

  
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@pce-instruments.co.uk

[www.pce-instruments.com/english](http://www.pce-instruments.com/english)  
[www.pce-instruments.com](http://www.pce-instruments.com)

# Thickness Meter PCE-TG 250 INSTRUCTION MANUAL



## TECHNICAL DATA

DISPLAY	128X64 PIXEL LCD WITH BACK LIGHT
MEASUREMENT RANGE	
- STANDARD	1.0 to 250 mm / 0.039 to 9.84 inch IN (STEEL) DEPENDING ON THE PROBE
- THROUGH COATING	2.5 to 20 mm / 0.098 to 0.79 inch (coated surfaces)
ACCURACY	+/-0.5% of measured value +0.02mm / 0.00079 inch
DISPLAY RESOLUTION	0.01 mm / 0.00039 inch ( Less than 100.0 mm / 3.94 inch ) 0.1 mm / 0.0039 inch ( over 100 mm / 3.94 inch)
BULIT-IN STANDARD BLOCK	4.00 mm / 0.157 inch
VELOCITY RANGE	1000-9999 m/s / 2237-22367 mph
POWER	2 EA. 1.2 V AA BATTERY
OUTSIDE DIMENSION	149X73X32 mm / 5.87X2.87X1.26 inch
WEIGHT	350 g / 0.77 lb

## **FEATURES:**

AUTOMATIC SELF CALIBRATION  
COUPLANT INDICATOR  
AUTOMATIC POWER OFF DEVICE  
HIGH-LOW LIMIT ALARM  
LCD BRIGHTNESS ADJUST  
THROUGH COATING CAPABILITY  
THROUGH COATING MEASUREMENT  
500 DATA READING STORAGE WITH DIFFERENT 5 MEMORY FILES  
LOW BATTERY INDICATOR


# INTRODUCTION OF THE GAUGE



## OPERATING PROCEDURE


### STANDARD MODE:

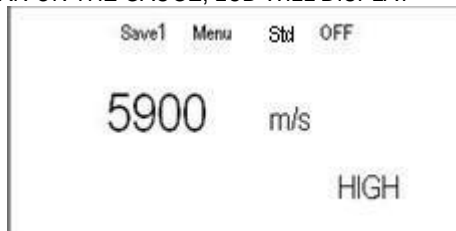
#### 1. INSTRUMENT AND PROBE


PLUG THE PROBE TO THE THICKNESS GAUGE CONNECOTR. PRESS  KEY, HEAR BI-BI SOUND THEN LCD DISPLAY TURN ON AND DISPLAY THE LAST SET VERLOCITY. DISPLAY AS FOLLOWING



### THICKNESS GAUGE SYSTEM SETTING SYSTEM SETUP

PRESS GAUGE  KEY TURN ON THE GAUGE, LCD WILL DISPLAY





PRESS MENU KEY 2 TIME. THEN PRESS ENTER KEY , DISPLAY FOLLOWING

System	Setup
Function	Setup
Outside	alarm
[enter]	to select
↓	to down

PRESSS ENTER KEY  AGAIN, DISPLAY FOLLOWING SCREEN


Units	METRICS	( CAN PRESS  SELECT INCH OR METRICS UNIT )
Resolution	HIGH	( HIGH=HIGH RESOLUTION DISPLAY 0.01 mm )
Min Capture	ON	( CAPTURE MIN MEASUREMENT THICKNESS )
2-Point CAL	OFF	( OFF=SINGLE POINT AND ON=2-POINT CAL )
LANGUAGE	ENGLISH	
↓	to down	

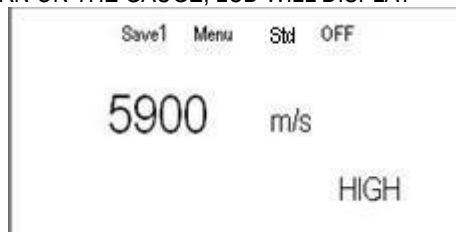
USE   KEY MOVE HIGH-LIGHT CURSOR UP AND DOWN. USE ENTER KEY TO CHANGE THE SETTING

AFTER SETTING COMPLETED, PRESS MENU KEY 2 TIMES BACK TO THE MEASUREMENT FUNCTION





### FUNCTION SETUP

PRESS GAUGE  KEY TURN ON THE GAUGE, LCD WILL DISPLAY



PRESS  ENTER 2-TIMES, PRESS  ENTRY KEY, USE  KEY MOVE HIGH LIGHT

CURSOR TO **FUNCTION SETTING**, PRESS  THEN USE  KEY MOVE HIGH-LIGHT CURSOR DOWN TO THE FOLLOWING DISPLAY

Erase file  
Erase all data  
Erase cal data  
[ENTER] to select

### UP AND DOWN LIMIT ALARM SETTING

PRESS GAUGE  KEY TURN ON THE GAUGE, LCD WILL DISPLAY



PRESS MENU KEY 2 TIME. PRESS   KEY UNTIL HIGH-LIGHT CURSOR MOVE TO THE OUTSIDE ALARM, THEN PRESS ENTER KEY, DISPLAY FOLLOWING

USE   KEY TO ADJUST THE LOW LIMIT THICKNESS,





THEN PRESS ENTER TO SET HIGH LIMIT THICKNESS





AFTER SETTING, PRESS MENU 2-TIMES BACK TO THE MEASUREMENT FUCTION. WHEN THICKNESS MEASUREMNT OVER THE RANGE 0.10 mm – 200.0 mm, THE THICKNESS GAUGE BEBER START TO ALARM.

