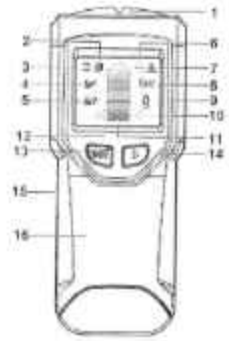
Stud Center Finder, Metal and AC Live Wire Detector (TH410)

The stud finder is a precise device according to the change of density behind the wall. The wrong operation will lead to wrong results. If you don't know how to use the device or get the wrong results etc,
please contact us: **aftersale223@outlook.com**
we will send you more use methods or videos and try our best to help you solve the problem.



1. The Marking Point
2. Stud Mode Indicator
3. Metal Mode Indicator
4. Stud 1in. Scan
5. Stud½in. Scan
6. AC Mode Indicator
7. AC Wire Warning
8. Stud1½in. Scan
9. Low Battery Indication
10. Moving Direction Indicator
11. Stud Center Indicator
12. Stud Edge Indicator
13. Power Button
14. Mode Switch Button
15. Calibrate Button
16. Battery(Backofunit)

Feautre (5 scanning modes):

- ½ in. Stud scan: Locates the center and edges of wood and metal studs up to ½ in. (13 mm) deep.
- 1 in. Stud scan : Locates the center and edges of wood and metal studs up to 1 in. (25 mm) deep.
- 1½ in. Stud scan: Locates the center and edges of wood and metal studs up to 1½ in. (38 mm) deep.
- Metal scan: Detects metal (such as 0.5 in. rebar) up to 2.36 in. (60 mm) deep.
- AC scan: Detects live unshielded AC wires up to 2 in. (51 mm) deep.

Operating Steps:

1. INSTALLING THE BATTERY

Push in the battery door tab at the bottom of the tool and open the door. Insert a new 9-volt battery. Snap the battery into place and close the door. Low Battery Indicator: When the low battery indicator icon appears on the screen, the battery level is too low and not sufficient to power the tool for proper operation. Please replace the 9-volt battery with a brand new battery immediately.

2. CHOOSE SCAN MODE AND CALIBRATE

Step 1: Press ON/OFF button to turn it on. the LCD always displays in Stud ½ in. scan mode.
Step 2: Press "▶" button to select the different mode.
Step 3: Calibrate the device.
Press the Calibrate button to start calibration, the decreasing bars will disappear and the buzzer will beep one time and the calibration is completed.

⚠ Note:

- If in AC scan mode/Metal scan mode mode, you need to put the tool in the air to calibrate it. please do not calibrate the tool on the wall or it may not detect wire.

• If in the wood scan mode, you need to place the tool against the wall to calibrate it.
• It is important to wait for calibration to complete (2–3 seconds) every time before movin the scanner. or it will cause the inaccurate results.
• After finishing calibration, you do not need to press the Calibrate Button while scanning

Step 4: Start Scanning
After calibration is completed, move the tool along the wall slowly, please keep the tool in the same direction. If change the direction or shake or lift the scanner accidentally, the device needs to be re-calibrated.

The following tips will provide more accurate scanning results:
• Grasp the handle with your thumb on one side and your fingers on the other side. Make sure your fingertips are resting on the handle and not touching the surface being scanned or the scanning head of the tool.
• Hold the tool straight up and down, parallel to the studs, and do not rotate the tool.
• Keep the tool flat against the wall and do not rock, tilt, or press hard when slowly sliding across the surface being scanned.
• Avoid placing your other hand, or any other part of your body, on the surface being scanned. This will interfere with the tool's performance.

