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**ISO-1000F
COATING THICKNESS GAGE
OPERATION MANUAL**



Overview

This compact, handy pocket gauge is designed for non-destructive, fast and precise coating thickness measurement. The principal applications lie in the field of corrosion protection. It is ideal for manufactures and their customers, for offices and specialist advisers, for paint shops and electroplaters, for the chemical, automobile, shipbuilding and aircraft industries and for light and heavy engineering.

- ◆ The gauge is applied to measuring thickness of non-magnetic coating on magnetic metal substrate.
- ◆ Two measuring modes: single or continuous, changeable.
- ◆ Two work modes: direct or group, changeable.
- ◆ High precision mode: multiple measurements and automatically data filtering method to reduce disturbance of measure results.
- ◆ Temperature compensation: compensate the measurement distortion caused by the drifting of temperature.
- ◆ Give five statistical values: average, maximum, minimum, measure number, and standard deviation.
- ◆ Two calibration methods can be applied to the gauge; And the system error of the probe can be corrected with the basic probe calibration method.
- ◆ Data storage: up to 500 measurements storage.
- ◆ Set boundary: alarm while measurements out of boundary.
- ◆ Battery information indicates the rest capacity of the battery.
- ◆ Beep prompting.
- ◆ Auto power off function to conserve battery life.

Description

1 Structure:



- Power/Backlight
- Menu/Back
- Probe select (only F is available)
- Up
- Down
- Confirm
- File/Statistics
- Delete
- Calibration

2 Working principle:

The probe and the magnetic metal substrate will form a closed magnetic circuit when probe contacting with the coating; the magnetic resistance of closed magnetic circuit varies due to the existing of non-magnetic coating. The thickness of the coating can be measured through the variation of magnetic resistance. F probes work on the magnetic induction principle and should be used for non-magnetic coatings such as aluminum, chrome, copper, zinc, paint and varnish, enamel, rubber etc., on an iron or steel substrate; they are also suitable for alloyed and hardened magnetic steel.

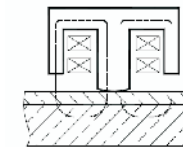
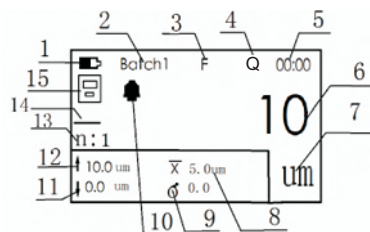


Figure1.1 Principle of magnetic induction method

3 Specification:

- ◆ Measuring range: 0~1250μm
- ◆ Accuracy: $\pm(3\%L+1)\mu\text{m}$, L is the measuring thickness in μm
- ◆ repeatability: $\pm 1\mu\text{m}$
- ◆ Memory: 500
- ◆ Resolution: 0.1μm(range<50μm), 1μm(range > 50μm)

4 screen:



1 Battery mark 2 File name 3 Probe type 4 Quick measure 5 Time 6 Result
7 Unit 8 Mean value 9 Standard DEV. 10 Alarm 11 Minimum 12 Maximum
13 Result number 14 Coupling mark 15 Memory mark

Measurement

- 1 Preparing the measuring material.
- 2 Power on: Put the probe into an open space, and press the power key.
- 3 Check the battery information, and change the battery if necessary.
- 4 Calibrate the gauge if necessary according to the calibration method.
- 5 Measuring: Put the probe close to the measuring material perpendicularly and rapidly, and press the protecting jacket lightly to keep the contact closely. Then the thickness will be shown on the LCD screen accompany with a beep indication, and the measurement can be repeat after bringing up the probe.

Calibration

We recommend the customer to do calibration on the actual workpiece surface without coating, and then measure the workpiece with coating. This will make the measurement more accurate.

1 Zero calibration:

For the measurement on different plate, zero calibration must be performed. Deviation will appear if the feature of calibration plate and measuring material is different.

One of the following two methods could be used for zero calibration:

Calibrate on the plate or surface without coating:

- a) Measure on the plate, and the screen display <××μm>.
- b) Press the key before bringing up the probe, and the screen display <0μm>.

Repeat step a~b will achieve higher accuracy.

Calibrate on the foil:

- a) Press the key in main interface to enter “Zero calibration” mode.
 - b) Measure on a standard foil, and the screen display <×××μm>.
 - c) Move away the probe when the value is stable, press up and down keys to correct the thickness value.
 - d) Press the key to confirm the calibration.
- Repeat step a~d will achieve higher accuracy.

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Basic calibration for the probe:

Basic calibration should be performed for the following situation:

- a) Change the probe.
- b) The header of the probe is wear.
- c) The probe has been repaired.
- d) Special usage.

Operation steps:

- a) Hold the Up key during power on the gage until the screen shows “INFINITY:”.
- b) Calibrate infinity point: Put the probe away from the plate, and then press the key to enter next step.
- c) Calibrate zero point: Put the probe on the ZERO plate, and then press the key to enter next step.
- d) Calibrate with 5 foils: Use up and down keys to adjust the standard value, then put the probe on it and press to next step.
- e) After all 5 foils are all calibrated the screen will show “PASS” on the bottom, now press back to initial interface.