

# Multi-function Detector

Model:KC-109D

User's Manual



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#### Overview

The KC-109D multi-function detector uses electronic signals to pass through the wall panel to detect the exact position of the metal, stud or AC live wire in the wall, it is equipped with electronic level and laser lining, laser ranging function. It is mainly suitable for the installation of indoor decoration wiring, electrical equipment (air conditioners, range hoods, etc.), as well as the detection of wood furniture and wood product structures.

#### Battery Safety Tips

- Remove the battery when cleaning this product.
- Please remove the battery when the product will not be used for a long time.
- Please install the battery correctly according to the positive and negative poles of the battery.
- Please dispose of used batteries properly: placing the batteries in a high temperature environment will cause an explosion hazard, please do not throw the batteries into fire. Wrap the battery terminals with insulating tape to prevent them from coming into direct contact with other objects. Many countries have regulations on battery disposal. Please follow the relevant local regulations.

#### TOOL COMPONENTS



- A: Status indicator LED light  
B: Color pen segment display  
C: Function button  
D: Detect button  
E: Laser punched light exit hole

## Illustration of display

### screen

A: There are three modes under the detection function

B: Detection signal indicator bar

C: Data display column 1

D: Laser ranging symbol

E: Data display bar 2

F: Laser ranging with different functional modes

G: Countdown sign

H: power indicator



## Instructions

1. Press and hold the power button to turn on the machine, turn on the machine with a beep and enter the detection mode;

2. Use the MODE button to switch freely between the detection mode, laser distance and the laser line mode;

3. In the detection mode, use the up and down buttons to perform metal detection, AC wire detection, stud detection, and switch between three detection modes;

In the laser line mode, the laser line time can be selected by pressing the up key: 10min, 30min, 60min; the down key can switch the line mode: horizontal line/vertical line/horizontal line+vertical line/off; Short press the power button to Switch the display angle mode: horizontal mode(H), vertical mode(U); the machine does not shut down during the threading process, until it automatically shuts down after the threading is completed, and can be manually shut down in the middle;

In the laser distance mode, the up and down buttons can be used to switch the measurement methods: length, area, volume, triangulation, double triangulation, triangulation half height;

### **4. In laser wiring mode, calibration instructions for electronic level:**

a) In the laser line mode, if the machine Angle is found to have obvious problems, or the need for accurate measurement, need to calibrate the machine;

b) Long press the MODE key until the machine makes two beeps and the horizontal and vertical mode of the display becomes the number 1;

c) Place the machine on the horizontal surface, wait until the machine Angle display is stable, press the down button, wait until the machine Angle display is 0 ( $\pm 0.5$ ), then the horizontal and vertical mode of the machine changes from the number 1 to 2;

d) Place the machine vertically on the horizontal surface, wait until the machine Angle display is stable, press the down button, wait until the machine's horizontal and vertical mode changes from number 2 to H/U, and the calibration is finished;

### **5. Instructions for use of detection:**

a) No matter which detection mode you are in, press and hold the side detection button on the side of the object to be calibrated. When you hear a beep, it means that the calibration is complete, and the target detection can be performed;

b) In the stud detection mode, if the user finds that the signal bar on the left/right lights up during the movement detection process, it means he is approaching the target, and the target and the signal bar are in the same direction, and continue to move in that direction. It can reach the top of the center of the target, at this time all the signal indicator bars are on, the led light is red and the buzzer sounds;

c) In AC and Metal mode, when the user approaches the target, the signal bar lights up and slowly increases, when the machine beeps once and the signal bar all lights up, it means the machine is moving away from the target, and the user needs to return slowly Detect, and finally reach the top of the target, at this time all the signal indicators are on, the LED light is red and the buzzer sounds;

### **6. Laser distance measuring instructions:**

a) Press the side measurement key, turn on the laser, aim at the measurement point, and press the measurement key again to start the measurement. After the measurement is finished, the measurement data will be displayed in data bar 1; In the composite measurement mode, the final measurement result will be displayed in data bar 2 (calculation result);

b) Long press the button to switch laser ranging datum (front datum/back datum)

c) Long press the button to switch the length unit

d) Long press the side measurement button to enter the automatic continuous measurement mode, and long press again to exit the mode (Continuous measurement mode can only be opened in length measurement mode).

