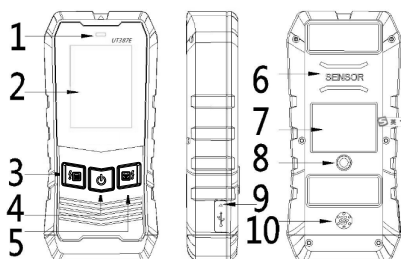**TRIPLETT**

WS230
Wall Scanner

Thank you for purchasing the TriplettWS230 wall scanner. In order to use this product safely and correctly, please read this manual thoroughly and follow the instructions strictly. Please keep the user manual properly.

This product can detect metals (rebars, copper pipes), cables and woods hidden in walls, ceilings, floors and under gypsum boards.

Safety Information

⚠ Do not repair this product without authorization. If it is damaged, please contact the local dealer.

⚠ Electromagnetic radiation may cause interference to other devices (such as pacemakers or hearing aids and other medical instruments). Do not use this product in a flammable and explosive environment, near medical equipment or on an airplane.

⚠ Please dispose of the obsolete instrument in accordance with the local laws and regulations.
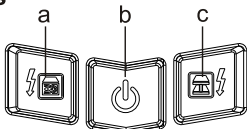
Product Structure

⚠ **Notes:**
Please use a safe charger and cable with a Type-C USB interface, a voltage output of 5V, and a current of ≥500mA. The company is not responsible for accidents caused by the charger.

序号	Description
1	LED indicator
2	2.4 inch color screen
3	Foreign material detection (wooden beam)
4	Power button, long press to power on, short press to power off
5	Metal detection
6	Sensor area (objects around it will be detected)
7	Label
8	1/4 copper nut
9	Protective cover of Type-C USB charging interface
10	Loudspeaker

Buttons

a. Foreign material detection (wooden beam)
b. Power button
c. Metal detection

Technical Indexes

Specifications	
Wood scanning depth (precision mode)*	20mm
Wood scanning depth (depth mode)*	38mm
Metal scanning depth*	100mm
Non-ferrous metal scanning depth*	80mm
Live wire alarm accuracy*	Live 110~220V, 50-60Hz, 50mm
Copper wire (≥4mm²)	40mm
Auto calibration	√
Operating temperature	0~40℃
Operating humidity	Metal mode: 0-85%RH
	AC mode: 0-30%RH
	Wooden beam mode: 0-60%RH
Storage temperature	-20~60℃
Drop proof	1m
LCD	2.4 inch color screen
Auto power off	About 5min
Battery	300mAh lithium battery
Battery life	3000 single measurements
Shutdown current	0 mA
Audio alarm	Voice broadcast
Low battery indication	√

The detection result will be affected by factors such as the material, shape, and size of the detected object, as well as the material and condition of the detection surface. If the cable is not live, the detection depth will be reduced.

Scanning Function--Notes Caution:

● Do not let moisture penetrate the product or expose it to direct sunlight.

● If the product was in an environment with extremely different temperature before, it is necessary to wait for its temperature to rise before turning on it.

● Using a microwave oven and other transmitting equipment near the wall scanner will affect the detection result.

● Basically, the detection result will be affected by surrounding environmental factors. The factors refer to whether the product is close to a machine that generates a strong magnetic or electromagnetic field during detection. In addition, moisture, metal-containing building materials, aluminum-coated insulation materials, wallpapers with good conductivity, carpets or tiles with conductivity will also affect the detection results. Therefore, users must pay attention to the relevant information (such as architectural drawings) before drilling and sawing on the wall, ceiling and floor.

To get the best detection effect:

● When using this product, avoid wearing jewelry such as rings or watches. Metal may cause inaccurate detection.

● Move the product evenly to the surface, and do not lift it or change the pressure applied.

● During detection, the product must always be in contact with the surface.

● Make sure that the fingers holding the product do not touch the surface being scanned.

● Do not touch the wall scanner or the scanned surface with the other hand or any other part of the body.

● Keep moving the product slowly when detecting for maximum accuracy and sensitivity.

