Coating Thickness Tester

User Manual

Please read this manual before switching the unit on.
Important safety information insi

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1.General information

The coating thickness gauges work either on the magnetic induction principle or on the eddy current principle, depending on the type of probe used. You can select the type of probe via MENU system, or it will work automatically.

2. Features

- Measured Coatings: Non-magnetic coatings (e.g.paint, zinc)on steel; Insulating coatings(e.g. paint, anodizing coatings)on no-ferrous metals
- Operating with MENU easily
- Memory for 1500 readings
- Delete single readings and all group readings easily
- Error indication
- Data transferred to PC via USB for analysis
- Disable Auto-Power-off function via MENU setting

2.1 Application

- This compact and handy gauge is designed for non-destructive, fast and precise coating thickness measurements. The principal applications lie in the field of corrosion protection. It is ideal for manufacturers 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 gauge is suitable for laboratory, workshop and outdoor use.
- The probe can work on both principles, magnetic induction and on the eddy current principle. One probe only is required for coating measurement both on ferrous and non-ferrous metal substrates. It is adaptable to specific tasks: i.e. they can be used on special geometries or on materials with special properties.

2.2 Description of the Gauge

- For measurement on steel substrates, the gauge works on the magnetic induction principle, for measurement on non-ferrous metal substrates, it works on the eddy current principle.
- Measured values and user information are shown on LCD. The display with backlight ensures easy reading of screen data in dark conditions.

2.3 Supply Schedule

• Gauge with two AAA 1.5V batteries, plastics carrying case, operating instructions (English), steel and aluminum substrate, and standard flake for calibration.

2.4 Probe

The Probe systems are spring-mounted in the probe sleeve. This ensures safe and stable positioning of the probe and constant contact pressure.

A V-groove in the sleeve of the probes facilitates reliable readings on small cylindrical parts. The hemispherical tip of the probe is made of hard and durable material. Hold the probe by the spring mounted sleeve and put on measuring object.

3. Specifications

Sensor probe	F	N
Working principle	Magnetic induction	Eddy current principle
Measuring range	0~1350μm	0~1350μm
	0~53.1mils	0~53.1mils
Guaranteed tolerance (of reading)	0~1000um ±(2.5%+2um)	0~1000um ±(2.5%+2um)
	1000~1350um(±3.5%)	1000~1350um(±3.5%)
	0~39.3mils (±2%±0.08 mils)	0~39.3mils (±2%±0.08mils)
	39.3~53.1mils(±3.5)	39.3~53.1mils(±3.5)
Precision	0~100um(0.1um)	0~100um(0.1um)
	100um~1000um(1um)	100um~1000um(1um)
	1000um~1350um (0.01mm)	1000um~1350um (0.01mm)
	0~10mils(0.01mils)	0~10mils(0.01mils)
	10~53.1mils(0.1mils)	10~53.1mils(0.1mils)
Minimum curvature radius	1.5mm	3mm
Diameter of Minimum area	7mm	5mm
Minimum measurable thickness	0.5mm	0.3mm
Overload display	---	---
Working temperature	0℃~40℃(32℉~104℉)	
Working relative humidity	20%~90%	

3.1 Front View

1- LCD display
2- Select key: For ON/OFF, select and ok
3- Up key: For upward selection and working mode switch
4- Clear Key: Calibration Zone of the FE and NFE
5- Back Key: For return or delete the last measured data
6- Down key: For downward selection or working mode switch
7- Battery cover

3.2 LCD Display

1- Working mode
2- Measured data quantity in the working mode
3- Auto measure mode
4- Ferrous or No-ferrous metals being measured. It will change automatically in the Auto measure mode
5- Battery indication
6- Measure data
7- Unit
8- Delete data, press Back button to delete the current data

4. Ready to start

4.1 Power Supply

For power on, please press and hold button. If no LCD display: please check if the battery is correctly installed or it is in low battery.

Display: Please replace battery immediately.

Note that the gauge will make faulty measurements if the voltage is very low.

Note: When power on, please away from any metal at least 10 cm above Before each measurement, zero calibration is recommended.

4.2 Replacing the Battery

- Power off the meter.
- Open the battery cover.
- Remove battery.
- Insert new battery.
- Close the battery cover.

Caution: Make sure the anode and cathode are correctly positioned.