3. SCANNING DIFFERENT SURFACES

Wallpaper: TH410 functions normally on walls covered with wallpaper or fabric, unless the materials are metallic foil, contain metallic fibers, or are still wet after application. Wallpaper may need to dry for several weeks after application.
• ***Freshly painted walls:*** May take one week or longer to dry after application.
• ***Lath & plaster:*** Due to irregularities in plaster thickness, it is difficult for the TH410 to locate studs in stud modes. Change to Metal Scan mode to locate the nail heads holding wood lath to the studs. If the plaster has metal mesh reinforcement, TH410 may be unable to detect through that material.
• ***Extremely textured walls or acoustic ceilings:*** When scanning a ceiling or wall with an uneven surface, place thin cardboard on the surface to be scanned and scan over the cardboard in Deep mode. If irregular scanning results are received, switch to Metal Scan mode to locate nails or drywall screws that line up vertically where a stud or joist is positioned.
• ***Wood flooring, subflooring, or gypsum drywall over plywood sheathing:*** Use Deep mode and move the tool slowly. The Signal Strength Indicator may only display 1 or 2 bars when the tool locates a stud through thick surfaces.
• TH410 can not scan for wood studs and joists through concrete or carpet and padding. In problematic situations, try using Metal Scan to locate nails or screws that may line up vertically where a stud or joist is positioned.

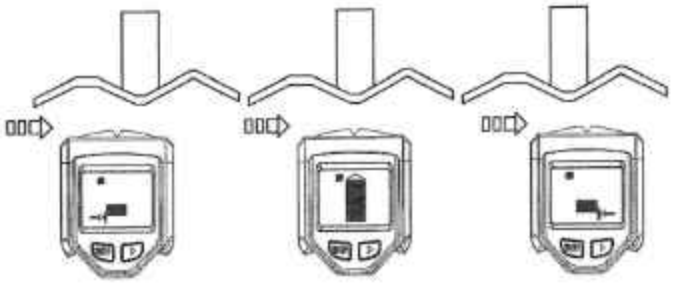
⚠ **Note:** Sensing depth and accuracy can vary due to moisture, the content of materials, wall texture, and paint.

WARNING: Do not rely exclusively on the detector to locate items behind the scanned surface. Use other information sources to help locate items before penetrating the surface. Such additional sources include construction plans, visible points of entry of pipes, and wiring into walls, such as in a basement, and in standard 16 and 24 in. (41 and 61 cm) stud spacing practices.

4. FINDING A STUD

Always on Stud ½ in. scan with the scanner placed flat against the wall. Press the mode switch button to the mode selected, place the tool flat against the wall, then press and hold the Calibrate Button. Wait for the reducing bars to disappear and beep to confirm calibration has completed before moving the scanner. Slowly slide the tool across the surface. A bottom pointed arrow and the EDGE indication will illuminate, indicating the location of the stud edge. Continue sliding tool. When the center of a stud is located, the full bars on the Signal Strength Indicator, the pointed arrow on the top of the bars, the CENTER

indication will all show and the buzzer will sound. While locating the center, please do not judge it to be a stud, mark it. Then turn to the metal scan mode and calibrate it, place it in the another location and move slowly towards the center place(The previous mark) to check if the center is metal or not. At last turn to AC scan to check if there is voltage around the center to avoid electric shock.



⚠ **Note:** In cases of deeper studs (thicker walls), when the center of the stud is located, not full bars will show on the screen. If you still cannot locate a stud, try Stud 1 in. Or Stud 1⁄2 in. Scan mode.

5. AC WIRE WARNING

AC WIRE WARNING detection feature works continuously in Stud scan, Deep scan, and Metal scan modes. When live AC voltage is detected, the AC detection warning indicator icon will appear in the display. Use extreme caution under these circumstances or whenever live AC wiring is present.

WARNING

Electrical field locators may not detect live AC wires if wires are more than 2 in. (51 mm) from the scanned surface, in concrete, encased in conduit, present behind a plywood shear wall or metallic wall covering, or if moisture is present in the environment or scanned surface.

Please turn to the next page for more instructions

WARNING

DO NOT ASSUME THERE ARE NO LIVE ELECTRICAL WIRES IN THE WALL. D NOT TAKE ACTIONS THAT COULD BE DANGEROUS IF THE WALL CONTAINS LIVE ELECTRICAL WIRE. ALWAYS TURN OFF THE ELECTRICAL POWER, GAS AND WATER SUPPLIES BEFORE PENETRATING A SURFACE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY OR PROPERTY DAMAGE. Always turn off power when working near electrical wires.

