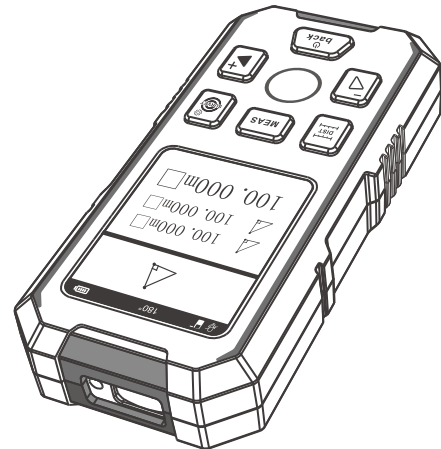


Multifunction Measuring Instrument

NF-513S

Your excellent helper in cable test!



User Manual

Pls read it carefully before using

VER:V2

Content

1. Safety Warning	01
2. Illustration For Key Functions.....	02
3. Function switch & System menu.....	02
4. Interface description and usage diagram.....	03
5. Wall Detecting Function.....	04
5.1 Metal Detection.....	04
5.2 Wooden Detection.....	05
5.3 AC Power Detection.....	06
6. Laser Distance Meter Function.....	06
7. Product Parameter.....	10
8. Fault Illustration.....	11

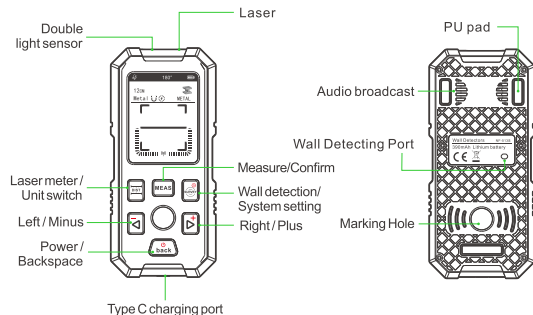
Welcome to use multi function Measuring Instrument, To ensure the best usage for the device function, Pls read our user manual carefully and follow our operation guidance.

1. NF-513S can detect metal(Stainless steel , copper pipe), power cable, wooden product behind wall, ceiling, ground floor.
2. This device can do the job with laser meter function, it can measure length, scale, volume, carry Calibration for plus&minus,times for volume.

1. Safety warning

1. To ensure the safe usage and prevent any potential injury such like laser flection,shock,or any injury by incorrect operation and mis usage Pls read the safety warning and user guidance in the user manual.
2. Pls DO NOT change the performance for the laser by any means, which will bring risk for explosion of laser. Laser will be on only when in usage and DO NOT look at the laser DIRECTLY. Instrument will be only used by relevant users.
 - ⊛ DO NOT use laser to point at anyone when using in dark environment.
 - ⊛ DO NOT point the laser to high reflection object.
 - ⊛ DO NOT leave the instrument within kid's reach.
3. Pls contact with local distributors when any damage occurs, don't try to repair it yourself.
4. Electric-magnet reflection may cause some interference to some other equipment (such like pacer,hearing-aid,medical instrument).
 - ⊛ DO NOT use the instrument in the flammable, explosive environment.
 - ⊛ DO NOT use the instrument close the medical equipment.
 - ⊛ DO NOT use the instrument in an airplane.
5. Pls deal with the instrument according to the local law, when you decide to abandon it.

2. Illustration for Keys & Functions



3. Function Switch & System Menu

3.1 Turn the instrument ON / OFF

Turn ON, Long press the power button to turn it on/off.

3.2 Laser distance meter and wall detecting functions switch

Default set to laser meter function, short press survey button to enter wall detecting mode; Short press button to switch to laser meter function.

3.3 System Menu setting

① Enter Menu Setting

Long press button when the instrument is ON, there are 7 lines in the system menu; History Data, Unit setting, Audio switch, Variation setting, Sensitive setting, Metal detection Calibration, About the instrument.



System Menu

② Menu setting

Press button on the system menu page to step forward, Press to step backward, Press to confirm the choice, Press / to move between choices. Press to save the setting, Press to step backwards or Exit the setting.

