Coating Thickness Gauge

VA8042

Operation Manual

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Contents

Ⅰ. Preface

Please read the following information carefully before using the meter. The coating thickness gauge is designed to measure the coating thickness on a magnetic metallic matrix, can be widely used for manufacturing , metal machining , chemical industry, commodity inspection and so on. It is according with JJG 889-1995 standard.

Ⅱ. Safety information

According to European Union's CE safety norms.

Please use it according to the following conditions.

Environment conditions: Operation temperature: 0~+40℃, Storage and transport temperature: -4 0~+70℃.

Maintenance & Save: Do not clear the meter using alcohol and impregnant. If you do not use it for a long

time, please take out the batteries and place the instrument in a dry surrounding.

Ⅲ. Functions & Features

● By electromagnetic method, the meter can measure the coating thickness non-destructively, including paint, spray-plastic, rubber, enamel, or chromeplate, copperizing, aluminium plating on steel, iron, non-austenitic stainless steel.

● Four digitals LCD display, differentiating upto μm.

● System calibrating by user-self.

● Pocket shell, convenient for engineering locale .

● Thickness unit “μm” or “mil ” optional.

● Coupling state display.

● Shut down manually or automatically.

● Low battery voltage indication.

Ⅳ. Specifications

● The meter has been designed according to EC directive: 89/336/EEC.

● Digital display: 4 digitals.

● Measurement range: 0~1200μm.

- Resolution: 1μm .
- Accuracy: ±(3%H+2μm).
- Measurement rate: 0.8 second.
- display units: μm or mil
- Critical thickness of metallic base: 1mm.
- Minimum thickness of metallic base: 0.2mm.
- Minimum curvature radius: protruding 1.5mm, concave 6mm.
- Probe diameter: 13mm.
- Power supply: 1.5V AAA * 3.
- Operating environment:

  Temperature 0—40 ℃

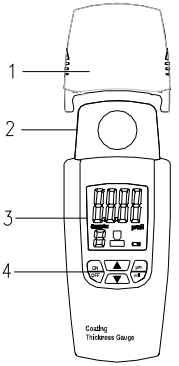
  Humidity：20%～80%

  Without strong magnetic environment.
- Storage temperature: -40 ~ +70℃.
- Dimensions: 165mm (L)×60mm (W)×30mm (H) mm.
- Weight: about 190g.
- Accessories: probe, standard thickness pieces(5) , martensite stainless steel block, operating manual, batteries.

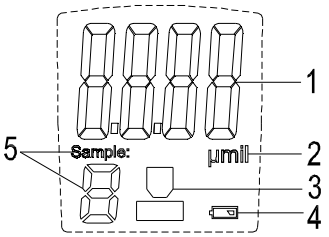
Ⅴ. Names of parts

I Instrument Familiarization

1. Sensor cover
2. Thickness sensor
3. LCD display
4. Function key



I LCD Display



The meaning of the symbols represented by the following：

1. Display zone
2. Thickness units
3. Coupling sign
4. Indication to low voltage of the batteries
5. Number of standard thickness piece

Ⅵ. Operation instruction

1. Press button “**ON/OFF**” , the meter displays 0. Waiting for five minutes or more to get the meter steady.
2. Put the probe on the coating to be tested, Press it gently and don’t dither. When a coupling sign appears, the thickness of the coating displays. If coupling is not good or the probe dithering, the coupling sign and thickness don’t display.
3. When taking the probe out from the coating, the coupling symbol disappears, but thickness keeps displaying.

4. Press button **μm/mil**, thickness unit “μm” changes into “mil” or contrarily.

5. To turn off :

When the meter is working, pressing button **ON/OFF** will get shutdown immediately.

6. Automatic shutdown

When the meter is working, and stop to press button or stop to measure for fifteen minutes, shutdown will occur automatically.

Ⅶ. Calibrating the meter

1. The meter is based on the principle of electromagnetic induction. Before leaving the factory, it had been calibrated on the martensite stainless steel block that is as an accessory.

