Hz
Withstand Voltage	: 5,550V AC for one minute
Time Limit for Continuous Use	: Within 5 minutes in case voltage is above 500V.
Dimensions	: 106 (L) x 75 (W) x 40 (D) mm
Weight	: Approx. 350g
Cord	: 1.2m each of Red (L1), Yellow (L2) and Blue (L3) cord
Fuse	: 0.5A / 600V (F)
Accessories	: Instruction Manual, Carrying Case

## OPERATING INSTRUCTIONS

- (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  
Lamp "L1" is not on where Red alligator clip  
is connected.

Open phase check → Open phase on terminal  
Lamp "L2" is not on where Yellow alligator clip  
is connected.

Open phase check → Open phase on terminal  
Lamp "L3" is not on where Blue alligator clip  
is connected.

\*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, Yellow and Blue alligator clips are connected.

**Please Note** : New European harmonized phase colours are as follows.

Red = Brown	Protective Earth = Green yellow
Yellow = Black	Neutral = Blue
Blue = Grey	