Coating Thickness Gauge

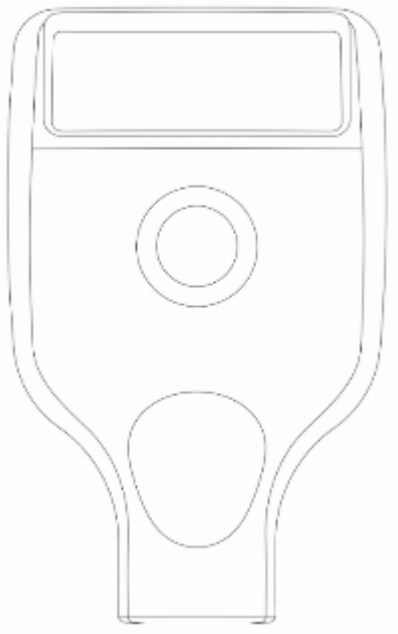
Code: 86220

User Manual V2.12

Please read this manual carefully before using and reserve it for reference.

I. Product introduction

Coating thickness gauge is used for measuring the thickness of automobile paint. The automotive body shell consist of metal materials such as iron, aluminum and other non-metal materials such as carbon fiber and plastics. This coating thickness gauge can measure the thickness of car paint on iron and aluminum materials. . Moreover, it can identify not only non-metal car bodies, but also the ferrous putty layer as well as the galvanized iron.



Standards for the product:

- DIN EN ISO 2808 Paints and Varnishes-Determination of Film Thickness
- JJG-818-2005 Verification Regulation of Magnetic and Eddy Current Measuring Instrument for Coating Thickness
- GB/T 4956-2003 Non-magnetic Coatings on Magnetic Substrates-Measurement of Coating Thickness-Magnetic Method
- GB/T 4957-2003 Non-conductive Coatings on Non-magnetic Basis Metals-Measurement of Coating Thickness-Eddy Current

II. Technical parameters

Probe tip	Ruby
Measuring principle	Fe: Hall Effect / NFe: Eddy current
Probe type	Built-in integrated probe
Measuring range	0.0-3500μm
Resolution	0.1μm:(0μm - 99.9μm) 1μm:(100μm - 999μm) 0.01mm:(1.00mm - 3.00mm)
Accuracy	≤±(3%H+2μm), H is the standard value
Unit	μm / mil
Measuring interval	0.5s
Minimum measuring area	Ø = 25mm
Minimum curvature	Convex:5mm / Concave:25mm
Minimum substrate thickness	Fe:0.2mm / NFe:0.05mm

Display	128×48 dot matrix LCD
Power supply	2pcs of 1.5V AAA alkaline battery
Operation temperature range	-20℃-50℃
Storage temperature range	-20℃-60℃
Gauge size	101*62*28 mm
Weight(with battery)	79g
Supply Voltage	DC3V
Operating Current	20mA
Operating Power Consumption	60mW

III. Product advantages

1. No calibration, just zero adjustment.
2. One hand operation, only one button.
3. Fast measurement, 0.5 s measuring interval.
4. Wear-proof ruby probe tip for long-term use.
5. The device can identify the ferrous putty as well as the galvanized iron substrate.
6. The gauge automatically identify the substrate and switch measurement mode rapidly.
7. "Fe", "NFe", "Fe/NFe" three measurement modes can be set.
8. Measuring non-magnetic coatings on steel or iron and measure Non-conductive coatings on non-magnetic metal substrates in one gauge.
9. Thanks to the use of the most-advanced digital probe technology, these sensors are unsusceptible to interference and provide an excellent measuring accuracy. Even variations in temperature will not affect measurement and readings remain stable to ensure a very good reproducibility over the complete measuring range.

IV. Operation

1. Power on/off

Power on:
Short press the power button to turn on the gauge. Display the version number and serial number, then

the recorded data of last measurement are displayed after the gauge is turned on.