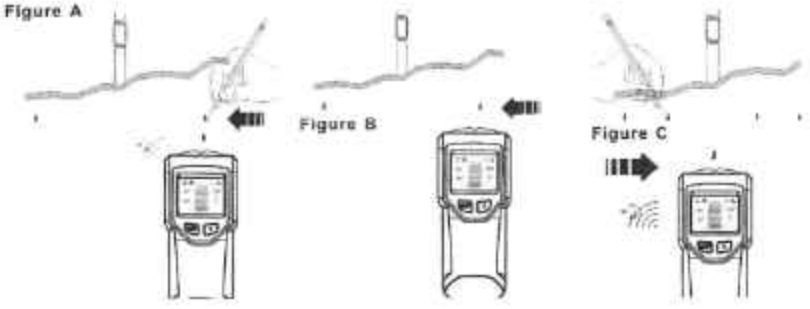
6. SCANNING IN METAL MODE

⚠ **Note:** When scanning for studs, use Stud ½ in. Scan mode (or Stud 1 in., Stud 1½ in. scan mode on thicker walls) to quickly locate the center and edges. Use Metal Scan to determine if the previous reading in Stud scan was a wood stud, metal stud, or pipe. In Metal Scan, only metal drywall screws will be found in wood studs, while metal will be indicated everywhere on a metal stud or pipe.

Metal Scan has interactive calibration to adjust to its sensitivity to metal, which car be used to find the precise location of metal objects in walls, floors, and ceilings. Maximum sensitivity is ideal for quickly finding the approximate location of metal. However, sensitivity can be reduced by calibrating the tool closer to metal. With reduced sensitivity, the area where metal is indicated will be smaller. But in both cases, the metal target is in the center of the area where the tool indicates metal is present.

Step 1: Press the mode switch button to Metal Scan mode. For maximum metal sensitivity, turn the tool on in the air by pressing and holding the Calibrate Button. This will ensure that it calibrates away from any metal objects.
Step 2: (Figure A) After finished calibration, place the tool against the walland slowly slide the scanner across the surface. Mark the point where you get the highest metal indication (the most Middle bars on the screen). If it is a strong targe the top indicated arrow will show, and a steady beep will sound. Continue in the same direction until display bars reduce. Reverse direction and mark the spot where the display bars peak from the reversed direction. The midpoint of the two marks is the location of the center of the metal object.
Step 3: (Figure B) To further pinpoint the location of the metal target, scan the are again. Release the Calibrate Button and then turn the unit back on, this time starting on the wall over one of the previous marks. This will reset the tool to lowe sensitivity and narrow the scan area.
Step 4: (Figure C) To continue to reduce sensitivity and further refine the scanning area, repeat step 3. This procedure can be repeated multiple times to narrow the field even further. Note: If any bars display on the screen, metal is present. Small targets or targets deep within the surface may only illuminate some of the bars an not the center line or audio tone. In this case, use the highest indication to deter-mine the metal position.

⚠ **Note:** If any bars display on the screen, metal is present. Small targets or targets deep within the surface may only illuminate some of the bars and not the center line or audio tone. In this case, use the highest indication to determine the metal position.



7. SCANNING IN METAL MODE

As with Metal Scan Mode, AC Scan Mode has interactive calibration and works in the same manner.
Step 1: (Figure A) Press the mode switch button to AC Scan mode. Put the tool in the air, then press and hold the Calibrate Button. Wait for the beep to confirm calibration has completed. Place the tool against the wall, slowly slide the scanner across the surface. Mark the location where you get the highest AC indication (the most Middle bars on the screen). If it is a strong target, the top indicated arrow will show, and a steady beep will sound. Continue in the same direction until display bars reduce. Reverse direction and mark the spot where the display bars peak from the reversed direction. The midpoint of the two marks is the location of the center of the live AC wiring. If the unit indicates live electricity over a large area, you can reduce the sensitivity of the tool to refine the scanning area and more accurately locate the live AC wiring by following steps 2 and 3 below.
Step 2: (Figure B) To further pinpoint the location of the live AC wiring, scan the area again. Release the Scan button and then turn the unit back on, this time starting on the wall over one of the previous marks. This will reset the tool to lower sensitivity and narrow the scan area.
Step 3: (Figure C) Scan in both directions as in Step 2. The area indicated should become smaller so you can more precisely identify the location of live AC wires.

Note: AC Scan will only detect live (hot) unshielded AC wiring. Please refer to the WARNING statement in number 5, AC WIRE WARNING, for more important details and warnings about AC detection.

