Metrix+™

Coat Gauge F xL
Coat Gauge FN xL

Film/COATING THICKNESS GAUGE
USER GUIDE

Coat Gauge F xL : Integrated F Probe.
Coat Gauge FN xL: Integrated F and N Probes.

Introductions:

The thickness gauge is used to measure the thickness of the plated and coated sheet on metal, e.g. paint/enamel/ chrome on steel, paint and anodizing coating on aluminum/copper.

The gauge takes the precision integrated probe, and uses principles of electro-magnetic induction and the eddy current effect, which automatically detects the attribute of substrates.

Application Field:

The Gauge is designed for non-destructively measuring the thickness of coating and painting. It is essential for material surface treatment and widely used in manufacturing industry, metal-processing industry, chemical industry, commodity inspection area, and also able to work steadily in the laboratory, workshop and outdoor.

Operating Principle:

The gauge adopts the principle of electromagnetic induction and eddy current effect. It has integrated F probe and N probe.

F probe works on the magnetic induction

principle and should be used for detecting the non-magnetic coating's thickness such as chrome/copper/zinc/varnish/rubber on the iron/steel substrate.

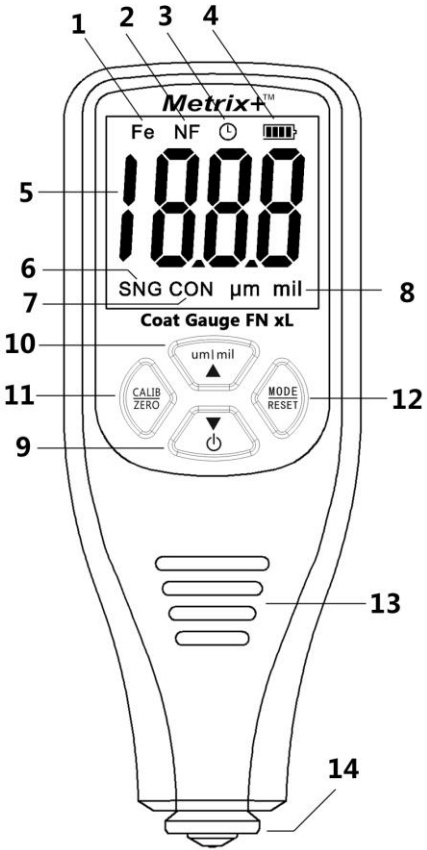
N probe works on the eddy current principle and should be used for detecting the insulating coating's thickness such as paint/anodizing/ceramics on the aluminum/copper/brass substrate.

Supply Information:

Package List:

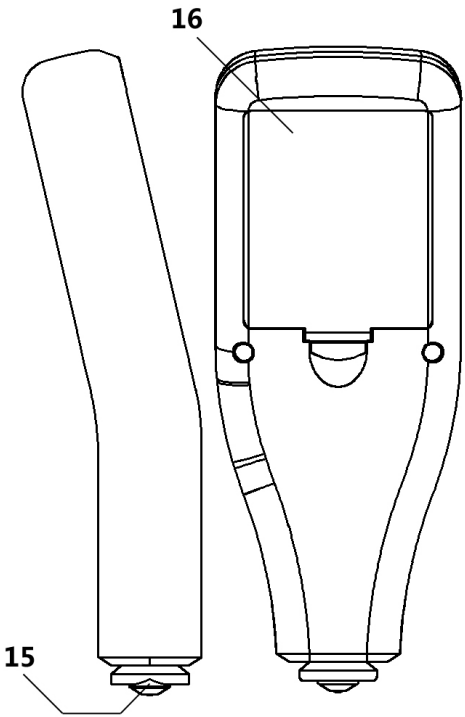
- Coating Thickness Gauge
- Substrates
- Five Standard foils
- User Guide

Description :



1. Fe--Magnetic substrate indicator: Steel/Iron

2. NF--Non-magnetic substrate indicator: Copper/Aluminum
3. Auto power off flag, auto power-off in 5 minutes with no-operation
4. Battery level indicator
5. Measured Reading Display
6. SNG: Single Measurement Mode
7. CON: Continuous Measurement Mode
8. Unit: um, mil
9. ON/OFF; Down Key: Decreasing for Calibration
10. um/mil: Unit Switch Key; Up Key: Increasing for Calibration;
11. CALIB: Switch Calibration Mode;
ZERO: Zero Calibration Key (Press and Hold More than 2s)
12. MODE: Switch SNG/CON; SNG: Single-point Mode; CON: Continuous Mode;
RESET: System Resetting Key(Press and Hold More than 2s)
13. Anti-Skid Slot
14. Probe



