User Manual

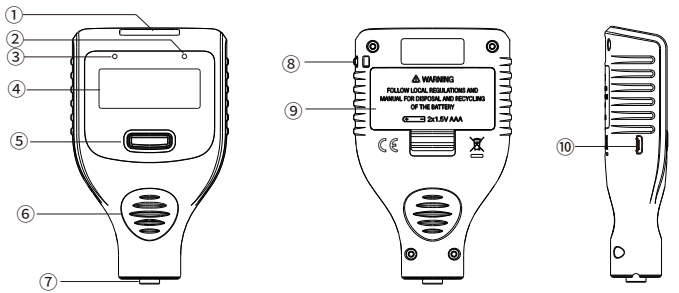
Coating Thickness Gauge v1.0.8

1. Introduction

The thickness gauge can continuously measure the thickness of the metallic surface and the thickness of the surface of ferromagnetic metals (e. g., iron, nickel, cobalt, etc.). The specific uses of the instrument include measuring the thickness of iron, stainless steel surface paint or galvanized coating, and measuring the thickness of aluminum, copper surface paint or plastic film.

This instrument is suitable for car paint detection: while measuring the paint thickness, it can also identify the iron-galvanized and iron powder putty material. The instrument has strong anti-interference ability and can work normally in a more complex electromagnetic field environment.

2.Appearance diagram



①Display screen 2 ②Green indicator light ③Red indicator light
④Display screen 1 ⑤Button ⑥Anti-skid groove
⑦Probe ⑧Lanyard hole ⑨Battery compartment
⑩USB interface

3. Precautions

3.1 Battery installation

(1)Install the battery according to the positive and negative electrode inside the battery compartment.
(2)After loading the battery, please hold up the battery cover tightly to avoid the battery from popping up.
(3)When the instrument is not used for a long time, please be sure to remove the battery and place it properly.

3.2 Other

(1)Avoid direct contact with corrosive chemicals.
(2)Avoid the use in a strong magnetic field environment (such as near the magnet)to avoid damage to the probe.
(3)Strictly prevent strong electric and electrostatic impact.

4. Switch machine

(1)**Power on**: one-key boot, just press the button to turn on.
(2)**Power off**: long press for shutdown for 3 seconds; after 2 minutes without any operation (press the button or measure), the instrument will be automatically shutdown.

5. Display

(1) **Screen brightness**: In case of no operation, the instrument will automatically dim the screen brightness after 30 seconds to extend the battery life.
(2) **Screen rotation**: When the measurement interface is displayed, press and hold the button until a "beep" sounds. Release the button and the screen will rotate 180°.
Note: If you do not release the button after hearing the first "beep" until the second "beep" sounds, the instrument will shut down.
(3) **Font conversion**: When turning on the instrument, press and hold the button without letting go (do not let go when the menu configuration interface pops up on the screen). When the words "Switch Font" appear on the display interface, release the button to switch the font size display.
(4) **Substrate properties**: ① instrument interface display "iron": indicates that the instrument identified the ferromagnetic metal substrate. ②The instrument interface displays "non-iron": indicates that the instrument identifies a non-ferromagnetic metal substrate. ③The instrument interface displays "iron zinc" , indicating that the instrument identified the iron galvanized substrate. ④The instrument interface shows the "iron powder putty" , indicating that the instrument identifies the iron powder putty substrate.
NOTE: Standard model (use dot matrix LCD screen),"iron zinc" has blue backlight alarm, "iron powder putty " has red backlight alarm.
(5) **Indicator light prompt**: ①Bright green indicator light when the measurement data is normal. ②When exceeds the measurement range or the instrument identifies the iron powder putty substrate.

6. Zero

When the instrument is used for the first time, after changing the battery, changing the measuring material or changing the ambient temperature suddenly, in order to reduce the measurement error, the zero adjustment operation should be performed. If the accuracy requirement is small, then the attached standard substrate can be zero. If the accuracy requirement is high, it is recommended to grind off the measured coating (plating) layer, and zero it on the exposed metal surface.
(1) When the instrument adjusts the standard substrate or metal surface at zero time, press the button not to let go, and immediately press the probe vertically on the substrate or metal surface, to keep the probe stable, do not tilt or shake.
(2) When the word "calibration completed" appears on the display interface, lift the instrument away from the standard substrate or metal surface and release the button.
Note: Press and hold the button for more than 3 seconds. If there is no calibration action, the instrument shutdown will be triggered.