Scanning Function--Calibration in Metal Detection Mode

● Before performing the detection function, there must be no moisture on the product housing. Dry the scanner with a cloth if necessary.

● After turning on the product, press the button c to enter the metal detection interface, and the loudspeaker will broadcast the current detection mode (if the broadcast function is turned off, there will be no sound). At this time, if one of the three icons of rebars, copper pipes, and stainless steel pipes shows on the display without metal interference, it indicates that calibration is required. The calibration method is to place the product in an environment without interference from metals and strong magnetic fields (such as lifting the product into the air, etc.). And then press and hold the button c until only the battery status icon and "Detect metal" are displayed on the screen.

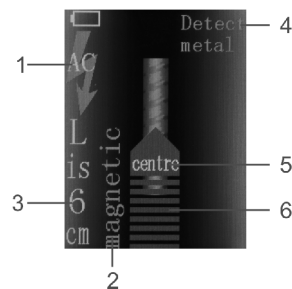## Scanning Function--Metal Detection (Detect Metals around the Product)

Figure 2

1. Alternating current
2. Magnetic or non-magnetic metal
3. Depth of metal
4. Detection mode
5. Center
6. Signal strength

1. The maximum detection depth of metal is 100mm.
2. After turning on the product, it will enter the metal detection interface.
3. Place the product on the surface of the detection object and move the product to the left or right. When the product detects a metal object, the signal strength area on the display will gradually light up as the product gradually approaches the metal. When the product is closest to the metal, the center icon will appear on the display.

4. When the product can detect whether the metal being measured is a magnetic metal or a non-magnetic metal, the screen will display the words "magnetic metal" or "non-magnetic metal", and the depth of the measured metal will be displayed below. Otherwise, the preceding information will not be displayed.
5. When the metal and AC signal are detected at the same time, the product will beep.
6. When the AC symbol shows on the display, it means that there is an AC signal nearby.

Note: When detecting metal, the detection depth on the display will change synchronously with the movement of the product. The accuracy of the depth is related to the shape, material and distribution of the measured metal, and the properties of its surrounding medium. When the measured object is a rebar or a copper pipe with a diameter of 18mm, the accuracy of the depth is the best. On the contrary, the accuracy is low, and the depth value can only be used as a rough reference value.

⚠ Caution !

- If the internal equipment malfunctions or operates improperly, the product may not be able to accurately detect live wires in the wall. Therefore, users should not only rely on the product to identify the existence of dangerous live wires, but also refer to other evidence, such as construction drawings or visual identification of wiring or pipeline entry points.
- If there are live wires in the wall, do not take measures that may cause danger. Before turning holes or nails to penetrate the wall surface, be sure to turn off the power, gas and water.
- Concrete, bricks, and ceramics have a shielding effect on the electric field signal from the live wires, so when the AC signal is detected on their surface, the detection will be affected.
- When the electric appliance is connected to the required conductor and turned on, the AC signal can be detected more easily.
- The signal of the "live" wire will spread from both sides of the actual wire, so sometimes the area of the "live" wire alarm looks much larger than the actual wire.
- AC signals mainly come from live wires, and may also come from static electricity or induced electricity in the environment. Placing the hands on the wall next to the detector may help to eliminate static electricity and induced electricity.
- The signal strength of a "live" wire depends on the location of the cable. Therefore, please take further measurements nearby or use other information to check for the presence of "live" wires.
- Wires that are not "live" may be detected as metal objects, and thin wires may not be detected.

Scanning Function--Foreign Material Detection (Wooden Beam)

- Maximum detection depth: precision mode: 20mm; depth mode: 38mm. Long press the wooden beam detection button to switch between the precision /depth mode.
- The foreign material detection mode can detect objects in gypsum drywalls, plywood, solid wood boards, and coated wood walls.