15.V-Groove
16. Battery Compartment

Technical specifications

	Probe F	Probe N
Principle	Magnetic Induction	Eddy Current
Range	0~1500um 0~59mil	0~1500um 0~59mil
Accuracy	±(2.5%+2um) ±(2.5%+0.08mil)	±(2.5%+2um) ±(2.5%+0.08mil)
Resolution	0.1um/0.01mil	0.1um/0.01mil
Calibration	Zero Calibration, Multi-Points Calibration	
Units	um, mil	
minimum curvature radius convex: 1.5mm		
minimum curvature radius concave: 25mm		
minimum measuring area: Diameter 6mm		
minimum thickness of substrate	0.5mm(0.02")	0.3mm(0.012")
Power	4 x AAA batteries	
Operation Environment	Temperature: 0~40℃(32~104℉) Humidity:20%~90%RH	
Size	155mm x 62mm x 35mm (6.10" x 2.44" x 1.38")	
Weight	125g(4.41oz)	

Note: The final specifications may be upgraded without notifying. For more details, Please consult with your supplier.

Factors of Affecting Accuracy

User needs to know the factors of affecting measurement accuracy before using the gauge. The factors are listed as below:

- Curvature radius convex <1.5mm
- Curvature radius concave <25mm
- Diameter of measuring area <6mm
- Thickness of substrate <0.5mm
- Surface roughness
- Adhesive substances: clean the probe and coating surface
- Strong magnetic field around
- Out of Operation Temperature and Humidity
- Low Battery

Use the Gauge

Please refer to the factors of affecting measuring accuracy before using.

1. Placing the Battery: Open the battery compartment and insert 4*AAA batteries, Close the lip

2. Prepare the target samples for measuring.

3. Placing the gauge in the air, at least 5cm away from any mental, then power on, wait for 5 seconds for system initialization.

Note: Please upgrade batteries, if the LCD shows low battery which will lead to the

measurement unreliable.

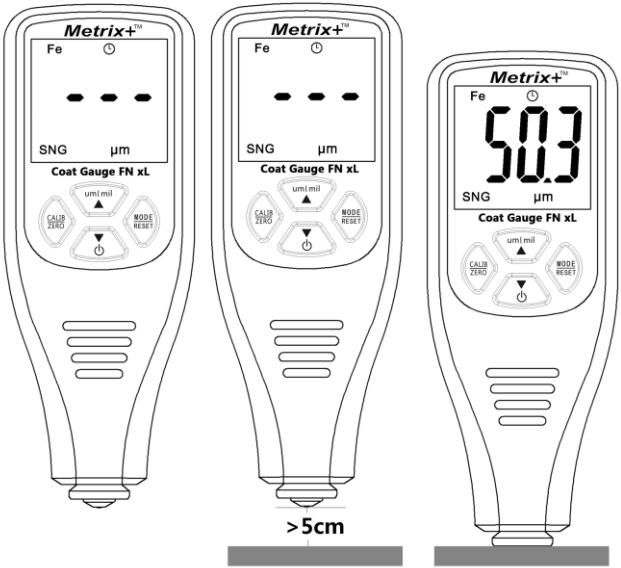
4. Press the um/mil key for unit choosing (um, mil); Press the MODE key for selecting SNG/CON; SNG means single measurement mode; CON means continuous measurement mode.

5. Start Measuring. SNG (single point measurement mode), vertically and rapidly placing the probe on the sample, the readings display on LCD, when one beep alerting. CON(rapidly continuous measurement mode) Vertically placing the probe on the sample, Keeping the probe on the sample, changing the measurement point randomly to do the next measuring.

6.Power Off. The gauge is built-in APO, auto power off with no operations in 5min.

Measurement Modes

"SNG": the Single Mode (Default), Press "MODE" key to display SNG, Vertically and rapidly placing the probe on the sample. The readings display on LCD with one beeping. Hand up the probe more than 5cm away from the mental, then do the next measuring, as showing below:



"CON": the Continuous Measurement Mode, Pressing "MODE" key to display CON, vertically and directly placing the probe on the sample. The readings will continuously upgrade following with the probe moving, as showing below:

Description of "Fe" and "NF"

"**Fe**" in LCD means: Target substrate is ferrous material such as iron/steel.

"**NF**" in LCD means: Target substrate is non-ferrous material such as aluminum/copper.

Unit Switching

Press "um/mil" key to switch unit "um" or "mil"

Auto Power Off

Automatically power off without any operations within 5min.

System Reset:

Press and hold "MODE/RESET" key until the full screen displays with two beeping, the system resetting is successful.

Note: system resetting is mainly used for the return of error operation & error calibration.