4. Interface description and usage diagram

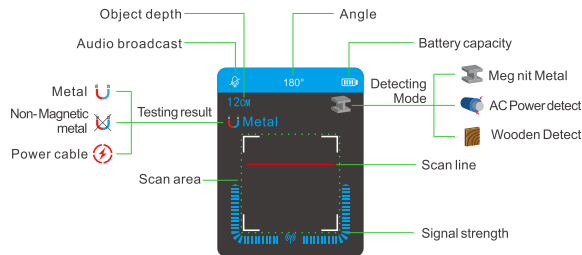


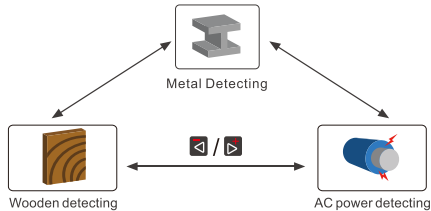
Illustration for symbols on the screen



Wall detecting function user guidance

Note, human body is conductive, to ensure the best detecting result and guarantee the right depth, Pls follow the guidance when use the instrument.

5. Detecting model switch diagram



Applicability

NF-513S wall detecting function can detect metal (magnetic or non-magnetic), wooden power cable etc behind wall, ceiling, floor etc.

5.1 Metal detection

① Short press on to enter wall detecting model, Instrument default setting at metal testing model. symbol shows metal detection model, Customers can start to scan when the text disappeared from the screen and the red scan line appears.

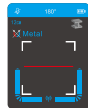
② When the symbol comes out at the top left corner, with the audio broadcast "Metal" and the depth figure showed on the screen with the signal strength it means the instrument has found magnetic metal, if the symbol shows others are the same as the metal it means the instrument has found some non-magnetic metal; when the symbol shows on the screen, it means the instrument has found AC power cable with 50/60HZ frequency.

Central Mark hole

The display will show the central marking hole together with the depth figure when it moves to the top of some tested objections (Magnetic metal / non magnetic metal / wooden / AC power cable).



Magnetic metal



Non-Magnetic metal



Magnetic metal

Metal detecting self Calibration

The temperature or humidity changes will result in wrong testing result on metal detection or shorten the depth testing, the calibration method is : First, Long press on button to enter the system menu, Secondly, by using / buttons to choose "Metal detection calibration" option, Thirdly operate the instrument to carry on the calibration process according to the notice ; Pls hold the instrument in the air quickly press & release the button in a non-metal, non-magnetic environment.



Metal Calibration

5.2 Wooden Detection

In wall detection mode, Switch to wooden detection by short Pressing the / button. The wooden detection uses Scanning To determine the uniformity of the detected target Material to Locate hidden foreign objects. Such as detecting Behind Plasterboard walls, bare wood floors, plywood, coated Wood Walls, etc., including wooden stalls, light steel keels, Etc. During the use process, it is strongly recommended that The Instrument be closely attached to the target surface according to the hand-held schematic diagram and move slowly. When a foreign body is detected, it will be displayed in the form of "bone position" broadcast, text display, and signal bar.

Automatic calibration detection mode

Step 1: Place the instrument close to the detected target surface according to the hand-held schematic diagram, and the instrument will perform automatic calibration. After the calibration of the instrument is completed, move the instrument slowly in the area to be measured. When a foreign body is detected, the screen will display "bone position" and receive Information such as signal strength. When the sound is turned on, the instrument will make a beeping sound after it announces the "bone position". The closer the sensing area of the instrument is to the position of bones or grooves or other material changes or the position of foreign objects, the stronger the signal, and the more rapid the "di" sound;

Step 2: Center judgment, continue to move the instrument slowly, when the signal reaches a certain intensity, it means that it has reached the target center position, and the center mark of the screen lights up.

Step 3: Lift the instrument to terminate the scanning detection and enter the interface to be calibrated. Close to the surface of the detected target again, recalibration and detection can be performed.


Manual calibration detection mode

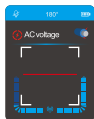
Each time you enter the wooden detection, the default is the automatic calibration detection mode. After close to the detected target surface, when the color of the detected target surface is dark and cannot be calibrated, press the "WOOD" button to enter the manual calibration detection mode to force the instrument to calibration. After the Calibration, slowly move the instrument in the area to be tested for scanning detection.

