

PHASE DETECTOR



MANUAL

item	instruction
	Extremely dangerous! The operator must strictly abide by the safety rules, otherwise there is a risk of electric shock, causing personal injury or casualties.
	Warning! The operator must strictly abide by the safety rules, otherwise personal injury or equipment damage will be caused.
☐	Double insulation
	Alternative current (AC)
	Direct current (DC)

Function	Phase detection (positive phase, reverse phase and open phase), live line inspection, simple power detection, breakpoint positioning and line maintenance
Power	1.5V AA * 2 Alkaline Dry batteries (LR6), continuous use time about 70 hours
Application range	AC 60 ~ 1000V, 45 ~ 65Hz (Sine wave continuous input)
Workable OD	Outer diameter ϕ 1.5mm ~ ϕ 43mm
LED	<p>【positive phase】4 phase detection lamps turn on clockwise;</p> <p>【reverse phase】4 phase detection lamps in a counter clockwise direction;</p> <p>【live electricity】L1, L2 and L3 lights are on within the voltage setting range;</p>

Safety Instruction

- In any time, the user must be attention when using this instrument.
- The operator must fully understand the manual and be proficient in the operation of the instrument before the field test.
- Pay attention to the labels and symbols on the panel and back of the instrument
- Before use, please make sure the insulation layer of instrument, lead wire and clamp is not damaged, exposed or broken.
- During the test, it is absolutely forbidden to touch the exposed wire.
- Replace the battery, please pay attention to the polarity of the battery. It is strictly forbidden to replace the battery when the clamp is not moved away from the tested wire.
- Do not place or store the instrument for a long time in places with high temperature, humidity, condensation and direct sunlight.
- Replace the battery, pay attention to the polarity, if it cannot be replaced, please contact the manufacturer.
- Disassembly and maintenance of the instrument must be operated by authorized personnel and maintained regularly
- If the instrument and other parts are damaged, please do not use it.
- Due to the reason of this instrument, if it is dangerous to continue to use, it should be stopped immediately, sealed immediately and handled by an authorized organization

	<p>【Lost phase】L1 or L2 or L3 light is not on;</p> <p>【open circuit】L1 or L2 or L3 lights are not on</p>
Sound alarm	<p>【positive phase】the instrument gives out intermittent short sound;</p> <p>【reverse phase】the instrument gives out continuous long sound.</p>
Battery	After the power is turned on, the power indicator is on; the low battery indicator is on when the power is insufficient
Magnetic	There are four magnets attached on the back of the instrument, which are hung on the power distribution box, and can bear a maximum weight of 800g
Automatically power off	After 5 minutes without any operation since you turn on the meter, the meter will shut down automatically
Clamp wire Length	Approx 0.6m
Weight	Approx 300g (with battery)
Working Humidity	-10°C ~ 55°C; 80%rh below
Storage humidity	-20°C ~ 60°C; 90%rh below
Insulation strength	Between the clamp and housing > 500M Ω
Comply with safety standard	EN61010-1: 2001, EN61010-031: 2002, pollution class 2, CAT III 1000V, transient volt 6000V

IV. Structure

I. Profile

Non-contact Phase Detector is a major breakthrough in the traditional phase sequence detection method. In the traditional phase sequence detection, the terminal of the three-phase wire must be stripped, and the three bare clamps or test pins of the phase sequence meter must be connected to the three bare live wires. However, **Non-contact Phase Detector** adopts clamp type non-contact inductive measurement, which directly connects insulation skin of three-phase live wire without stripping the wire or contacting the high-voltage bare live wire. By the three super induction high insulation clamps, the phase sequence can be detected, and the positive phase or reverse phase state of three-phase power supply phase sequence can be indicated by sound and light. There are four powerful magnets on the back of the instrument, which can be hung on the distribution box.

At the same time, non-contact phase detector has the functions of live line inspection, simple power detection, open circuit search, breakpoint positioning, line maintenance, etc.

Non-contact Phase Detector is fast and convenient to detect, and the display is clear at a glance, which greatly improves the safety of on-site testing, effectively protects the personal safety of operators, and increases productivity! It is a safety instrument for three-phase power supply phase sequence, motor detection and line maintenance.