Calibration:

Calibration adjustment is the process of setting the gauge to be more accurate. There are factors to affect accuracy such as the probe slight wear, long time no use, hostile environment, or special substrate. How to calibrate the gauge, steps as follows:

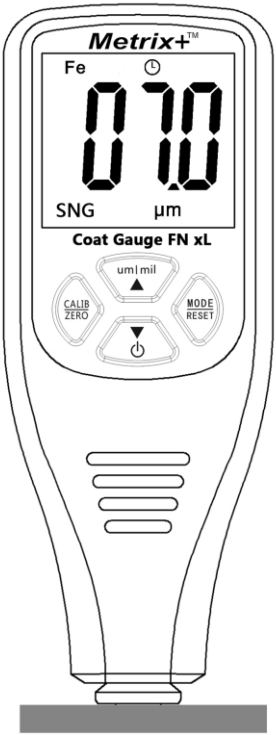
Firstly take out the two pieces of substrates (ferrous substrate/ aluminum substrate) and the five standard foils

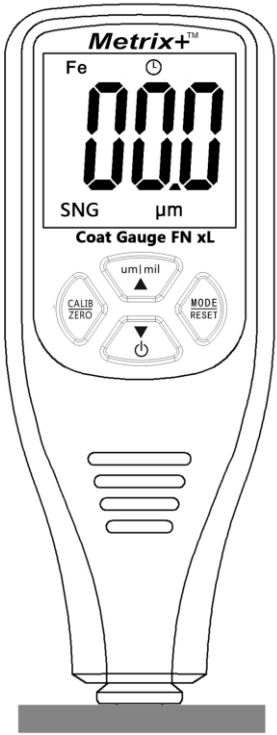
(50um/100um/250um/500um/1000um). Place them horizontally on the table. You also could use your target bare metal substrate instead of our attached substrates.

Note: The calibration includes "ZERO Point " &"Multi-Points" Calibrations. Please seriously note this. Once you did a misoperation, please press and hold "MODE/RESET" 3 seconds for resetting the factory default.

Zero Calibration:

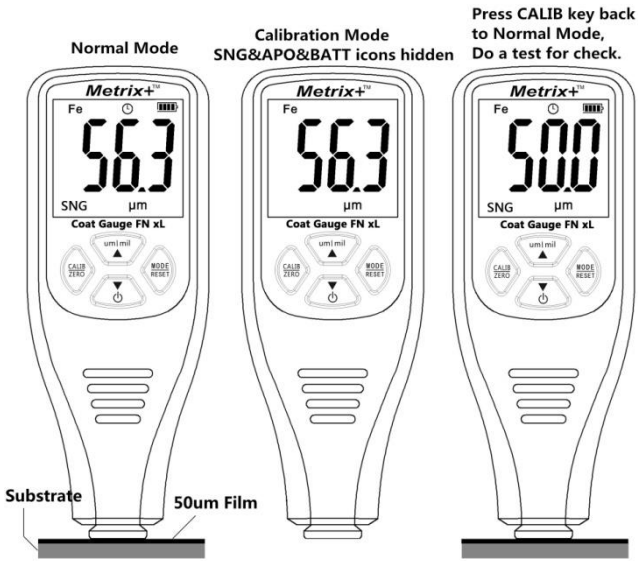
Gauge should be in SNG mode. Place the probe on uncoated sample(for example, our substrates) and raise it after one beep. The LCD will show "X", 7.0 for example as pic below. Press and hold "CALIB/ZERO" key until hearing "beep…beep beep…". The LCD will show "00.0". Then do a test for check. **Once it is not "00.0" display, Please press "MODE/RESET" key longer to system Reset, then do ZERO Calibration again.**


Metrix+™
Fe
070
SNG
µm
Coat Gauge FN xL
um | mil
CALIB ZERO
MODE RESET


Metrix+™
Fe
000
SNG
µm
Coat Gauge FN xL
um | mil
CALIB ZERO
MODE RESET

Multi-Points Calibration:

Gauge should be in SNG mode. Place the probe on coated sample(for example, our foils on substrates) and raise it after one beep. The LCD will show "X", 56.3 for example as pic below. Press "CALIB/ZERO" one time into Calibration Mode, "SNG & ⏲ 🔋" icons are hidden (this mean gauge in Cali-Mode), press up/down key to adjust such as "56.3" to "50.0". Then press "CALIB/ZERO" one time to get out of Calibration Mode. "SNG & ⏲ 🔋" icons display back again. Do a test, if not satisfied, you can do more times to adjust.



Maintenance:

The gauge has to be avoided working under

hostile environment, such as collision avoidance, dust, hyperthermia, humidity, strong magnetic field. If the gauge is no response and can't be power on, please remove the battery, and wait for minutes, then reinstall the battery for try again. If the error still persists, please contact with your supplier for help.