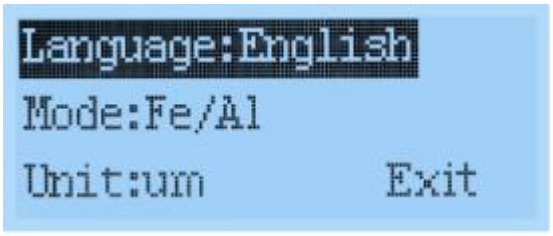
Power off:
Long press the button to shut down the gauge, or the gauge will automatically shut down in 3 minutes without any operation.

2. Device setting

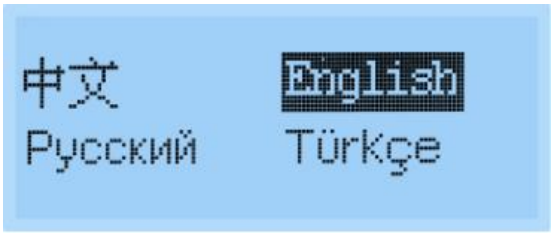
In the off state, long press the button for 3 s to enter the setting interface. After entering the setting interface, if there is no operation for more than 20 s, the instrument will automatically Shortly press the button can select the settings; Long press the button for 3 s and less than 5 s to confirm the settings; Long press the button for 5 s, the instrument exits the setting and shuts down and the setting is invalid.

Language settings

The instrument is available in Chinese, English, Russian, Turkish.
Setting method: In the main setting interface, short press power button to select "Language" option, long press the button for 3 seconds to confirm the selection, short press the button again to select the desired language, long press the button for 3 seconds to confirm the selection, and return to the main setting interface.



Setting interface

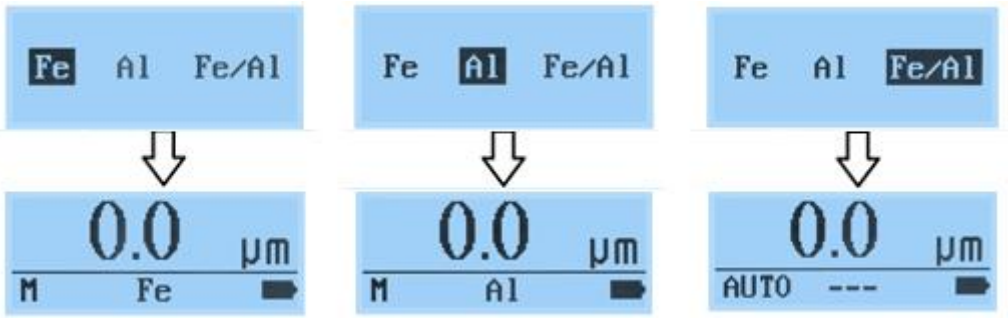


Language selection

Measurement modes selection

There are three measurement modes: Ferrous substrate measurement (Fe), Aluminum substrate measurement (Al), and Auto identification (Fe/Al). Under normal circumstances, it is enough to use Fe/Al auto identification mode. This mode features identification of the ferrous putty and galvanized iron substrate. When the measurement substrate is settled, you can select Fe or Al as the fixed measurement mode.

Setting method: In the main setting interface, select "mode" option by short pressing power button, and long press the button for 3 seconds to confirm the selection. Shortly press the button to select the measurement mode. And long press the button for 3s to confirm the selection and back to the main setting interface.



Unit setting

The device can be set to the metric or imperial unit, and the factory default is metric.
Setting method: In the main setting interface, shortly press the button to select “Unit”. Long press the button for 3s to confirm and then enter the unit selection interface. Shortly press the button to select your unit and long press the button for 3s to confirm and back to the main setting interface.

Main setting interface Unit selection interface

Exit

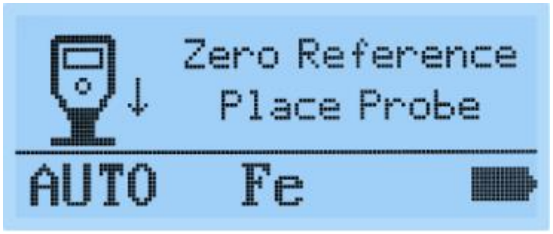
In the main setting interface, short press power button to select "Exit", long press the button for 3 seconds to confirm and enter the measurement interface.

