Metrix+™
Innovative Excellence

COATING THICKNESS GAUGE

COAT MEASURER F+N

Reliable

Measuring principle

This instrument has a unique single external probe which uses the principle of electromagnetic induction to measure the thickness of non-magnetic coatings on magnetic substrates and eddy current principle to measure thickness of non-magnetic coatings on non-magnetic substrates.

Applications

The Instrument is designed for non-destructively measuring the thickness of coatings on ferrous and non-ferrous substrates. It can be used to measure thickness of paint, plating (nickel, copper, chromium, etc.), galvanizing layer, lacquer layer, porcelain enamel, phosphide layer, copper tile, anodizing layer, varnish, plastic coatings, powder, etc.

Features

- Unique single probe for F and nF with automatic substrate recognition.
- Zero-point calibration and multi-point calibration.
- Two measure modes: single and continuous.

Technical Specifications

Model	*Metrix+* Coat Measurer F+N
International Standard	It meets the standards of both ISO 2178 and ISO 2361 as well as DIN, ASTM and BS.
Measuring principle	Magnetic induction(F) & Eddy Current(nF)
Display	4 digits backlit LCD
Measuring range	0 - 1250um (0 - 50mils)
Accuracy	±1-3%n or ±2.5um
Resolution	0.1um(0~99.9um); 1um(over 100um)
Units	um /mils
Minimum curvature radius	3mm(convex), 50mm(concave)
Minimum measuring area	Diameter 8mm
Minimum thickness of substrate	0.3mm
Additional features	Low Battery Indicator, Auto power off
Power supply	4 x 1.5V AAA battery
Operation environment	Temperature: 0 to 50°C ; Humidity: < 95%
Size & Weight	145mm × 65mm × 25mm; 145g(not including batteries)
Standard Accessories	Coating Thickness Gauge, F/nF probe, '0' calibration block, standard foils, batteries, technical manual, hard carry case.
Optional Accessories	PC interface(cable and software)

Meter not giving exact values on all foils?

Please note, its not necessary for the instrument to show exact values on all calibration foils provided. Instrument should only be point calibrated with the foil value, closest to sample value.

For eg. if the sample value is 80um, point calibration should be done on foil value closest to 80um, like 100um. There may be a greater drift of reading on 300, 700um or 1000um foil, but its important to calibrate and give accurate value on 100um foil only. Different foils are given to point calibrate to the nearest sample value, not necessary to show exact readings on all of them.

If point calibration is done on 100um, and on 700um foil, its shows 725um, that's fine, reason being electromagnetic induction and eddy current values depend on lot of factors like physical material properties of deformation, roughness, temperature, roll, lattice structure, etc, which might change with coating thickness. When we point-calibrate, we are setting the internal sensitivity constant to respond accordingly to the calibrated thickness. When we calibrate on 100um foil, the constant is adjusted according to 100um value, but that same constant may not give exact value on 700 or 1000um, we have to readjust the constant accordingly. A very high drift like 760um reading on 700um foil means calibration has to be done, but a 725um value on 700um foil means its fine, considering its calibrated on 100um foil.

Even rolling a steel surface changes its ferromagnetic properties, which in turn changes the electromagnetic induction behavior, and values might not be accurate. Its important to understand the kind of material being measured to know how to calibrate the instrument accordingly. Zero calibration and point calibration is advised to be done on uncoated sample, rather than provided Ferrous blocks and foils, to increase the accuracy.

If new probe is replaced and used, its important to calibrate the meter again.

Digital Coating thickness measurement depends on various factors, kindly go through the manual to know further.

Visit our Youtube channel to understand how to calibrate the meter on foils and blocks and check many such videos of our instruments.