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**ISO-2000FN
COATING THICKNESS GAGE
OPERATION MANUAL**



Maintenance

- 1 Accurate measurements can be obtained only by taking correct care of the gauge. Therefore avoid strong shaking, penetration of dust, dirt, chemicals, aggressive substances and water.
- 2 Do not expose the gauge to extremes of temperature, for example direct sunlight or strong frost. It could influence measure results. The gauge is water-resistant, what corresponds to IP65 norm. The housing is resistant against most solvents.
- 3 The probe should be regularly controlled. Remove dirt, for example rests of the paint, from the measure head. It is advisable to replace batteries, when you don't use the gauge for a long time. This way you avoid damage owing to low batteries.
- 4 By disturbances of the gauge or the probe, please don't attempt to repair it by yourself. Our service department will provide expert service quickly and inexpensively.

Technical specification

Measuring	magnetic induction probe (Fe)	0~2000µm
range	eddy current probe (NFe)	0~800µm
Accuracy	±(1.5+2%L)µm L is measuring thickness in µm	
Resolution	0.1 µm (range <100µm)	
	1 µm (range 100~10 00µm)	
	10 µm (range ≥ 1000µm)	
Repeatability	1 µm (range 0~10 00µm)	
	10 µm (range ≥ 1000µm)	
Measuring mode	continuous or single	
Calibration mode	four points calibration	
Minimum substrate thickness	magnetic induction probe (Fe): 0.2mm eddy current probe (NFe): 0.05 mm	
Minimum measuring area	5x5mm, calibration should be made on work-piece without coating, test stand (optional) position for calibration and measurement is recommended in order to have same	
Power supply	2x1.5V AA batteries	
Dimension of main unit	122x65x22mm	
Weight of main unit	150g	

Standard delivery

Main unit	1pc
Zero calibration block for Fe probe	1pc
Zero calibration block for NFe probe	1pc
Standard foil	7pcs
Battery (Fe)	2pcs

Optional accessory

Magnetic induction probe (Fe)	ISO-2000FN-FE
Eddy current probe (NFe)	ISO-2000FN-NFE
Test stand	ISO-2000FN-STAND

Product introduction

Small, handy, robust and easy to handle - these are attributes of the coating thickness gauge. It can suitable for small surfaces, concave or convex surfaces after calibrated. It is designed as a multifunctional instrument and can be used both on magnetic (Fe) and non-magnetic (Nfe) metallic bases.

- ◆ Magnetic induction probe (Fe) is to measure the thickness of non-magnetic coating on magnetic substrate.
Substrate: iron, steel, magnetic stainless steel (does not include non-magnetic stainless steel)
Coating: zinc, copper, chrome-tin, plastic powder, paint (does not include nickel)
- ◆ Eddy current probe (NFe) is to measure the thickness of non-conductive coating on non-magnetic metal substrate.
Substrate: copper, aluminum, zinc, non-magnetic stainless steel
Coating: plastic powder, paint, anodizing

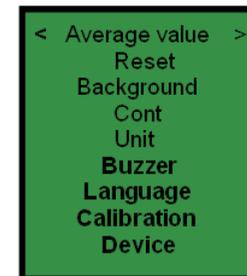
Key function



- | | |
|---------------------------|-------------------|
| 1. Probe connector | 8. Zero Button |
| 2. Probe type | 9. Down Button |
| 3. Number of measurements | 10. Enter Button |
| 4. Back Button | 11. Right Button |
| 5. Up Button | 12. On/Off Button |
| 6. Left Button | 13. Average value |
| 7. Menu Button | 14. Measurement |

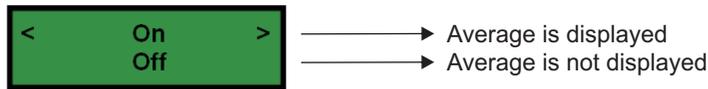
Basic operations

- 1 Switch on
Switch on the gauge with the button. It appears a designation and the last measured value. By placing the probe on the coat, you can directly start your measurements. The probe is plugged on the upper part of the gauge and fixed tightly. When there is no probe, the display shows an indication "No probe connected" and additionally you hear a "Beep".
- 2 Switch off automatically
The coating thickness gauge also switches off automatically after approx three minutes.
- 3 Menu function
The coating thickness gauge has some particular functions, which are stored in the menu. With the "MENU" key you call the menu, with "Down" or "Up" key you move the cursor signs <> and choose the particular function and with ENTER key you call the function. With "Exit" key you leave the menu and return to measuring mode.