4.3 Menu System and Basic Settings

Press ⏻ to power on; the gauge will work in measuring mode. Press Select button into MENU mode. See following MENU system arrangement:

4.3.1 Function and operation instruction

Select Working mode

Working mode: There are 31 working modes in this gauge. Measure data would not be stored in the gauge in Group0 measure mode.

In the other 30 working modes, 30 measured data can be stored in each mode in cycle.

A: Press Select button to enter the menu
B: Press Up/down button to select working mode
C: Press Select button to enter working mode
D: Press up/down button to select working mode
E: Press Select button for OK.

Select measure mode (Probe)

The probe can work in three modes:

AUTO: The probe can automatically select the working mode. When placed on steel (magnetic substrates), it will work in magnetic induction principle. When placed on no-ferrous metals, it will work in eddy current principle.

Fe: The probe works in magnetic induction principle.

No-Fe: The probe works in eddy current principle.

A: Press Select button to enter the menu
B: Press Up/down button to select working mode
C: Press Select button to enter working mode
D: Press up/down button to select working mode
E: Press Select button for OK.

5. Settings

5.1 Unit setting

Select unit

A: Press Select button to enter the menu
B: Press up/down button to select the setting
C: Press Select button to enter the setting
D: Press up/down button to select Unit
E: Press Select button to enter
F: Press up/down button to select
G: Press Select button for ok

5.2 Backlight setting

Adjust the brightness of the backlight.

A: Press Select button to enter the menu
B: Press up/down button to select the setting
C: Press Select button to enter the setting
D: Press up/down button to select backlight
E: Press Select button to enter
F: Press up/down button to adjust the brightness of the backlight
G: Press Back button to return.

5.3 Auto power off

You can disable Auto-power-off via MENU system or the gauge will power off automatically in about 3 minutes if no measurement or operation.

A: Press Select button to enter the menu
B: Press up/down button to select the setting
C: Press Select button to enter the setting
D: Press up/down button to select Auto-power-off
E: Press Select button to enter
F: Press up/down button to select
G: Press Select button for ok

5.4 Adjust gray scale (contrast)

The grayscale adjustment: dot matrix LCD display may not be good in different temperature & humidity, than you can adjust gray scale to get good LCD display.

A: Press Select button to enter the menu
B: Press up/down button to select the setting
C: Press Select button to enter the setting
D: Press up/down button to select gray scale
E: Press Select button to enter
F: Press up/down button to adjust gray scale
G: Press Select button for ok

6. System information

System version number

A: Press Select button to enter the menu
B: Press up/down button to select the setting
C: Press Select button to enter the setting
D: Press up/down button to select information
E: Press Select button to enter
F: View the system information, then press Back button to return.

Data View

View the stored measured data in each mode.
All-delete: Delete all measured data in group.
A: Press Select button to enter the menu
B: Press up/down button to select view
C: Press Select button to enter view
D: Press up/down button to select working mode
E: Press Select button to enter
F: Press up/down button to view each data
G: Press Back button to return or press Select button to delete this group data.

7. Calibration and Measurement

The gauge can calibrate Zero-point of Fe or Non-Fe, or delete wrong calibrated zero-point of Fe or Non-Fe.

It suggested that zero-point be calibrated before use.

8. Zero-point calibration of Fe or Non-Fe

you can press and hold the ZERO button to Zero-point calibration of Fe or Non-Fe in measuring mode

In the Fe mode, Zero-point calibration of Fe.

In the Non-Fe mode, Zero-point calibration of Non-Fe (Less than 50UM is effective)

9. Delete Fe or Non-Fe Zero-point

A: Press Select button to enter the menu
B: Press up/down button to select calibration
C: Press Select button to enter calibration
D: Press up/down button to delete zero-point of Fe or Non-Fe
E: Press Select button for Ok
F: Press Back button to return

10.Delete Functions

In MENU system, you can find following function:

A: Delete current data: in measurement interface, you can delete the last data by pressing Back button.
B: Delete all data: Enter menu-view; you can delete all data and statistics of the Current
C: Delete Group data: Enter menu-view-group data; you can delete this group data by pressing Select button

11. Trouble Shooting

The following list of error messages explains how to identify and eliminate faults.

Err1: Fe probe fault
Err2: Non-Fe probe fault
Err3: Both probes.
Err4: Fe probe fault
Err5: Non-Fe probe fault

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