INSIZE

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OPERATION MANUAL

Mode ISO-1250B
Coating Thickness Gauge

INSIZE

1. FEATURES

- It meets the standards of bothISO-2178 and ISO-2361 as well as DIN, ASTM and BS.Suitable for the laboratry and for use in harsh field conditions.
- The F probe measure the tjickness of nonmagnetic materials (e.g. paint, 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, some alloy tile, paper etc, balck oxided layer.
- The N probe measure the thickness of nonmagnetic coatings on non-magnetic matals. It is used on anodizing, varnish, paint, enamel, plastic coating, 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

Calibration mode: two poins 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

8.2 Print function

a) Press "MENU", Press"↑" or "↓", select "Function";

b) Press "MENU", Press "↑" or"↓", select "Print File"、"Print Stats"、"Print all", Press "MENU";

c) Press two "ESC",OK.

| Delect All |
| Print File |
| Print Stats |
| **Print All** |

9. DATA TRANSFER TO PC USING

The serial interface parameter of the PC must be set as follows:

Baud rate: 9600

Data bits: 8

Stop bit: 1

a) Press "MENU", Press "↑" or "↓", select "Function";

b) Press"MENU", enter "Function" press"↑" or "↓", select "Send Date";

c) Press"MENU", in direct way, sent Statistical values and single values; In APPL way, sent statistical values and single values in this APPL;

d) Press two"ESC", OK.

| **System Setup** |
| Limits |
| Function |
| View |

| Print File |
| Print Stats |
| Print All |
| **Send Date** |

Codel	ISO-P 400F	ISO-P 1500F	ISO-P 10KF	ISO-P 400N	ISO-P 1500N
Resolution	0.1µm/ 0.01mil	1µm/ 0.01mil	10µm/1mil	0.1µm/ 0.01mil	1µm/ 0.01mil
Accuracy (Lis the measuring thickness in µm)	(1%L+0.7) µm	(1%L+1) µm	(2%L+10) µm	(1%L+0.7) µm	(1%L+1.5) µm
Measuring range	0-400µm/ 0-16mil	0-1500µm/ 0-60mil	0-10µm/ 0-400mil	0-400µm/ 0-16mil	0-1500µm/ 0-60mil
Min. area to be measured	Ø3mm	Ø7mm	Ø40mm	Ø4mm	Ø7mm
Min. thickness of subtraste material	0.3mm	0.5mm	2mm	0.2mm	0.3mm
Min. radius of rod to be measured	1mm	1.5mm	10mm	1.5mm	3mm

3. PARTS DESCRIPTIONS

3-1 Power Key   3-6 ESC Key

3-2 Zero Key   3-7 Backlight Key

3-3 Delete Key   3-8 Minus Key

3-4 Plus Key   3-9 Probe Key

3-5 Menu Key   3-10 Battery Key
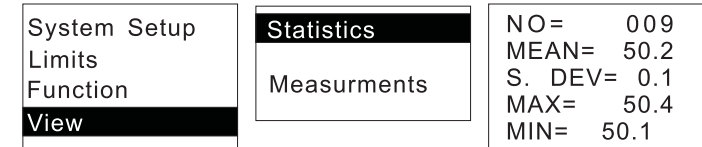
4. LCD DISPLAY DESCRIPTION
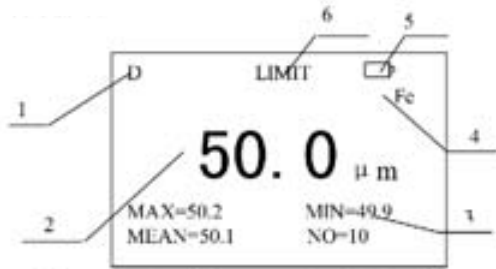
1. working mode   2. thickness value   3. statistics   4. probe

5. lower voltage   6. limit

5. MEASURING PROCEDURE

5.1 Open the battery cover(3-10), place the battery, notic the polarity

5.2 Connect the probe to the gauge.

5.3 Press the power key(3-9) to swich on the gauge and '0' displays on the Display. The gauge will restore the last measurement, with a symbol 'Fe' or 'NFe' indicating on the Display.

5.4 Place the probe(3-9) onto a coating layer to be measured. The reading on the Display is the tjickness of the coating layer.

| System Setup
Limits
Function
View | **Statistics**

Measurments | NO=   009
MEAN=   50.2
S. DEV= 0.1
MAX=   50.4
MIN=   50.1 |

7.10 Delete

     7.10.1 Delete single value

         In any working way, press "Clear", delete the end measuring value.

     7.10.2 Delete measuring values or all values

         In any working way, all measuring values are delete.

         a) Press"MENU",Press"↑" or "↓",select "Function";

         b) Press "MENU", enter "Function"; Press "↑" or "↓", select "delete File" or "delete All";

         c) Press "MENU", display "Press[MENU] to comfirm or , Press[ESC] to cancel" Press"MENU", all measuring values are delete;
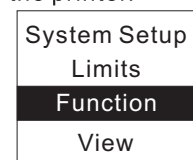
         d) Press "ESC".

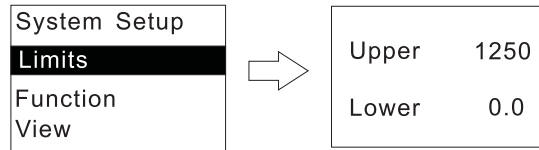| System Setup
Limits
Function
View | Delete File

Delete All |

8. PRINT

8.1   Preparations for Print

The infrared data transmission from instrument to a printer;

The infrared adapter must be connected to the printer.

