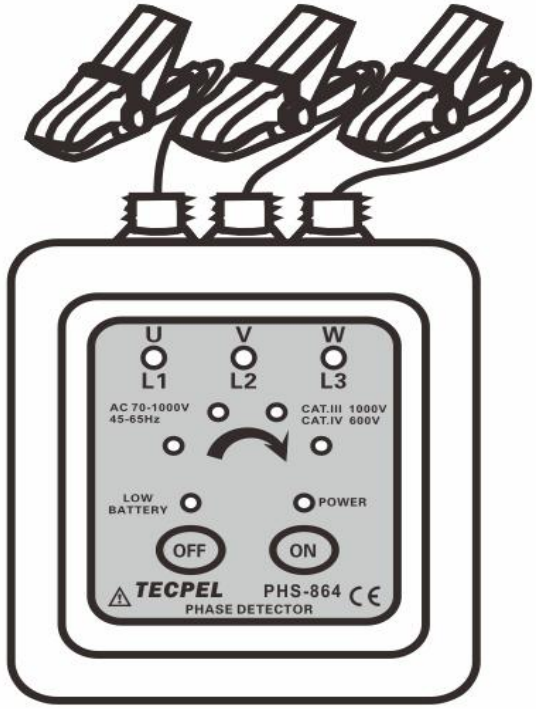
TECPEL®

No-Contact Phase Sequence Detector

PHS-864
PHS-864A



MANUAL

TECPEL CO., Ltd

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Precautions For Use

Thank you for purchasing **PHS-864/PHS-864A Non-contact Phase Sequence Indicator**.In order to better use of the product, please be certain:

---Read the instruction manual in detail.

---Comply with safety regulations and cautions listed in manual.

- In any case, should pay special attention to safety when using the tester.
- Pay attention to the text labeled on the panel and backplane of the tester.
- Should insure that the insulation layer of the instrument, lead wires, and clamps is not damaged, exposed, or disconnected before using.
- During testing, it is absolutely forbidden to touch the exposed tested wire conductor.
- Do not place and store the meter in high temperature&humidity or dewy places and under direct sunlight for a long time.
- If not use the indicator for a long time, please take out the battery.
- When replacing the battery, please pay attention to the polarity of the battery. It is strictly forbidden to replace the battery when the clamp clip is not removed from the tested wire conductor.
- Due to the reason of this instrument, if it is dangerous to continue using, should stopped and sealed immediately ,and handled by an authorized institution.
- The indicator with the danger mark "  ", users must follow instruction to operate safely.
- The indicator manual with the extremely dangerous mark "  ", users must in strict follow instructions to operate safely

1. Introduction

PHS-864/PHS-864A Non-contact Phase Sequence Indicator is a major break through in the traditional phase sequence detection method, in the traditional phase sequence deteicon, the 3-phase wiring terminal must be peeled off and connected the three exposed clips or test probe of the phase sequence meter to the three exposed live wires. However, **PHS-864/PHS-864A** adopt the clamp type non-contact induction measurement, no need to peel off the wires and no need contact the exposed high-voltage live wire, the phase sequence can be detected by directly clamping on the insulation outer skin of the 3-phase live wire with three super inductive high insulation clamps, and at the same time, audible and visual indicate the positive or reverse phase sequence of the 3-phase power. 4 pieces stong magnets are attached on the back of the meter, which can be hung on the distribution box for testing.

PHS-864/PHS-864A Non-contact Phase Sequence Indicator has the functions of live line detection, simple power electricity detection, break circuit searching, break point location, lines circuit maintenance and so on.

PHS-864/PHS-864A Non-contact Phase Sequence Indicator is fast testing and convenient, the display is clear and obvious, greatly improved the field test security, effectively protected the operator's personal safety and increased the productivity! It is a safety standard instrument for three-phase power supply phase sequence, motor detection and line maintenance.