8. HELPFUL HINTS (Also see OPERATING STEPS and SCANNING DIFFERENT SURFACES)

Situation	Problem	How to resolve
Cannot find the known studs False readings / erratic scanning results Inacurate or incoinsitent	1. choose the wrong scan mode. Such as choose ½ in. Stud scan to detect the 1-inch thickness wall, it will not find studs or results in false readings. 2. The thickness of the wall exceeds the deepest distance that the detector can detect by 1½ in. (38mm), which will cause the tool to fail to detect the stud or be inaccurate. 3. Some wall materials may not be detected (such as cement, brick wall, ceramic tile, carpet, etc.) if you scan these wall materials, it will lead to inaccurate/ inconsistent/false reading/ can not find studs 4. New house/ Freshly painted walls, it will have humidity, moisture within the wall cavity, while the moisture may not always be visible, but it will interfere with the tool's sensors. 5. The wrong operation: (1) After finishing calibration, keep pressing the scan button while scanning (2) The hand was held on the head area of the tool; (3) Rock, tilt, or press hard when sliding across the surface; (4) Change the direction while scanning and didn't re-calibration;	1. If you don't know how the thickness of the wall, please try Stud 1 in. Or Stud 1½ in. Scan mode one by one. 2. If the thickness of the wall exceeds 1½ in. (38mm), our stud finder can not locate it. 3. All the stud finder in the world can not accurately scan through cement, brick wall, ceramic tile, carpet. Although we have had customer reports of occasions where it does work through these wall materials, we can not guarantee its accuracy if works on these wall materials. 4. If works on new house/freshly painted walls, please allow a few days for the wall to dry out. **5. Correct operation** (1) After finishing calibration, you do not need to press the Calibrate Button while scanning. (2) Please hold the bottom area of the tool and make sure your fingertips are resting on the handle and not touching the surface being scanned or the scanning head of the tool; (3) Keep tool flat against the wall and do not rock, tilt, or press hard when slowly sliding across the surface being scanned. (4) Keep the same posture while calibrating and scanning, do not rotate the tool;
Can not open the device or LCD screenshot keep flashing; giving a strange readings	A dead battery or the low battery	Please replace a fresh, brand new 9V alkaline battery with an extended expiration date. Do not use the batteries that may work in a smoke detector or remote control that may not have adequate voltage to power the sensing technology in the stud finder.
Detects AC current everywhere; keep beeping	The strength of the voltage will affect the test results of the product.	(1) Check if your house nearby the power station. (2) Please turn off all the power device, and then re-scan it to check if it still detects AC current everywhere, if yes, that may be due to the wrong operation or the reason for the wall materials.
You suspect electrical wires, but do not detect any.	• Wires are shielded by metal conduit, a braided wire layer, metallic wall covering, plywood shear wall, or other dense material. • Wires deeper than 2 in. (51 mm) from surface might not be detected. • Wires may not be live.	• Try Metal Scan mode to see if you can find metal, wire, or metal conduit. • Use extra caution if the area has plywood, thick wood backing behind drywall, or thicker than normal walls. • If a switch controls an outlet, make sure it is ON for detection, but turned off when working near electrical wires. Use CAUTION when nailing, sawing, or drilling into walls, floors, and ceilings where these items may exist
Constant readings of studs near windows and doors.	Double and triple studs are usually found around doors and windows. Solid	Detect outer edges so you know where to begin.
The image of the metal object appears wider than the actual size.	Metal has greater density than wood.	• To reduce sensitivity, calibrate TH410 over either of the first two marks. • Use interactive calibration to narrow the field even further.
Detects other objects besides studs in StudScan mode. Finds more targets than there should be.	Electrical wiring and metal/plastic pipes may be near or touching the back surface of the wall.	• Scan the area in Metal Scan and AC Scan to determine if metal or hot AC is present. • Check for other studs equally spaced to either side 12, 16, or 24 in. (31, 41, or 61 cm) apart or for the same stud at several places directly above or below the first scan area. •A stud reading would measure approximately 1½ in. (38 mm) apart from each edge; anything larger or smaller is most likely not a stud if not near a door or window.