Press"ON/OFF";

The printer must be set as follows:

Baud rate: 9600

Data bits: 8

Stop bit: 1

| System Setup
Limits
Function
View |

a) Press"MENU", Press " ↑ "or " ↓ ",select "Limits" ;

b) Press"MENU", enter "Limits";

c) Press"MENU", select "Upper" or "Lower", Press" ↑ " or " ↓ "
until the numerical value for the upper limit value or lower
limit value is set.

d) Press "ESC"

```
┌─────────────────┐        ┌─────────────────┐
│ System  Setup   │        │                 │
│ ▌Limits▌        │   ⇨    │ Upper    1250   │
│ Function        │        │                 │
│ View            │        │ Lower     0.0   │
└─────────────────┘        └─────────────────┘
```

7.7 Backlight setting

Press " 💡 " shut on or shut off backlight.

7.8 Statistics

The instrument is provided with statistics. This means that the
statistics values are re-calculated and diaplayed in the two
bottom lines after every measurement. The statistics values
calculated by instrument are:

No : Number of measured values
Mean : Average of measured values
S. DEV : Standard deviation
Max : Maximum single value of the measurement series
Min : Minimum single value of the measurement series

⊙ In direct way, a total of max. 100 readings can be
stored. The new reading instead of the first reading.

⊙ In APPL way, the statistics values calculated during
this APPL.

7.9 View

Display of measuring values and statistical values

a) Press"MENU", Press " ↑ "or " ↓ ", select "View" ;

b) Press "MENU", Press " ↑ " or " ↓ ", select display
measurements or statistics

c) Press"MENU", select "Statistics" , it can be displayed:

5.5 If you chose single measuring mode(see 7.2). To take the next
measurement, just life the pribe(3-9) to more than 1 centimeter
and then repeat the step 4.3.

5.6 If you want to give high accuracy of measurement, you should
calibrate the gauge before taking the measurements. For the
calibration procedures, please refer to the calibration part6.

5.7 The gauge can be switched off by pressing the Power key(3-1).
On the other side, the gague will power itself off about 2
minutes after the last operation.

6. CALIBRATION

6.1 One point calibration

Place the probe(3-9)on the subatrate steadily. Press the zero
key(3-2) and '0' will be on the Display before lifting the probe.
**Note:If pressing the ZERO key but the probe is not placed
on the substrate, the zero adujustment is invlid.**

6.2 Two points calibration

6.2.1 Make zero calibration as part6.1

6.2.2 Select an appropriate calibration foil according to your
measurement range

6.2.3 Place the standard foil selested onto the substeate or the
uncoated standard

6.2.4 Place the probe(3-1)midly on the standard foil and lift.
Theredading on the display is the value measured. The
reading can be corrected by pressing the plus key(3-8)
while the probe is away from minusdisplayed key(3-4)
orthe workpiece.

7.FUNCTIONS

7.1 Working Mode

The instrument has two working modes: direct and APPL

Direct: It can store 100 measured values. If the measured value is more than 100. The latest value instead of the fist One

APPL: It can store 100 measured values. If the measured value is more than 100. The values can be displayed, but it is not stored

Converting two working mode :

a) When the insrument is swiched on.Direct will be automatically displayed.
   Press"MENU" setup system appears;

b) Press"MENU";

c) Press" ↑ " or " ↓ ", select "working";

d) Press"MENU", "working" setting.

```
System Setup
Limits
Function
View
```

```
Meas:        Single
Working:     Direct
Unit:          μ m
Stats:         off
```

```
Meas:        Single
Working:      *F2
Unit:          μ m
Print          off
```

e）Press "ESC".

7.2 Measuring Mode

There are two measuring mode:single and continuous

- Single-once the probe contacts the workpiece, a buzz will give out, and it will diaplay a measurement.
- Continuous-the probe is measuring continually, display values continually.

a) Press"MENU", "System Setup" options appears;

b) Press"MENU", select "Meas";

c) Press"MENU", select "Single" or "Cont";

d) Press "ESC".

```
System Setup
Limits
Function
View
```

```
Meas:        Single
Working:     Direct
Unit:          μ m
Print          off
```

7.3 Units（Metric <=> Inch）

a) Press"MENU", "System setup" options appears;

b) Press"MENU", Press " ↑ " or " ↓ " , select "unit";

c) Press"MENU", select "um"; or "mils";

d) Press "ESC".

```
System Setup
Limits
Function
View
```

```
Meas:        Single
Working:     Direct
Unit:          μ m
Print          off
```

7.4 Print values

a) Press"MENU", "System setup" options appears;

b) Press"MENU", Press " ↑ " or " ↓ " , select "print";

c) Press"MENU", select "ON"; or "OFF";

d) Press "ESC".

```
System Setup
Limits
Function
View
```

```
Meas:        Single
Working:     Direct
Unit:          μ m
Print          off
```

7.5 Statistical values

a) Press"MENU", Select "System setup";

b) Press"MENU", Press " ↑ "or " ↓ ", select "stat" setting

c) Press"MENU", select "stats:on" or "stats:off";

d) Press"ESC".

```
System Setup
Limits
Function
View
```

```
Working:     Direct
Unit:          μ m
Print          off
Stats:         off
```

7.6 Limit value setting

To monitor your measured values, you can set an upper and a lower limit value. If the limit value is exceeded or if it is not reached, and a warning note will appear on the diaplay.