2. Electrical Symbols

	Extremely dangerous! The operators must keep to the safety rules strictly, otherwise, electric shock will result in death or injury.
	Warning! The operators must keep to the safety rules strictly, otherwise, personal injury or equipment damage will occur.
	Double Insulation
	Alternate Current（AC）
	Direct Current（DC）

3. Model

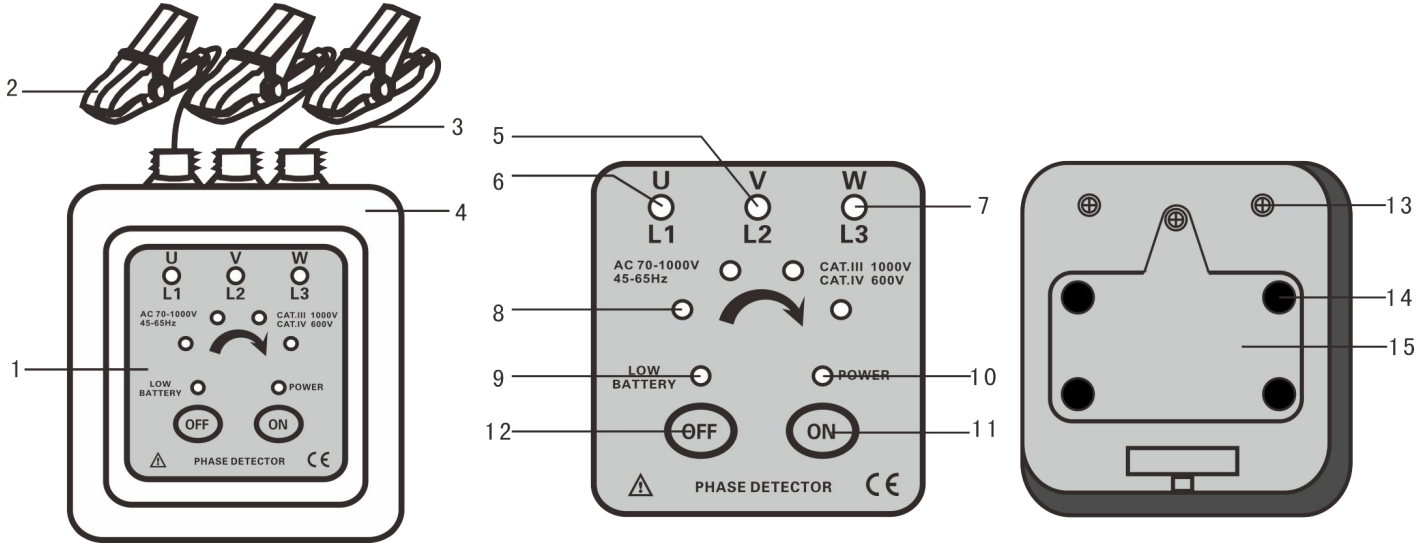
Model	Diameter Of The Clamped Wire Conductor
PHS-864	ø1.6mm~ø16mm
PHS-864A	ø10mm~ø40mm

4. Technical Specification

Function	Phase detection(positive phase,reverse phase, default phase), live line detection, simple power electricity detection, break point location, lines circuit maintenance
Power Supply	DC 3V AA alkaline batteries (LR6)×2PCS
Electricity Testing Range	AC 70~1000V, 45~65Hz(sine wave continuous input)
Available Clamp Wire Size	Diameter: ø1.6mm-ø16mm or ø10mm-ø40mm (optional)
LED Display	[**Positive phase**] The phase detector lamp lights up clockwise [**Reversed phase**] The phase detector lamp lights up counter clockwise [**Electricity Testing**] L1, L2, L3 lamps light up in setting voltage range [**Default phase**] L1 or L2, or L3 lamp is not lighting [**Open circuit**] L1 or L2, or L3 lamp is not lighting
Buzzer	[**Positive phase**] the buzzer sounds intermittently [**Reversed phase**] the buzzer sounds continuously
Battery Check	The **POWER** indication lamp light up after boot up; the **LOW BATTERY** lamp light up when low battery