Notice:


1. Because the human body has conductor properties. Slightly stay away from the sensing area during use.
2. When the manual calibration detection mode is executed, short press the "WOOD" button with your fingers and please quickly leave the sensing area of the instrument to avoid misjudgment.
3. When the "bone position" is detected, it can move slowly back and forth, and locate the foreign body more accurately through information such as the signal bar.

5.3 AC power detection

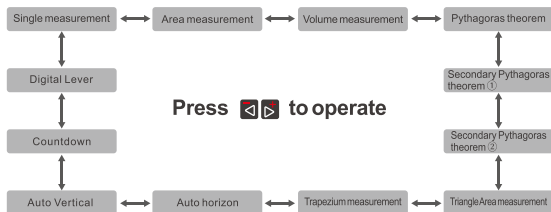
①  is the symbol for AC power detection mode, once the red line appears after text in the scan area, Users can start the AC power detection.



AC power detection






② The screen will display the signal strength together with  symbol when it detects 50/60HZ AC power.

6. Laser Distance Meter Function



Laser Distance Meter Function



① Continuity measurement

Long press  for 1s, to enter continuity measurement, the screen will display MAX,MIN length, under continuity measurement mode, short press on  or  to exit the mode, Press  or  again to back to single measurement.



Continuity measurement




② Single measurement

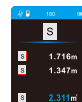
Short press  to enter laser distance measurement, short press  to take measurement, the result will be displayed on the screen.



Single measurement




③ Area measurement

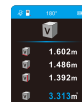
Short press on  /  in Single measurement / Digital level mode to enter area measurement. Short press  button to measure length and width, area figure will display on the screen.



Area measurement




④ Volume measurement

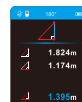
Short press  /  to choose the volume measurement function, take measurement for length, width, and height by short press  button, final figure will show on the screen.



Volume measurement




⑤ Pythagoras theorem

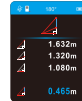
To enter the Pythagoras theorem function users need to press  /  by short press on  users can measure the length for horizon/vertical and hypotenuse then the other direction figure will auto show on the screen.



Pythagoras theorem

⑥ Secondary Pythagoras theorem 1

Use  /  to choose the function, by press  to measure the length figures for 2 hypotenuses and horizon the screen will show the height between the 2 hypotenuses.



Secondary Pythagoras theorem 1

⑦ Secondary Pythagoras theorem 2

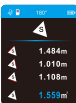
Select the function by short press \leftarrow / \rightarrow , short press M+ to measure the 2 lengths for hypotenuses and horizon length, the screen will display the height between the 2 hypotenuses.



Secondary Pythagoras theorem 2

⑧ Triangle area measurement

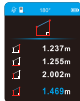
Select the function by pressing \leftarrow / \rightarrow buttons, press M+ to take measure the length for the 3 lines, the device will show the area figure on the screen.



Triangle area measurement

⑨ Trapezoid measurement

Select the function by pressing \leftarrow / \rightarrow buttons, take measurement for 2 vertical length and one for horizon length, the device will calculate the length for hypotenuses and display the figure on the screen.



Trapezoid measurement

⑩ Self level measurement

Select the function by pressing \leftarrow / \rightarrow buttons, measure the length for hypotenuses, the device will auto calculate the leaning angle, length for horizon and vertical direction.



Self level measurement

⑪ Self vertical measurement

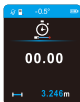
Select the function by pressing \leftarrow / \rightarrow buttons, measure the hypotenuses lengths for 2 lines by pressing M+ button, The device will auto calculate the distance between the 2 ends and also the angle between the 2 hypotenuses lines, and display the result on the screen.



Self vertical measurement

⑫ Count down measurement

Select the function by pressing \leftarrow / \rightarrow buttons, adjust the countdown time by short press on \leftarrow / \rightarrow button, Press the M+ button to start the function, when the countdown ends, the device will display the length figure on the screen.



Countdown measurement

⑬ Digital level measurement

Select the function by pressing \leftarrow / \rightarrow buttons, the inclination and roll angle will display on the screen.



