

Product Datasheet - Technical Specifications



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Sefram

SEFRAM 87

Non-Contact SAFETY PHASE ROTATION DETECTOR



INSTRUCTION MANUAL

M 9087 A00

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1. INTRODUCTION

This Non-Contact PHASE DETECTOR has been designed and tested According to CE Safety Requirements for Electronic Measuring Apparatus, IEC/EN 61010-1 and other safety standards.

Follow all warnings to ensure safe operation.



WARNING

READ "SAFETY NOTES" (NEXT PAGE) BEFORE USING THE NON-CONTACT DETECTOR.

- CAT IV – Measurements performed at the source of the low voltage installation.
- CAT III – Measurements performed in the building installation.
- CAT II – Measurement performed on circuits directly connected to the low voltage installation.

2. SAFETY NOTES

1. Read the following safety information carefully before attempting to operate or service the detector.
2. Use the detector only as specified in this manual. Otherwise, the protection provided by the detector may be impaired.
3. This instrument cannot find the missing line of earth line (S line).
4. Do not touch the clips during measurements to get accurate results.
5. Do not pull the cable when removing the measurement clips from the measured conductors. It may damage the cable.
6. Do not expose the instrument to direct sunlight, high temperature, humidity, or moisture.
7. Do not use the instrument while it is wet. Keep dry!
8. Never open battery compartment cover while live detecting.
9. Subjecting the detection to shock, vibration, and dropping.....may damage the instrument.
10. Rated environmental conditions:
 - (1) Indoor AC1000V Max. Outdoor AC 600V Max.
 - (2) Installation Category III.
 - (3) Pollution Degree 2.
 - (4) Altitude up to 2000 meters.

(5) Relative humidity 80% max.

(6) Ambient temperature 0~40°C.

11. Observe the International Electrical Symbols listed below:



Detector is protected throughout by double insulation or reinforced insulation.



Warning! Risk of electric shock.



Caution! Refer to this manual before using the detector.



AC.....Alternating current.

* The buttons of the phase rotation detector should only be activated by a finger, not a tool.

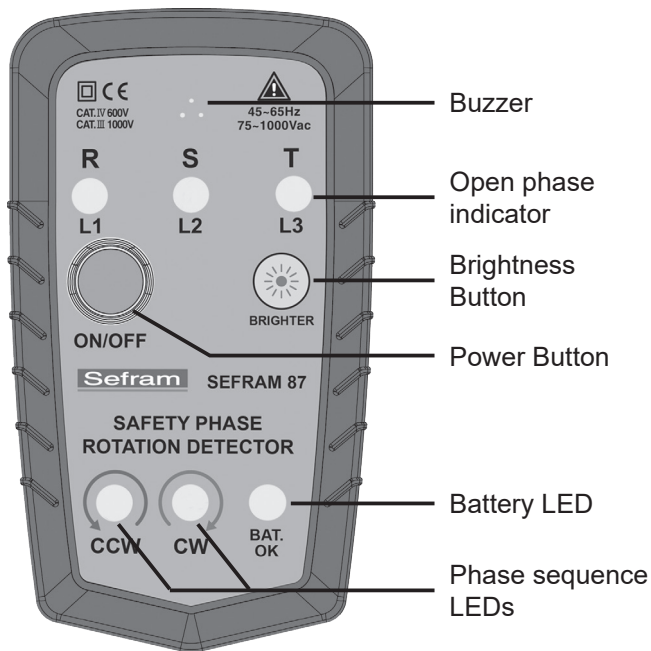
3. FEATURES

- The meter is a phase detector with LED display lights and beeping buzzer to inform the detection of AC 3-phase sequence.
- Two functions in one unit: open phase and phase sequence.
- Auto-off. (5 min Approx.)
- Clipping the right 3-phase lines (up to color) over the jacket with non-contact sensor clips which promotes safety during measurement.
- Bright button feature is convenient to make the indication visible in dimly areas or sun light.
- Back cover magnet feature mounts the instrument onto a AC distribution panel offer easy measurement.
- 3-Phase AC 75 to 1000V is fitted for detection.
- Detect frequency range is from 45 to 65 Hz.
- Safety standard:
EN 61010-1 CAT III 1000V / CAT IV 600V
EN 61326-1

4. SPECIFICATIONS

Measurement Principle	Static induction
Input Voltage	75~1000Vac
Frequency Range	45~65Hz
Auto-Off	5 min. after power on without detection
Low Battery Warning	Power LED flashes at $7V \pm 0.2$ or less
Current consumption	20mA
Operating Temperature & Humidity	0°C~40°C Max. 80% R.H.
Storage temperature & Humidity	-10°C~50°C Max. 80% R.H.
Power Source	9V(6LF22) x 1 Alkaline battery
Dimensions	128 (L) x 72 (W) x 44 (H)mm
Cable Length	Approx. 800mm
Weight	Approx. 380g (battery included)
Accessories	Instruction manual Soft pouch Battery