- The foreign material detection mode will not detect objects in concrete, mortar, blocks, bricks, carpets, foil materials, metal surfaces, tiles, glass or any other materials with uneven density.
- Due to differences in moisture, material content, wall texture and paint, the scanning depth and accuracy will be different.
- In addition to wooden beams, the foreign material detection mode can also detect metals and other dense materials.
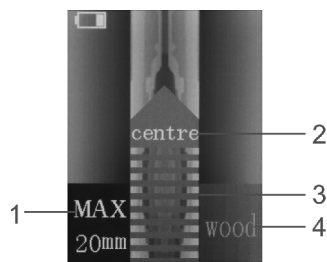

Figure 6   Figure 7   Figure 8

Figure 9

1. Wooden beam detection mode (precision/depth mode)
2. Center
3. Signal strength
4. Property of measured object: when the center icon is displayed, the property of the measured object will show on the screen:

   The measured object is non-metallic, usually a wooden beam.

   The measured object is a small metal material, usually iron nails.

   The measured object is a large metal material, usually a steel frame.

   The measured object is a small non-magnetic metal, usually a cable.

   The measured object is a small amount of metal materials, usually cables or nails.

Operating instructions

1. After turning on the product, press the wooden beam detection button to enter the foreign material detection interface (Figure 3), and the loudspeaker will broadcast the current detection mode (if the broadcast function is turned off, there will be no sound).
2. When detecting foreign materials, users must hold the product upright to the wall and then short press the foreign material detection button. And then keep the product still for 1-3 seconds, and wait for the calibration (Figure 3) to be completed. When the interface shown in Figure 4 appears, perform the detection operation.
   Place the product on the surface of the detection object and move the product to the left or right. Move the product evenly to the surface, and do not lift it or change the pressure applied.
3. When the product detects a foreign material, the screen will display the signal strength synchronously (Figure 5).

4. Continue to move the product in the same direction. When the wall scanner is in the middle of the wooden beam, the screen will display the center icon and the property of the measured object (Figure 6).
5. At this time, keep moving the product in the same direction. When the product leaves the center of the measured object, the display will show the interface as shown in Figure 5. Continue moving the product until it is far from the wooden beam. The signal will gradually decrease until there is no signal, and the display will only show the battery status and detection mode. The detection is complete.

Note: After repeated detections, the position will be more accurate.

Please note:

- Sometimes due to environmental factors, the product may not be automatically calibrated, and an error alarm signal may appear. Please calibrate it manually. The calibration method is to short press the wooden beam detection button again and wait for the calibration to be completed.
- If the product has just been calibrated on the wooden beam, users need to move it out of the scope of the wooden beam, and the wooden beam can be detected again.
- If the scanning results are unstable, it may be caused by moisture in the wall cavity or dry wall, or paint or wallpaper that is not completely dried. Moisture can interfere with the sensor of the product, so please let the wall dry for a few days.
- In some environments or on uneven surfaces, it is difficult to detect wooden beams using the foreign material detection mode. Users can switch to the metal detection mode to locate nails on the wooden beams.
- Depending on how close the wires or pipes are to the wall, they can be detected by the foreign material detection method. Always be careful when nailing, cutting or drilling holes on walls, floors, and ceilings that may contain these items.

Maintenance

- Please do not expose the product to extremely cold or hot environments, and do not subject the product to external force or vibration for a long time.
- The product should be stored indoors. Please put the product in the box when not in use.
- When cleaning the product, users can use a soft cloth dipped in clean water to squeeze dry and wipe, do not use corrosive or volatile substances.
- Do not post any labels or nameplates on the front and back of the detection area and do not stick metal nameplates.
- Use the attached protective cover to store and carry the product.

Troubleshooting

Phenomenon	Reason	Solution
Fail to power on	Low battery	Charge
	Bad button contact	Try to press the power button harder or send for repair.
Error codes displayed on the screen	Please refer to the Error Code section.	Please refer to the Error Code section.

Warranty

Triplett Test Equipment and Tools extends the following warranty to the original purchaser of these goods for use. Triplett warrants to the original purchaser for use that the products sold by it will be free from defects in workmanship and material for a period of (1) one year from the date of purchase. This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons in any way or purchased from unauthorized distributors so as, in our sole judgment, to injure their stability or reliability, or which have been subject to misuse, abuse, misapplication, negligence, accident or which have had the serial numbers altered, defaced, or removed. Accessories, including batteries are not covered by this warranty

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