Magnet	4pcs magnets are installed on the bottom plate of the meter, which can be hung on the distribution box, load weight 800g
Automatic Shutdown	5 minutes after power up, the meter automatic shutdown
Meter Dimension	70mm×75mm×30mm
Clamp Lead Length	0.6m
Meter Weight	200g
Working Temperature	-10℃~55℃；below 80%rh
Store Temperature	-20℃~60℃；below 90%rh
Max Measure Voltage	AC 1000V
Insulation Strength	5.4kV/rms
Max Rated Power	300mVA
Suitable Safety Standard	EN61010-1：2001,EN61010-031：2002,pollution grade 2,CATⅢ 1000V, Transient overvoltage 6000V

5. Instrument Structure



1. Operate indication panel
2. Test Clamps
3. Clamp Lead Wire
4. Meter body
5. L2 phase indicator lamp
6. L1 phase indicator lamp
7. L3 phase indicator lamp
8. Phase sequence indicator lamp (4 lamps)
9. Low battery voltage indication
10. Power Supply indicator
11. “ON” power up key
12. “OFF” power off key
13. Connecting screws
14. Magnet (4PCS)
15. Battery cover board

6. Operation Method

6.1.Phase sequence detection

⚠ Danger! High voltage! Please pay attention to safety!

6.1.1.Connection: Clamp on three phase wires respectively with the three clamps (Shown in Figure-1).

6.1.2.The detected wire should be clamped at the mark "▼" (Shown in Figure-2)

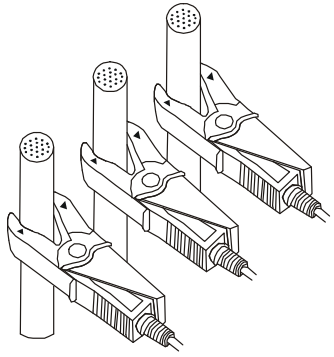


Figure-1

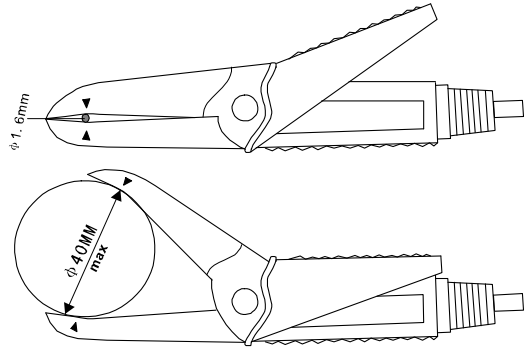


Figure-2

6.1.3.Press the red "**ON**" power key, the power indicator lamp lights up. If the power lamp not light up, it may battery in low power or inspect the indicator, please replace the battery or send to repairing as instruction in the manual.

6.1.4.After power up, if the four phase sequence indicators light up turn on clockwise, and the instrument make intermittent short chirps, then the clamped phase line is positive phase sequence L1-L2-L3 (U-V-W) (figure 3).If the four phase sequence indicator light up turn on in the counterclockwise, and the instrument make a continuous long sound, then the clamped phase line is in the reverse phase sequence L3-L2-L1. (W-V-U) (Figure 4).