5. INSTRUMENT LAYOUT



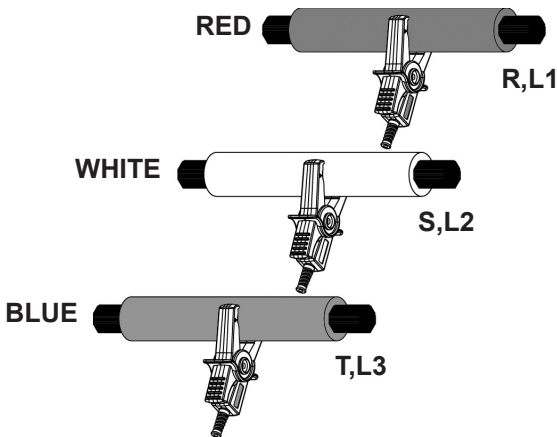


Magnets for mounting is equipped on the back of this product allow for hands-free use.

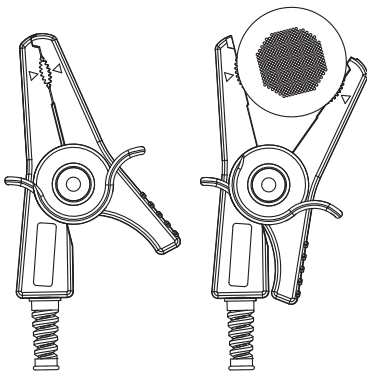
6. MEASUREMENT

Before proceeding with measurement, read the safety notes.

1. Press the power button to turn on the instrument.
All of the LEDs will flash during the 2 seconds.
Only the power LED stays on at the self demonstration later.
Do not use the instrument when any of the LEDs do not work.
2. Apex of "▼" mark on each measurement clip hold on the center of each measurement conductor.
Connect three clips as shown:
Red to L1, Phase-R. White to L2, Phase-S.
Blue to L3, Phase-T.



Lines connecting the apexes of "▼" marks should pass through the center of the conductor.



3. Measure a covered conductor AC75V or more first to confirm each live LED lights up.
4. Presence of live wires and phase sequence are informed by LED indication and buzzer beeping as soon as complete detection.
5. R, S, T LED always lights up while instrument is detecting the live phase.
6. CW LED ON = correct phase sequence but CCW = incorrect.
7. 30mm is the maximum diameter of tested cable.

7. LIVE WIRE CHECK

State	Indication
Live	Phase with R, S, T ON is live state
Missing line of Earth line	LED does not light up for missing line of earth line
Earth line (Delta connection)	Phase with flashing LED is an earth phase
Positive phase	When the Green CW LED ON, the circuit is forward under test. The buzzer sounds intermittently. (Bi-Bi-Bi)
Negative phase	When the Red CCW LED ON, the circuit is reverse under test. The buzzer sounds continuously. (BEE——)
Detect Indications	R, S, T LED ON is live phase indication. Open phase which LED is off.
	CW ON = correct phase sequence.
	CCW ON = incorrect phase sequence.

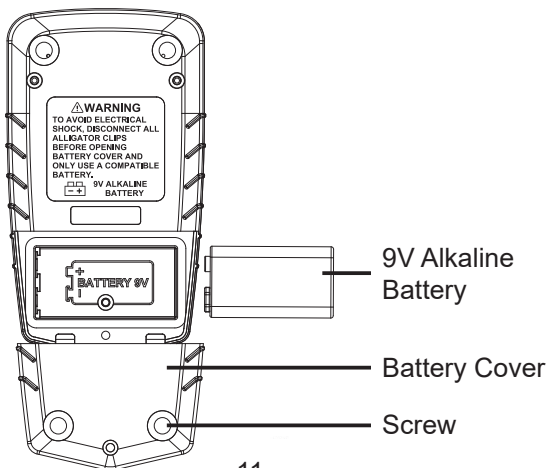
8. MAINTENANCE

- Battery replacement:

When low battery LED flashes, replace with new batteries.

Follow these steps for battery replacement:

- (1) Remove all the clips from the conductors and power off the instrument.
- (2) Loosen the screw that secures the battery compartment cover and open cover.
- (3) Replace the battery with a new 9.0V×1 alkaline battery. Ensure battery is inserted with the correct polarity.
- (4) Install the battery compartment cover and tighten the screw.



- Cleaning and storage
Periodically wipe the case deterged with a damp cloth; do not use abrasives or solvents.

 **WARNING**

After the instrument has been turned off, the standby current is below 25uA. If the meter is not to be used for periods of longer than 60 days, remove the batteries and store them separately.

Due to our policy of constant improvement and development, we reserve the right to change specifications without notice.