## 2. VELOCITY SETTING

IF USER ALREADY KNOW THE MATERIAL VELOCITY. USER CAN USE MANUAL ADJUST THE VELOCITY FROM REFERENCE CHART. THE GAUGE CAN STORED 5 DIFFERENT MATERIAL VELOCITY

IF THE DISPLAY VELOCITY IS NOT REQUIRED, THEN PRESS VEL  KEY SELECT THE VELOCITY FROM MEMORY, THEN PRESS ENTER  KEY.

IF THE 5 STORGED VEL ARE NOT THE TEST MATERIAL VEL. THEN USE

  KEY ADJUST THE VEL DISPLAY UNTIL MEET REQUIRED VEL. THEN USER CAN PREE ENTER KEY STORE THIS VEL FOR MEASUREMENT THE SAME MATERIAL NEXT TIME


IF THE VEL IS UNKNOWN, USE THE TOOLS MEASURMENT THE TEST SPECIMEN THICKNESS. PUT

PROBE ON THE SPECIMEN. USE   KEY ADJUST THE THICKNESS DISPLAY SAME AS TOOLS MEASUREMNT.

PRESS VEL TO GET DISPLAY OF SPECIEMN VEL AND STORED THE VEL TO THE MEMORY.

PRESS VEL  KEY ENTER VEL SETTING



PRESS VEL  KEY AGAIN TO SELECT THE 2'NDSTORED VEL



USE   KEY ADJUST THE VEL DISPLAY UNTIL MEET REQUIRED VEL




### 3. INSTRUMENT CALIBRATION

IT'S NECESSARY TO CALIBRATE WHEN CHANGE THE PROBE OR TURN ON THE INSTRUMENT. DURING THE OPERATING, OPERATOR NEEDED FREQUENCY RETURN BACK AND CALIBRATION AGAIN.

#### SINGLE POINT CALIBRATION

SET THE VEL TO 5900 m/s, PUT SOME COUPLANT TO THE GAUGE SIDE BLOCK. PRESS THE


PROBE TO THE BLOCK, WAIT UNTIL COUPLANT INDICATOR NOT FLASH. PRESS  CAL KEY, THE DISPLAY WILL SHOW 4.00 mm.



#### TWO POINT CALIBRATION

TO GET MORE PRECISION MENSURMENT, TWO POINT CALIBRATION IS NECESSARY

GET A STEP BLOCK ( AT LEAST TWO DIFFERENT THICKNESS AND COVER THE MEASUREMENT RANGE.

PRESS MENU TWO TIME UNTIL CURSOR TO THE MENU PRESS ENTER  ENTER THE SYSTEM SETTING MENU AS FOLLOWING

```
System  Setup
Function Setup
Outside alarm
[enter] to select
↓to down
```

PRESS  TO System Setup, then press  key



PRESS  KEY UNTIL DISPLY HIGH LIGHT AS FOLLOWING


Resolution: HIGH  
Min Captyre: OFF  
2-Point CAL: OFF


[enter] to select  
↑TO UP ↓to down

PRESS ENTER  KEY CHNANGE THE 2-POINT CAL: OFF INTO ON

Resolution: HIGH  
Min Captyre: OFF  
2-Point CAL: ON

[enter] to select  
↑TO UP ↓to down

PRESS MANUAL BACK , THEN PRESS  KEY AGAIN TO THE DISPLAY SCREEN.



PUT COUNPLAT ON THIN BLOCK, MOVE THE PROBE ON THE THIN BLOCK. PRESS  CAL KEY, DISPLAY SHOWTHE THIN BLOCK THICKNESS.



USE   KEY TO ADJUST THE THIN THICKNESS DISPLAY UNTIL MEET BLCOK THICKNESS VALUE. THEN PRESS CAL KEY AGAIN. DISPLAY





USE   KEY TO ADJUST THE THICKNESS DISPLAY UNTIL MEET BLOCK THICKNESS VALUE. THEN PRESS CAL KEY AGAIN. COMPLETE THE 2-PINT CALIBRATION SETUP.

#### 4. THICKNESS MEASUREMENT

AFTER CALIBRATE AND SETUP THE THICKNESS GAUGE, PUT SOME COUPLANT ON THE TEST SPECIMEN. MOVE AND PRESS THE PROBE ON THE SPECIMEN, LCD NOW DISPLAY THE ACTUAL THICKNESS MEASUREMENT READING.



WHEN PROBE AND TEST SPECIMEN COUPLANT IS GOOD, THE DISPLAY WILL SHOW COUPLANT GOOD INDICATOR. WHEN LIFT-OFF THE PROBE THE THICKNESS DISPLAY NO CHANGE BUT COUPLANT INDICATOR DISAPPEAR.