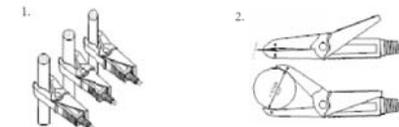
V. Operation



Danger! High voltage shock! Please pay special attention to safety when testing

1. Phase sequence test

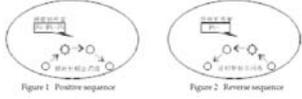
- (1). Test connection: clamp the pre-detected three-phase line arbitrarily with three clamps (see Figure 1).
- (2). The inspected wire is at the mark "▼" place. (see Figure 2)



(3). Press the red "ON" power on key, and the power indicator will be on. If the power indicator is not on, the battery may be out of power or you should check the instrument. Please replace the battery according to the manual or send it back to factory for repair.

(4) If the four phase sequence indicators turn on clockwise since you turn on the instrument and the instrument sounds intermittently, means it is positive phase sequence L1-L2-L3 (i.e. u-v-w) (Figure. 1); if

the four phase sequence indicators lights up anticlockwise since you turn on the instrument and the instrument sounds continuously, means it is reverse phase sequence I3-I2-I1 (i.e. w-v-u) (Figure. 2).



(5) Press "OFF" button to power off, the instrument will power off automatically in 5minutes without any operation for saving battery .

2. Live line test, simple electricity test.

(1). Connect the tested wire with any clamp. If the wire is electrified (AC60-1000V within the setting range of live wire voltage), L1/U, L2/V or L3 /W lights will be on to detect whether the wire is electrified

(2). Corresponding table of clamp and lights

Mark of Clamp	Symbol of Light
L1/U (Yellow)	On L1/U
L2/V (Green)	On L2/V
L3/W (Red)	On L3/W

3. Open phase judgment, open circuit search, break-point location

(1). Connect the three-phase line with any clamp. If it is open phase, L1, L2 or L3 lights will not be on.

(2). Use any clamp to connect the wire along the testing line. If the lamp of clamp measuring point L1, L2 or L3 is not on, the line is broken in front of the point. Shortening the location of clamp measuring point can accurately find out the broken line location (breakpoint location), which is very convenient and safe for line maintenance.

Note: this function is very suitable for the maintenance of

open circuit fault, safe and fast!

VI. Battery management

⚠ • When change new battery, please remove the clamp from the checked wire. Do not replace the battery during the test.

• **Warning!** Do not test if the battery cover is not covered properly, otherwise it is dangerous

• **Please notice the battery polarity before replacing the battery, otherwise the device may be damaged**

1. First confirm that the instrument is in the state of shutdown, loosen the screw of the receiver battery cover plate, open the battery cover and replace the new battery. Pay attention to battery polarity, install the cover plate of the battery and tighten the screws.

2. Press **POWER** key to see if it can power-on normally. If it cannot be use, please comply with step 1 to operate again.

3. If the user cannot replace the battery, please contact the manufacturer.

VII. FAQ

Failure	Possible reason	Solutions
Unable to start (LED power indicator is not on, no display)	No battery	Install qualified batteries
	Wrong battery type	Replace the battery meets its specification
	Battery Insufficient	Replace the new and qualified battery
	Battery reversed	Reassemble the battery according to the correct polarity
	Poor battery contact	Adjust the battery

	The back cover of battery is not closed well	Well closed the battery back cover
	The PCB damaged	Repair or replace the PCB
Dark LED display	The battery is low	Replace the new and qualified battery
Able to start normally, but cannot be detected	No electricity in the tested three-phase line	Check the circuit of testing wire
	The clamp does not clamp well the inspected	Clamp again according to the manual
	Clamp lead wire broken	Replace clamp lead
	The PCB damaged	Repair or replace the circuit board

VIII. Packing List

Host machine	1pcs
Packing box	1pcs
LR6 Alkaline dry cell	2pcs
Operation manual	1pcs

The company is not responsible for other losses caused by use. The contents of this user manual cannot be used as a reason for using the product for special purposes. The company reserves the right to modify the contents of the user manual. No further notice will be given in case of any modification.