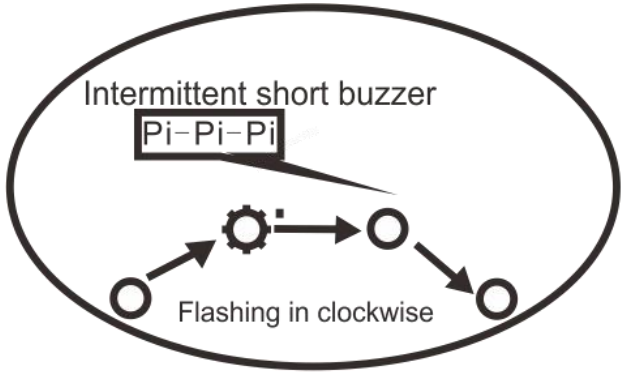


Figure3 Positive phase sequence

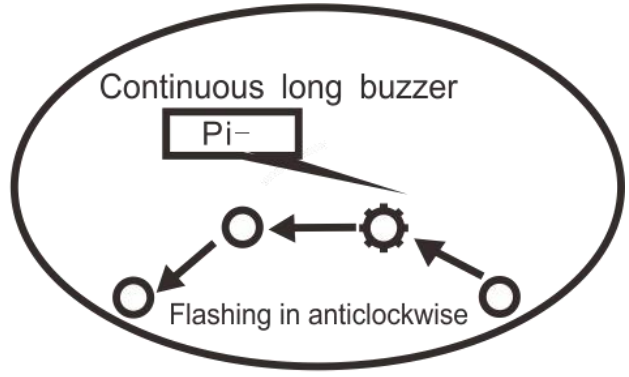


Figure4 Reverse phase sequence

6.1.5.Press white color “OFF” key to shut down, the instrument will automatically shut down after about 5 minutes without any operation to reduce battery consumption.

6.2.Live wire check, simple electricity detection

⚠ Danger! High voltage! Please pay attention to safety!

6.2.1.Use any clamps to clamp on the tested wire. If the conductor with electricity (within the setting range of live line voltage AC70~1000V), the lamp of L1/U, L2/V or L3/W light up, it can be detected whether the wire is live or not.

6.2.2.Clamps and lamps corresponding sheet:

Clamp Mark	Lamp light up symbol
L1/U (Yellow)	L1/U lamp light up
L2/V (Green)	L2/V lamp light up
L3/W (Red)	L3/W lamp light up

6.3.Default phase judgment, open circuit searching, breakpoints location

⚠ Danger! High voltage! Please pay attention to safety!

6.3.1.Use any clamps to clamp on the three-phase line separately. If it is default phase, the lamp L1, L2 or L3 will not light up.

6.3.2.Use any clamps to clamp on the tested wire which along the maintenance line. If the tested point`s lamp of L1, L2 or L3 not light up, then before this point is the open circuit location. Shorten the position of the measuring point of the clamp, can accurately find the open circuit position (location of the break point), very convenient and safe for line maintenance.

Note: This function is very suitable for maintaining the circuit fault of the line, safe and fast!

7. Battery Replacement

⚠ Pay attention to the battery polarity!

7.1.Before replacing the battery, the clamp must be removed from the tested wire. Do not replace the battery during the test.

7.2.Press “OFF” key to shut down. (Figure A)

7.3.Loosen the screw in the backside, and then remove the battery cover. (Figure B)

7.4.Replace the new batteries, pay attention to the battery polarity and specifications. (Figure C)

7.5.Close the battery back cover, and tighten the screw. (Figure D)

7.6.Press “ON” key and check whether the instrument can be started normally. If it cannot be started, please check whether the battery power is full or operate again according to step 3.