2. When the base material to be tested is different from the martensite stainless steel block in the accessories, user must calibrate the meter on the material to be tested.

3. When changing a new probe, or the probe is abrased or the meter is used for a long time, user need to calibrate it.

4. The method of calibrating is following：

a. Press **μm/mil** then press **ON/OFF** buttons simultaneity. The main display section of the meter is 0000, the lower left quarter is **sample 0.** It indicates thickness 0 will be calibrated. Waiting for five minutes or more to get the meter steady. Put the probe directly on the metallic matrix without coating and press it for two seconds no dithering. Then press button **μm/mil** to perform calibrating of thickness 0 (the probe keeps to press no dithering when **Adjusting**) . The main display section changes into 50μm, the lower left quarter changes into **sample 1**. It indicates that the thickness of sample 1 will be calibrated. The probe can be taken up.

b. Accoding to the thickness marking on the sample

1,press button ▲ or ▼ to change digitals of the main display section untill it is equal to the value of the sample 1. Lay the sample 1 on the metallic matrix, then put the probe on them and press it for two senconds gently, then press button **μm/mil** to do calibrating of the thickness of sample 1 (the probe keeps to press no dithering when **Adjusting**). The main display section changes into 125μm, the lower left quarter changes into **sample 2**. It indicates the thickness of sample 2 will be calibrated. The probe can be taken up.

c. Imitating the step **b** , perform calibrating of the thickness of sample 2, sample 3, sample 4, sample 5. At last, **sample 6** displays. The thickness of sample 6 is equal to the sum of sample 3+ sample 5, press button ▲ or ▼ to change digitals of the main display section untill it is equal to the sum of sample 3+ sample 5. Lap over the sample 3 and sample 5, place

them on the metallic matrix, than put the probe on them and press it for two seconds gently, then press button **μm/mil** to perform calibrating of the thickness of sample 6 (the probe keeps to press no dithering when **Adjusting**). The meter displays OFF finally.

d. Press **ON/OFF** button to end calibrating.

Ⅷ. Notices

1. When calibrating on a metallic matrix and measurement on another kind metallic matrix, the error of measurement might be more than the rating value. A material dealt with heat treatment or cold working, its magnetism might change, calibrating had best dose on a workpiece that don't smear any coating.
2. The meter can not measure on the base that is non-magnetic material, such as copper, aluminum etc.

3. When power on, waiting for five minutes or more to get the meter steady, then calibrating or measuring to insure its accuracy.
4. When measuring on a thin base under 1mm, calibrate the meter on the material with the same thickness. When the basal thickness is more than 1mm, a change of the basal thickness does not affect measurement.
5. Don't calibrate or measure on the fringe of a workpiece.
6. When calibrating on a plane, measurement is on a curved surface, the error might be more than the rating value.
7. Don't press the probe with big force to avoid that the **Sample** distortion brings an error.
8. The **Samples** or the coating of a workpiece is not entirety even, might increase display error.
9. In a strong magnetic environment, measurement

might be disturbed.

10. When battery voltage is too low to work, a battery symbol appears on the screen. It reminds you to change new batteries.
11. When you do not use the meter for a long time, please take out batteries to avoid damaging the meter by electrolyte.
12. Don't store the meter in a high temperature or wet place.
13. After power off, to turn power on again, wait for five seconds.

Ⅸ. Maintenance

1. CLEANING INSTRUCTIONS

The meter may be wiped down with a wet sponge or cloth using a mild water based detergent or anti-bacterial soap and rinsed under a gentle stream of cold water.

NOTE:

This unit is not designed for complete submersion or

washing in water.

2. Mounting battery and probe

Remove the battery cover on the back and put in three 1.5V AAA batteries according to the mark on the shell to insure putting batteries in correctly, then close the battery cover. Insert the plug of the probe into a socket on the top of the meter.