7. Measurement steps

Step 1. Prepare the parts to be tested.
Step 2. Keep the probe end at least 2cm away from the metal object, and press the button to start on.
Step 3. The probe end quickly fits to the surface of the measured material, keep the probe stable, do not tilt or shake, in the process of the contraction of the probe into the instrument, the instrument can automatically distinguish the substrate properties and measure the thickness of the coating (plating) layer. After the displayed thickness value is refreshed and accompanied by the "drop" sound prompt, lift the instrument so that the probe end distance from the surface of the

measured object is at least 2cm, then the next measurement can be made.

8. Function settings

How to enter the configuration menu interface: during the boot, press and hold the button until the screen popup, under which the function of the instrument can be set.

The method to set one of the functions: short press the button, select the corresponding function, wait for about 3 seconds, the instrument will complete the relevant function setting. The specific functions are as follows:

8.1 Probe mode

(1)**Automatic**: The instrument will make an adaptive measurement, and this mode is suitable for the unknown metal substrate.

(2)**Magnetism**: The instrument will be measured in a magnetic induction mode suitable for ferromagnetic metal substrates.

(3)**Vortex current**: The instrument will be measured in an eddy current effect mode, which is suitable for non-ferromagnetic metal substrates.

Note: the factory default "automatic" mode, can identify iron, non-iron, iron galvanized and iron powder putty substrate.

8.2 Unit

μm, mm and mil.

8.3 Language

It is available in multiple languages.

8.4 Restore the factory settings

Select the "reset" option in the configuration menu interface, and select until the word "success" appears, then the setting is completed.

8.5 Bluetooth

Select Bluetooth ON or Off.

Note: When not using Bluetooth function, you can choose "off" to reduce power consumption and prolong battery life.

9. Record and view the data

9.1 Record the data

The instrument can store 1,300 data and view up to 10 data on the instrument. Other more data needs to be connected to the APP or PC-side software to view. The instrument display interface can record up to 10 data. If there are more than 10 data, the instrument will automatically update the latest data and discard the oldest data. These data

shutdown is not lost, restore the factory settings can be cleared.

9.2 View the data

(1)Check it directly on the instrument

In the measurement interface, you can browse the data one by one. The viewing data includes the latest measurement values (up to 10), and its number, maximum, minimum and average.

(2) Check it through the mobile phone APP

Open the mobile phone APP software and connect to the instrument via Bluetooth. The real-time measurement data, statistics, and data curves or bar charts can be viewed in the real-time data interface of the APP. Relevant data can also be exported through the APP.

(3) Check through the PC-end software

The instrument has the USB data transmission function, the instrument and the computer through the USB cable connection. Real-time measurement data, statistics, and data curves or bar charts can be viewed in the data interface of the computer software. Data can also be exported through the software.

10. Use of the related software

APP

(1)The APP software used in the instrument can be scanned with the QR code on the APP manual or obtained from the dealer.

(2)The software introduction and its use method can be viewed in the following steps: Open the APP> click "Help" in the lower right corner> click "APP Help Document" to view.

Note: Before Bluetooth matching and connection, you must open the instrument Bluetooth, mobile phone Bluetooth and mobile phone positioning function.

PC software

(1)The PC end software used in the instrument can obtain the software installation package from the dealer.

(2)The software introduction and its use method can be viewed according to the following steps: open the software> click "About Us" on the right side of the interface> click "Help Document" to view.

11.Function and Technical parameters

Probe selection	Standard model ◌	Low temperature model ◌
Measurement principle	Fe: Magnetic Indution; NFe: Eddy Current	
Measurement range	0~3000μm	
Accuracy	±(2% reading+1μm), ≤2000μm ±(3% reading+2μm), 2001~3000μm ±(5% reading+2μm), >3000μm	
Resolution	0.1μm(0~99.9μm); 1μm(≥100μm)	
Calibration	Zero calibration	
Unit	μm, mm, mil	
Iron putty power recognition range	0~2000μm	
Iron-galvanized substrate recognition range	3~1000μm	
Probe triggering force	0.5~1.2N	
Minimum curvature radius	Convex 5mm; Concave 25mm	
Minimum thickness of substrate	Fe: 0.20mm; NFe: 0.03mm	
Minimum measuring area	Diameter 15mm	
Measure reaction time	About 0.3 seconds	
Display	Black and white LCD(128*48) +white OLED(128*32)	White OLED(128*64) +white(128*32)
Bluetooth and APP	Support	
USB data transfer	Support	
Operating temperature	-10~+50℃	-40~+50℃
Storage temperature	-20~+60℃	-50~+60℃
Power supply	2 AAA 1.5V alkaline batteries(recommended) 2 AAA 1.2V Ni-MH batteries	
Protection level	IP40	
Demension	103*64*25mm	
Shell material	ABS	
Weight	About 60g(without batteries)	

FCC Warnning:

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 againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0cm between the radiator and your body.