1. Average value

The gauge calculates with every measurement (without the storing of single measurement) the average value. If this function is set to "On", this value will be displayed together with the number of measurements in the second line of the display. By "Off" the average will not be displayed. This function is very useful, if the measuring surface has for example a very big roughness. In this case the placing of the probe at the same point of surface doesn't give the same value. It is better to measure for example 5 times and to take as the result the average.



2. Reset

Every time the average value could be reset. If the average should be reset, change with "DOWN" or "UP" key from "N" (No) to "Y" (Yes) and confirm with "ENTER" key. In this case the average will be new calculated with next measurement.



3. Background

You can turn on or turn off the background light of the display. This function is very useful by using the gauge in the dark environment.



4. Cont

Apart from simply point measurements, you can take continued measurements on planes. In this case there will be four times measured and displayed during a one second.



5. Dimension

The gauge is available internationally and put into practice. Therefore it is also possible to switch over the unit $\mu\text{m}/\text{mm}$ to the American unit of measure - mils (1mil = 25.4 μm = 0.0254mm).



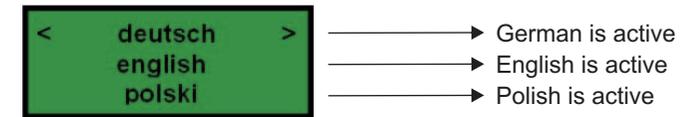
6. Buzzer

Each pressing of the button may be followed by an acoustic signal. This signal you can switch on or off.



7. Language

Commands can be displayed in German, English or Polish.



8. Calibration

- ◆ The thickness gage and the probe are co-ordinated to each other. But sometimes there is necessary to compensate the external influences, for example, the geometric of the measured object (pipes), small contact fields, big changing of temperature, external magnetic fields. In this case or when you connect a new probe, you have to adjust the gauge new.
- ◆ The gage have 7 standard foils for calibration, there are about 15 μm , 25 μm , 50 μm , 100 μm , 250 μm , 500 μm , 500 μm .
- ◆ The calibration follows through measuring of four different points from the measuring range. The first one called "Zero point" corresponds to thickness equal zero and is not changeable. In practice means measuring on the zero plate. The other three points correspond to the measuring on three different samples and can be chosen as you like. There is only important that they have to follow with the rising values for example 10, 100 and 700 μm .

- ◆ It is recommended to always choose the calibration points from wished measuring range. For example, if you measure the thickness of the coating between 20 and 200µm you should calibrate the probe on the samples which are about 20, 100, and 200µm.
- ◆ Choose the menu point “Calibration”, place the probe 4 times on the sample of zero, lift up.

Zero: 4x
Put the Probe on



Zero: 4x
Put Probe off

- ◆ Place the probe 4 times on the sample of the standard foil. When the display shows a different value from your sample, you have to adjust a value on the display. In this case press the “ENTER” key. The cursor is on. Move the cursor to the position you want to correct with “Right” or “Left” key. The correction of the value is to do with “Down” or “Up” key. Then confirm the correct displayed value with “ENTER” key. Now, take measurements on the sample.

Std: 50.0 µm
change - ENTER



Input the calibration value of the standard foil

9. Device

If you call this option, you obtain the exact data about your gauge and a serial number.

Serial-No: 10000

4 Zeroing of the gauge

Strong magnetic fields are likely to influence measurements in both the Fe probe and the NFe probe. Variable relations of temperature, exchange of batteries, no using for a long time or various substrates (groundwork) can influence measuring results. In this case you have to zeroing the gauge.

- ◆ Press “ZERO” in measure mode, Screen displays the following:

Zero:
Put the Probe on

- ◆ Place the probe on the zero plate and wait until beep.

Zero:
Put the Probe off

- ◆ Lift the probe for minimal 5 cm off the zero plate and wait until beep. Then the zeroing is completed. The gauge returns to the measuring mode.