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## **OPERATION MANUAL**

**ISO-1250F and ISO-1250N  
Coating Thickness Gauge**



## 1. FEATURES

- It meets the standards of both ISO2178 and ISO-2361 as well as DIN, ASTM and BS.Suitable for the laboratory and for use in harsh field conditions.
- The F probe in ISO-1250F measure the thickness of nonmagnetic materials (e.g. paint, plastic, porcelain enamel, copper, zinc, aluminum, chrome etc.) on magnetic materials (e.g. steel, iron, nickel etc.) . Often used measure the thickness of galvanizing layer, lacquer layer, porcelain enameler, copper tile, aluminum tile, some alloy tile, paper etc, balck oxided layer.
- The N probes in ISO-1250N measure the thickness of nonmagnetic coatings on non-magnetic metals. It is used on anodizing, varnish, paint, enamel, plastic coatings, powder, etc. applied to aluminum, brass, non-magnetic stainless steel, etc.
- Manual or automatic shut down.
- Two measurement mode: single and continuous
- Wide measuring range and high resolution.
- Metric/Imperial conversion.
- Two points calibration mode for high accuracy
- With tolerance and alarm setting

## 2. SPECIFICATIONS

Display : LCD

Range: 0~1500 um/0~60mil

Resolution: 1 um

Accuracy: ISO-1250F:  $\pm(1\%L+1)$

ISO-1250N:  $\pm(1\%L+1.5)$

L is the thickness to be measured

Calibration mode: two points calibration mode and one point calibration mode

Measuring mode: continuous and single

Memory: 500

Operating condition: Temp. 0~50 , Humidity<80%

Power supply: 9V battery

Dimension: 126×65×27mm

Weight: 300g

## 3. PARTS DESCRIPTIONS



3-1 Power Key

3-2 Zero Key

3-3 Delete Key

3-4 Plus Key

3-5 Menu Key

3-6 ESC key

3-7 Backlight key

3-8 Minus Key

3-9 Probe

3-10 Battery cover



## 4. MEASURING PROCEDURE

Open the battery cover place the battery notice the polarity;

- 4.1 Connect the probe to the gauge.
- 4.2 Press the power key (3-6) to switch on the gauge and '0' displays on the Display (3-2). The gauge will restore the last measurement, with a symbol 'Fe' or 'NFe' indicating on the Display.
- 4.3 Place the probe (3-1) onto a coating layer to be measured. The reading on the Display is the thickness of the coating layer. The reading can be corrected by pressing the plus key (3-4) or minus key (3-5) while the probe is away from the workpiece.
- 4.4 To take the next measurement, just lift the probe (3-1) to more than 1 centimeter and then repeat the step 4.3.
- 4.5 If suspecting the accuracy of measurement, you should calibrate the gauge before taking the measurements. For the calibration procedures, please refer to the calibration part 5.
- 4.6 The gauge can be switched off by pressing the Power key (3-6). On the other side, the gauge will power itself off about 2 minutes after the last operation.

## 5. CALIBRATION


### 5.1 Zero adjustment

Place the probe (3-1) on the substrate steadily. Press the zero key (3-3) and '0' will be on the Display before lifting the probe. **If pressing the ZERO key but the probe is not placed on the substrate, the zero adjustment is invalid.**

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- 5.2 Select an appropriate calibration foil according to your measurement range.
- 5.3 Place the standard foil selected onto the substrate or the uncoated standard.
- 5.4 Place the probe (3-1) mildly onto the standard foil and lift. The reading on the display is the value measured. The displayed reading can be corrected by pressing the plus key (3-4) or minus key (3-5) while the probe is away from the workpiece.
- 5.5 Repeat step 5.4 until the result is correct.

## 6. BATTERY REPLACEMENT

- 6.1 When it is necessary to replace the battery, the battery symbol '  ' will appear on the Display.
- 6.2 Slide the Battery Cover ( 3-8) away from the instrument and remove the batteries.
- 6.3 Install the batteries (4x1.5v AAA/UM-4) correctly into the case.
- 6.4 If the instrument is not to be used for any extended period, remove batteries.

## 7. CONSIDERATIONS

- 7.1 In order to weaken the influence of the measured material on the accuracy of measurement, it is recommended that the calibrations should be done on the uncoated material to be measured.
- 7.2 Probes will eventually wear. Probe life will depend on the number of measurements taken and how abrasive the coating is. Replacement of a probe can be fitted by qualified persons only.

## 8. RESTORE FACTORY SETTINGS

### 8.1 When to restore?

It is recommended to restore factory settings in the one of following cases.

- A. The gauge does not measure any more.
- B. Measurement accuracy is degraded caused by environmental conditions changed greatly.
- C. Replacement of a new probe.

### 8.2 How to restore?

Restore factory settings includes 'Fe' setting and 'NFe' setting. You can restore one of them or both of them respectively. Please follow procedures below to restore factory settings.

8.2.1 Please note the symbol on the display is 'Fe' or 'NFe'. If 'Fe' is on the display, the operation below is restoring the factory setting for 'Fe' type. and If 'NFe' is on the display, the operation below is restoring the factory setting for 'NFe' type.

8.2.2 Depress Power key and not release it till 'CAL' appears on the Display. It is about 5 seconds from starting depressing Power key.

8.2.3 when F:H or NF:H is on Display, lift the probe to more than 5 centimeters. Then press the Zero key again and the gauge return to measurement state. The factory setting is restored. Remember, to restore factory setting should be done within 6 seconds at every stage. Or the gauge will quit itself and restoration is invalid.

## 9. NOTES

10.1 Settings includes restoring factory setting, unit setting, S/C setting, which should be done within 6 seconds at every stage. or the gauge will quit itself and keep its status before.

10.2 It is strongly recommended that no changes should be made to **the value of Ln** (controlled by power key, It takes about 11 seconds from starting depressing Power key. Its value can be changed by plus/minus key after displaying Ln and releasing the power key. Store its value and quit by pressing Zero key.) **Which**

**will seriously affect the accuracy. Its value can be adjusted by professional persons only under the cases of** replacing a new Probe or making the gauge more accurate. Generally, the larger the value of Ln, the smaller the reading on a same thickness. A little variation of value of Ln will cause a great change in reading at high end (e.g. at 500 um/20mil). The rules to adjust the value of Ln are as follow:

- A. Reading at low end can be adjusted to the exact value by the plus or minus key.
- B. To enlarge the Ln if readings at low end ( e.g. at 51 um) is ok but reading at high end (e.g. at 432um) is too large. On the contrary, to decrease the Ln if reading at low end (e.g. at 51um ) is ok but reading at high end (e.g. at 432um) is too small .
- C. Repeat procedures from A to B till the readings on the every standard foil are satisfying the accuracy.