7. If you need to shut down, you can press and hold the power button for about 2 seconds to shut down.

## **Operation Tips**

1. Please check the battery before use: when the battery power is low, the power symbol on the display is empty, indicating that the battery should be replaced with a new one.
2. In order to ensure that the detector is in the best state during detection, you should hold the tail of the instrument during operation, and please keep your other hand away from the detector at least 6 inches during detection.
3. The equipment must be handled with care. When measuring, the detection board should be close to the surface of the object to be measured, and should not be skewed or separated from the surface to be measured.
4. AC live wires in metal pipes or metal-clad wires, metal walls or high-density walls cannot be measured.
5. When ferromagnetic metal and non-ferromagnetic metal coexist in the wall and the distance is relatively close, it will affect the detection and identification of metal functions.
6. Please do not use it near strong electric waves or in places with high frequency interference.
7. Please do not use this detector in places with high temperature and humidity.
8. Please try to avoid using the instrument on the wall with damp moisture.
9. Sometimes the detector cannot detect the slate or mixed plate correctly because its material density varies greatly.
10. When nailing, cutting, or drilling holes in walls, ceilings, or floors, be careful with wires and pipes behind them.
11. Outsourced lines, unused lines, telephone lines, cable TV lines and uncharged lines will not be detected as live lines.
12. It is not suitable for metal detection when the measured wall is a metal wall or the metal material in the wall is too densely distributed.
13. Remember to turn off the power supply when constructing next to the AC live line.

### **Caution:**

**This device complies with Part 15 of the FCC. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

**Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

**This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference**

will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### C a u t i o n s

- Do not tear off any labels on the instrument
- Do not drop and use rough
- Do not disassemble or install the machine (to avoid causing malfunction)
- Do not place with corrosive gases or other corrosive substances
- Do not use in rain and water droplets
- Do not expose this product to vibrations or high and low temperatures
- This product needs to be kept indoors
- Do not immerse the machine in water to avoid damage to the product
- Please remove the battery when the product is not used for a long time

## Technical Specifications

Name		Intelligent in-wall detector
Model		KC-109D
Measurement objects		Stud, AC, METAL
Maximum detection capability	Ferromagnetic metal tube	Approximately 100mm from the wall
	Non-ferromagnetic metal tube	Approximately 80mm from the wall
	Joist	Approximately 40mm from the wall
	AC wire	Approximately 50mm from the wall
Electronic horizontal angle range		0~90°
Leaser distance measurement range		0.05~30m
Leaser distance measurement accuracy		± 2mm
Laser line		Two laser lines that are perpendicular to each other
Time when the backlight enters power saving mode		Operation without key is about 30 seconds
Auto shutdown time		After about 2minutes without key operation

Emission frequency	METAL	5KHz±1KHz
	STUD	1MHz±0.3MHz
Power supply		AAA*3(Alkaline battery)
Status indication		LED three color indication
Working current		<50mA
Working temperature		0°C~40°C
Working environment humidity		0% ~ 70%
Storage environment		-20°C~+60°C, ≤85%RH (w/o battery)
Dimension		198mm×81mm×60mm
Weight		About 270 g (w/o battery)

### Tips

- Thank you for purchasing our products.
- This instrument is not a universal instrument that can detect any material in the wall, I hope users can understand it.
- Please read this manual carefully before operating it correctly.
- Please keep it properly after use.

## WARRANTY

The product is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase.

### Notice:

#### The warranty does not apply to the following conditions:

- Disassembling the laser tool will void the warranty.
- We are not responsible for any damage resulting from abrasion, water, dropping or disassembling.

**Tip:** Most of the components of this product can be recycled. If you do dispose of this product, do so according to local laws rather than throwing it in the bin.