3. Zero adjustment

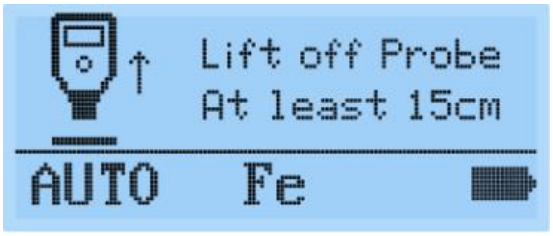
A zero-adjustment is required when using the gauge for the first time, after inserting new batteries, working with different materials or ambient temperature changes. Using iron-base and aluminum - base adjustment plates respectively to carry out zero adjustment. We strictly recommend carrying out the reference check on the uncoated original substrate, due to the difference of magnetic and conductive properties of the material, some measurement deviation will be caused. If this is not possible, please use the zero reference plates, there are Fe plate and NFe plate, please choose correctly according to the measuring materials.

3.1 Measuring the plate or uncoated original substrate, a measured value will be displayed on the gauge, please make sure the probe tip is placed perpendicularly and evenly on the surface.

3.2 Hold the probe still, long press the button for 3s, the gauge will display “zero reference place probe” (as shown in below picture).



3.3 After hearing a buzzer sound, the gauge will display “Lift off probe at least 15 cm” (as shown in below picture), release the button and lift the probe away from the plate (substrate) for at least 15 cm.



3.4 The zero adjustment completed when there is the buzzer sound again, and the LCD screen displays 0.0.

3.5 After the zero adjustment is completed, place the standard film on the plate (substrate), if the measurement value is stable and deviation from standard value within ±3µm, the gauge can be used normally.

Note: After the zero adjustment completed，when repeating measurement on the same spot, the reading may not always be 0µm, since surface roughness, dirt, scratches etc. It might cause variances. The operation of the gauge should be correct and proficient; otherwise, it will lead to instability of the measured values.

4. Measurement

1) Use fingers to hold gauge where there is non-slip groove.

2) Press the gauge vertically on the surface of the object to be measured. Keep the gauge steady and do not tilt or shake it. The result will be shown on the screen, and there will be a buzzer.

3) To continue measuring, lift the gauge away from the object. Repeat the operation of step 2).

4) When the device identifies the ferrous putty, the buzzer alerts for two times. And the interface of the device will prompt: “Ferrous putty”. When the device identifies the galvanized iron, it will turn on the green backlight. The substrate is displayed as “FeZn”.

5. Check measurement records

In measurement mode, short press the button to check historical data. The gauge stores 9 sets of data. When more than 9 sets of data are stored, the earliest recorded value is automatically deleted, and No.1 is the last test data. Recorded data will not loss after powering off.

V. Attentions

1. The device must be zero adjusted respectively with the iron-base and aluminum-base zero adjustment plates. Otherwise, there may be abnormal identifications of the ferrous putty and galvanized iron substrate.
2. Some car bodies may be misjudged as iron-zinc car bodies due to the base material.
3. Do not slide the probe on the car surface, which will result in damage to the paint and the gauge.
4. Please keep the car paint surface clean, the dust and dirt on the paint surface will affect the measurement accuracy.
5. When the gauge displays low battery, the battery needs to be replaced.

VI. Packing list

No.	Description	Quantity	Unit
1	Coating Thickness Gauge	1	Set
2	Fe zero-adjustment plate	1	pcs
3	NFe zero-adjustment plate	1	pcs
4	Standard film	1	pcs
5	User manual	1	pcs
6	Drawstring bag	1	pcs
7	1.5V AAA alkaline battery	2	pcs

VII. Service

1. The gauge has one-year warranty. If the gauge works abnormally, please send the whole gauge to our company for maintenance.

2. Provide users with spare parts and lifelong maintenance services.
3. Provide the users with the gauge calibration service.
4. Free technical support for long term.