Digital level measurement

⑭ Plus & Minus measurement

Only works in single measurement, area measurement, and volume measurement model, Long press the \leftarrow / \rightarrow button after getting a result.

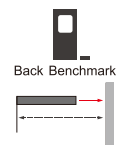
Length plus / minus: short press M+ button to take different measurement figures and display the final result on the screen after continuously plus/minus calculation.

Area / Volume plus/ minus: short press M+ button to take different measurement figures, short press M+ again, the final result will be displayed on the screen after plus/minus calculation.

⑮ Bench mark switch: Long press on to switch bench mark between include/ exclude the length of the device.



From the top of the device
(Exclude the length for the device)



From the bottom of the device
(Include the length for the device)

⑯ Record Storage

Short press on M+ to record the result after calculating, The max record can store 50 records, and it will auto refresh when new ones coming in, Users can look through the record by logging in the system menu and delete all the record data by pressing \leftarrow / \rightarrow at the same time.

7. Product Parameter

Product number	NF-513S		
Function	Laser distance+ Wall Detection+ Digital level		
Appearance	2 colors, solid shape		
Screen Type	2.4 HD screen, 240°320 resolution		
Charging	Type-C charging		
Battery Type	Lithium Battery (390mAh)		
Protect Lever	IP54		
Audio Broadcast	Live Broadcast		
Dimension (mm)	63*25*139 (mm)		
Net Weight(g)	200 (g)		
Laser Meter Function		Wall Detection Function	
Distance	40 m	Depth Measurement	Magnetic Metal: 8cm
Accuracy	± 1.5mm + D*5 out of hundred thousand		Non-Magnetic Metal: 8cm
Laser Type	630-670nm, <1mW		AC power cable :5cm
Laser Cat	Level 2		Wood: 3.8cm
Auto OFF	3 minutes	Metal Detection	Testing figures provided with Ø20 mm stainless pipe as tested object
Unit Switch	m/ ft / in / ft+in	Non Metal Detection	√
Benchmark Switch	Front / Bottom	AC power Detection	√
Continuously Measurement	Max/ Min value	Auto OFF	5 minutes
Single Measurement	√	Operation Temperature	0-50°C
Area Measurement	√	Storage Temperature	-10-60°C
Volume Measurement	√	Digital level Function	
Pythagoras theorem	√	Digital level	± 90°C
Secondary Pythagoras theorem 1	√		
Secondary Pythagoras theorem 2	√		
Triangle area measurement	√		
Trapezoid measurement	√		
Auto Horizon measurement	√		
Auto Vertical measurement	√		
Countdown measurement	√		
Digital level measurement	√		
Plus / Minus	√		
History Record Storage	50		
Self collaboration	√		
Operation Temperature	0-40°C		
Storage Temperature	-10-60°C		

8. Fault Code Illustration

Fault Code	Reason	Solution
203	Temperature Outrage	Use the device at proper temperature
220	Battery Shortage	Pls recharge the battery
254	Calculation mistake	Pls remeasure the figure / recalculate the result
255	Weak reflect light Overtime measure	Pls remeasure or improve the reflect side
256	Strong reflect light	Pls remeasure or improve the reflect side
257	Measure Distance Outrage	Pls use the device within the setting range
300	Hardware fault	Pls contact the distributor if it happens again



精明鼠®

深圳市诺方舟电子有限公司

编号	201	202	301	302	303	304	305	比例:	1:1	品号:	304-E1007-0002
类目	塑胶件	五金类	镜片	PVC贴纸	不干胶贴	说明书	包装盒	单位:	mm		
选择						√		设计	CZG	品名:	NF-513S说明书骑马订英文-V2 20250319
306	307	308	309	310	311	312	313	核准			
彩卡	吸塑	工具包	PE袋	纸箱	宣传单	合格证	打印标签	标准:	√	文件类型:	做货文件
								定制:			
制作日期	2025.03.19			样式	骑马订		印刷材质	128g双铜纸			
印刷要求	彩色			页码	16P		变更记录	V2较V1版本,更新文案内容			
尺寸大小	135*92mm			版本	V2						