



PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
FL-33458
USA
From outside US: +1
Tel: (561) 320-9162
Fax: (561) 320-9176
info@pce-americas.com

PCE Instruments UK Ltd.
Unit 11
Southpoint Business Park
Ensign way
Hampshire / Southampton
United Kingdom, SO31 4RF
From outside UK: +44
Tel: (0) 2380 98703 0
Fax: (0) 2380 98703 9
info@industrial-needs.com

www.pce-instruments.com/english
www.pce-instruments.com

DIGITAL COATING THICKNESS GAUGE (F & NF TYPE) PCE-CT 5000

INSTRUCTION MANUAL



This Coating Thickness Meter is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.



1. FEATURES

- * It meets the standards of both ISO2178 and ISO-2360 as well as DIN, ASTM and BS. Suitable for the laboratory and for use in harsh field conditions.
- * The F probes measure the thickness of non-magnetic materials (e.g. paint, plastic, porcelain enamel, copper, zinc, aluminium, chrome etc.) on magnetic materials (e.g. iron, nickel etc.) . often used to measure the thickness of galvanizing layer, lacquer layer, porcelain enamel layer, phosphide layer, copper tile, aluminium tile, some alloy tile, paper etc.
- * The N probes measure the thickness of non-magnetic coatings on non-magnetic metals. It is used on anodizing, varnish, paint, enamel, plastic coatings, powder, etc. applied to aluminum, brass, non-magnetic stainless steel, etc.
- * Automatic substrate recognition.
- * Manual or automatic shut down.
- * Two measurement mode: Single and Continuous
- * Wide measuring range and high resolution.
- * Metric/English conversion.
- * Digital display gives exact reading with no guessing or errors.
- * Can communicate with PC computer for statistics and printing by the optional cable and the software for RS232C interface .

1

2. SPECIFICATIONS

Display	4 digits, 10 mm LCD
Range	0~5000 um/0~200mil Other range should be specified
Resolution	0.1 um (0~99.9um) 1 um (over 100um)
Accuracy	±1~3%n or 2.5 um or 0.1mil (Whichever is the greater)
PC interface:	with RS-232C interface
Power supply	4x1.5 AAA(UM-4) battery
Operating condition:	Temp. 0~50 , Humidity <80%
Size	126x65x27 mm (5.0x2.6x1.1 inch)
Weight:	about 81g not including battery
Accessories	
	Carrying case1 pc.
	Operation manual 1 pc.
	F probe in built1 pc.
	NF probe in built.....1 pc.
	Calibration foils1set
	Substrate (Iron)1 pc.
	Substrate (Aluminium).....1 pc.
Optional accessories:	
	Cable & software for RS232C

2

3. FRONT PANEL DESCRIPTIONS



- 3-1 Probes inbuilt
- 3-2 Display
- 3-3 Zero/Power Key
- 3-4 Battery Compartment/Cover
- 3-5 Jack for RS232C interface

3

4. MEASURING PROCEDURE

- 4.1 Press the power key (3-3) to switch on the power and '0' shows up on the Display (3-2). The gauge will restore the state of last operation itself , with a symbol 'Fe' or 'NFe' indicating on Display. The gauge enters the auto mode which can automatically recognize the substrate itself.
- 4.2 Place the probe (3-1) on a coating layer to be measured. The reading on the Display is the thickness of the coating layer.
- 4.3 To take the next measurement, just lift the probe (3-1) to more than 1 centimeter and then repeat the step 4.2.
- 4.4 If you suspect the accuracy of measurement, you should calibrate before taking the measurements. For the calibration procedures, please refer to the calibration part 5.
- 4.5 The gauge can be switched off by pressing the Power key (3-3). On the other side, the gauge will power itself off about 50 seconds after the last operation.
- 4.6 To change the measurement unit 'um' or 'mil' by Depressing the Zero/Power key and not releasing it till 'UNIT' on the Display. And the unit changes after releasing the power key. It takes about 6 seconds from starting depressing the Zero/Power key.
- 4.7 To change measurement mode from the single to continuous or vice visa, just depressing the Zero/ Power key and not releasing it till 'SC' on the Display. The measurement mode changes after releasing the Power key. it takes about 8 seconds from starting depressing the Power key.
It is a continuous mode if the symbol ((●)) on the Display.


4

5. ZERO CALIBRATION

Zero adjustment for 'Fe' and 'NFe' should be carried out separately. Take the iron substrate if 'Fe' on Display, while take the aluminium substrate if 'NFe' on the Display. Place the probe (3-1) on the substrate steadily. Press the Zero key (3-3) and '0' will be on the Display before lifting the probe. **If pressing the ZERO key but the probe is not placed on the substrate or an uncoated standard. The zero calibration is invalid.**

5

6. BATTERY REPLACEMENT

- 6.1 When it is necessary to replace the battery, i.e. battery voltage less than approx. 2.5v, the battery symbol '  ' will appear on the Display
- 6.2 Slide the Battery Cover (Fig. 1 , 3-4) away from the instrument and remove the batteries.
- 6.3 Install the batteries (2x1.5v AAA/UM-4) correctly into the case.
- 6.4 If the instrument is not to be used for any extended period, remove batteries.

6

7. CALIBRATION FOILS

As accessories, the instrument includes a different foil set for different ranges. Please see the following table.

RANGE (um)	STANDARD FOIL INCLUDED					
	CM25	CM50	CM100	CM200	CM500	CM1000
0-200	X	X	X	X		
0-500		X	X	X	X	
0-1000		X	X	X	X	X
0-2000		X	X	X	X	X
Customized						

7

8. CONSIDERATIONS

- 8.1 In order to weaken the influence of the measured material on the accuracy of measurement, it is recommended that the calibrations should be done on the uncoated material to be measured.
- 8.2 Probes will eventually wear. Probe life will depend on the number of measurements taken and how abrasive the coating is. Replacement separate can be fitted by qualified persons only.

8