#### 5. LOW BATTERY INDICATOR

WHEN THICKNESS GAUGE POWER WAS NOT ENOUGH, THE LOW BATTERY INDICATOR WILL DISPLAY ON THE LEFT BOTTOM ON DISPLAY LCD.



#### 6. TURN POWER OFF THE THICKNESS GAUGE

UM-2D HAVE 2 WAYS TO TURN OFF THE POWER.

##### 6.1 AUTO TURN OFF

- IF THE THICKNESS GAUGE WAIT 3 MIN NOT MEASUREMENT, THE THICKNESS GAUGE WILL TURN-OFF AUTOMATICALLY

##### 6.2 MANUAL TURN OFF

- PRESS MENU UNTIL HIGH LIGHT TO OFF INDICATOR, PRESS  KEY TO TURN OFF THE THICKNESS GAUGE

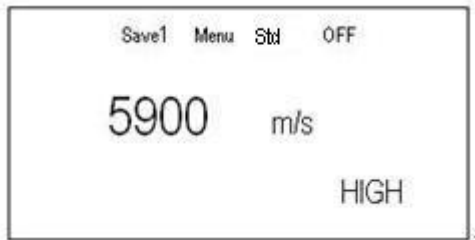
#### 7. THICKNESS DATA STORAGE AND RECALL


##### 7.1 THICKNESS DATA STORAGE


THE THICKNESS DATA CAN BE STORGED WITH 5 DIFFERENT FILE NAME. EACH FILE NAME CAN

STORGED 100 READING.

PRESS  KEY, MOVE DISPLAY LCD HIGH LIGHT CUSOR TO SAVE1.

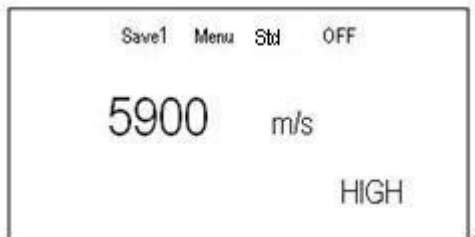



PRESS  KEY CAN SELECT SAVE1, SAVE2,SAVE3, SAVE4, SAVE 5 FILE NAME


PUT PROBE ON THE SPECIMEN GET READING1, PRESS  KEY. THE LEFT BOTTOM SIDE WILL SHOW MEMORY, THIS MEAN, THE READING 1 ALREADY STORED IN THE FILE 1. CONTINOUS TO DO THE STORAGE OF READING 2.3.4.....

#### 7.2 THCHNESS DATA RECALL

PRESS  KEY, MOVE DISPLAY LCD HIGH LIGHT CUSOR TO SAVE1.





PRESS  KEY CAN SELECT SAVE1, SAVE2,SAVE3, SAVE4, SAVE 5 FILE NAME

PRESS  KEY. THE LCD DISPLAY



No.001 IS THE FILE NAME


Total: 005 MEANS FILE NAME No 1 HAVE 5 STORAGE DATA, USE   KEY TO CHANGE THE POINT READING


**DELIEETE**

DELIEETE THE SINGLE POINT READING


ENTER THE RECALL CONDITION



USE   KEY TO CHANGE THE POINT READING, SELECT THE POINT WANT TO DELIETE.



PRESS  KEY, DELIETE THIS POINT.

**DELIETE THE WHOLE FILE**

PRESS GAUGE  KEY TURN ON THE GAUGE, LCD WILL DISPLAY



PRESS  ENTER 2-TIMES, PRESS  ENTRY KEY, USE  KEY MOVE HIGH LIGHT

CURSOR TO **FUNCTION SETTING**, PRESS  THEN USE  KEY MOVE HIGH-LIGHT CURSOR DOWN TO THE FOLLOWING SCREEN.

Erase file  
Erase all data  
Erase cal data  
[ENTER] to select



PRESS  , THE SCREEN DISPLAY

Press [ ENTER ]  
To confirm  
Press [ MENU ]  
to cancle

AFTER PRESS  KEY, IT WILL SHOW ERASE FILE 1

## 8. BACK LIGHT

INSTRUMENT OFFER LCD BACK-LIGHT DEVICE FOR DARK AREA READING.

PRESS  KEY TURN ON THE LCD BACK LIGHT. PRESS AGAIN  KEY CAN TURN OFF THE BACK LIGHT

### THROUGH COATING MODE

UM-2D CAN MEASUREMENT THE THICKNESS WITHOUT MOVE THE COATING.

PRESS  KEY TURN ON THE GAUGE.

PRESS  KEY MOVE THE HIGH LIGHT CURSOR TO Std. PRESS  KEY TO CHANGE INTO Coat. NOW THE GAUGE UNDER THOUGH COATING MEASUREMENT MODE



PUT A SHIM ON THE 4 mm CALIBRATION BLOCK. PUT COUPLANT AND PROBE. PRESS THE  KEY, CALIBRATED THE GAUGE DISPLAY TO 4.00 mm



THE REST OPERATING PROCEDURE ARE SAME AS THE STD MODE.