Figure A

Figure B

Figure C

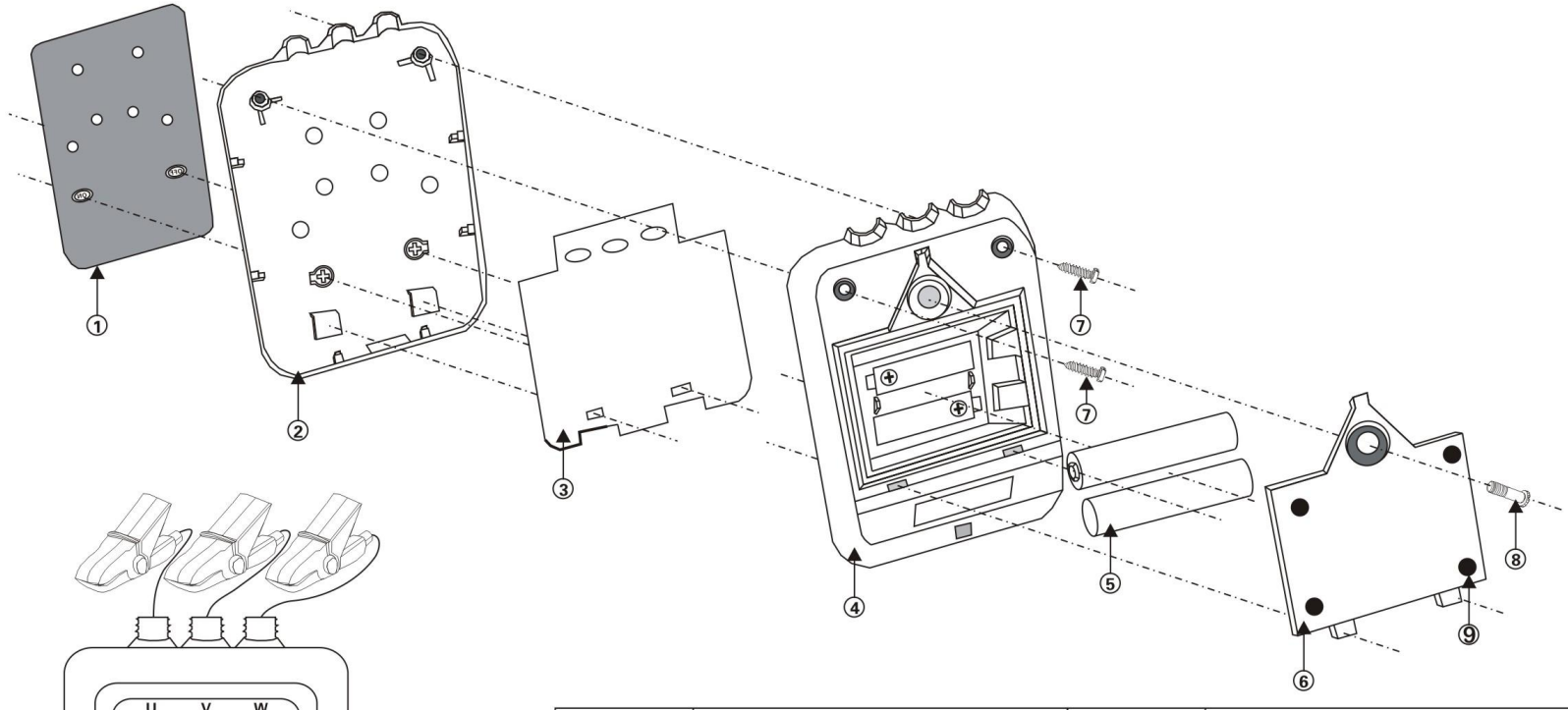
Figure D

8. FAQ

Fault Phenomenon	Possible Causes	Solution
Cannot power on (LED power indicator is not light up, without any display)	Without batteries	Install batteries
	Wrong battery type	Replace with right type
	Low battery power	Replace the new batteries
	Faulty battery polarity	Install batteries in correct polarity
	Poor contact of battery contacts	Replace the battery contacts
	Battery cover not completely covered	Cover it again
	Defect of circuit component	Repair or replace the PCB

LED dim display	Low battery power	Replace the new batteries
Start up normal, but can not detect	The three phase wires are not electrified	Not belong to instrument faults
	Failed to clamp the wire	Clamp again refer the manual
	Lead wire break	Change the lead wire
	Defect of circuit component	Repair or replace the PCB

9. Assembly Details



①	Sticker	⑤	Batteries
②	Up cover	⑥	Battery cover
③	PCB	⑦	Hosing Screw
④	Down cover	⑧	Battery cover screw
⑨	Magnet		

10. Accessories

Indicator	1 PCS
Carry Box	1 PCS
Tool Bag	1 PCS
Manual	1 PCS
Warranty Card / Qualification Certificate	1 copy

The company is not responsible for other losses caused by use.
The contents of this user manual cannot be used as a reason to use the product for special purposes.
The company reserves the right to modify the contents of the user manual. If there are any changes, no further notice will be given.

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