



User Manual

PCE-CT 25FN Coating Thickness Gauge



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski, русский, 中文) can be found by using our product search on: www.pce-instruments.com

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1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, ...) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.



2 Specifications

2.1 Technical specifications

| | Ferromagnetic metals F | Non-ferromagnetic metals N |
|---------------------------------|---------------------------------------------------------------------------------------|-------------------------------|
| Measuring principle | Magnetic induction | Eddy current |
| Measurement range | 0 ... 1500 μm | |
| Accuracy | $\pm(3\% + 1\ \mu\text{m})$ | |
| Resolution | 0 ... 100 μm : 0.1 μm ; >100 μm : 1 μm | |
| Calibration | User calibration is supported | |
| Statistical functions | Number of measurements, average value, minimum, maximum | |
| Units of measurement | μm , mm, mils | |
| Measuring area | Diameter 20 mm | |
| Material thickness of substrate | 0.30 mm | 0.05 mm |
| Radius convex | 5 mm | |
| Radius concave | 25 mm | |
| Measuring frequency | max. 2 measurements per second | |
| Power supply | 9 V block battery | |
| Operating conditions | -10 °C ... +50 °C 20 % ... 90 % RH, non-condensing | |
| Storage conditions | -10 °C ... +60 °C 20 % ... 90 % RH, non-condensing | |
| Dimensions | 143 mm x 85 mm x 39 mm | |
| Weight | 100 g | |
| Material | ABS | |

2.2 Delivery scope

1 x coating thickness gauge PCE-CT 25FN

1 x calibration set

- Fe zero standard
- NFe zero standard
- calibration foil 49 μm
- calibration foil 100 μm
- calibration foil 254 μm
- calibration foil 503 μm
- calibration foil 984 μm

1 x 9 V block battery

1 x user manual

3 System description

3.1 Device



1. Display
2. Keypad



1. Sensor with contact surface
2. Trigger
3. Battery compartment cover

3.2 Display and function keys



1. Material Fe or N
2. Current statistics display
3. Battery charge level
4. Automatic power off
5. Current unit of measurement
6. Measured value
7. Statistical value for (2)
8. Automatic sensor selection

Key functions

| Key | Press and release | Press and hold |
|-----|---------------------------------|---------------------------------|
| F1 | Change µm, mm, mils | Deleting the statistical values |
| F2 | Display backlight on/off | Device on/off |
| F3 | Changing the statistics display | Start of zero calibration |

4 Operation

4.1 Insert / replace battery

- Open the battery compartment cover on the front of the handle (the cover can be unfolded)
- Connect new 9 V block battery
- Insert the battery and close the cover.

If the battery icon indicates a low battery level, the battery must be replaced. A lack of voltage affects the stability and reliability of the device.

4.2 Make a measurement

Ensure that the measuring surface is large enough, that the material thickness and, in the case of curved objects, the radius of curvature are in accordance with the specifications of the unit.

Switch on the meter by pressing and holding the key in the middle. When switching on the meter, do not place its contact surface on metals - keep at least 2 cm distance from metals. Otherwise, "OL" will be displayed while the meter is placed on the metal detected during start-up and incorrect readings will be displayed when placed on other surfaces.

Place the circular contact surface of the device as perpendicular as possible to the measuring location. The surface of the sensor which is mounted on a spring should rest on the test surface evenly. Apply the trigger. A short beep sounds and the measured value appears in the display.

4.3 Zero calibration

It is recommended to perform a zero calibration regularly to increase the accuracy of the measurements. Prepare an uncoated sample (one each for ferromagnetic (Fe) and non-ferromagnetic (N) metals) or use the zero standards supplied.

With the meter switched on, press the right key until you hear a double beep and the text "ZERO" appears and flashes on the display. Place the sensor contact surface of the tester vertically on the sample and apply the trigger. It beeps briefly and the word "ZERO" appears in the display. Briefly press the right key to finish the calibration process.

4.4 Settings

Display backlight

Pressing and releasing the middle key switches the display backlight on or off.

Change units

Press and release the left key to switch between the units μm , mm, mils.

Display and delete statistical values

Press and release the right key to switch between the display of the MEAN value, NO count, minimum value MIN and maximum value MAX. The instrument can save 80 values. When you continue measuring, the oldest value is overwritten. After switching off the meter, the values are deleted. You can also delete the values by pressing and holding the left key.

Auto Power Off

The unit switches off if no key has been pressed for 3 minutes or if the battery is low. An acoustic signal sounds before the unit is switched off. If you press the trigger for a new measurement immediately after the sound or press one of the keys briefly, the statistical data is retained.



5 Troubleshooting

Display "OL"

"OL" appears on the display if the measurement range is exceeded (coating thicker than 1.5 mm). This device can only measure coatings up to 1.5 mm. For thicker coatings, a different meter will be required.

"OL" also appears if the contact surface of the device was closer than 2 cm to metals. Restart the meter while keeping a sufficient distance.

Imprecise measured values, no display

Remove the battery and reinsert it after waiting at least 5 seconds. If this does not help or if inserting a new battery does not help, you can reset the instrument to factory settings. To do this, switch off the device and then press the key in the middle until AS appears on the display. When you release the key, the device is reset to factory settings. Then check the measurement accuracy with the zero standards from the calibration set. If necessary, perform the zero calibration described in chapter 4.3.

6 Warranty

You can read our warranty terms in our General Business Terms which you can find here: <https://www.pce-instruments.com/english/terms>.

7 Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.



PCE Instruments contact information

Germany

PCE Deutschland GmbH
Im Langel 4
D-59872 Meschede
Deutschland
Tel.: +49 (0) 2903 976 99 0
Fax: +49 (0) 2903 976 99 29
info@pce-instruments.com
www.pce-instruments.com/deutsch

United Kingdom

PCE Instruments UK Ltd
Unit 11 Southpoint Business Park
Ensign Way, Southampton
Hampshire
United Kingdom, SO31 4RF
Tel: +44 (0) 2380 98703 0
Fax: +44 (0) 2380 98703 9
info@pce-instruments.co.uk
www.pce-instruments.com/english

The Netherlands

PCE Brookhuis B.V.
Institutenweg 15
7521 PH Enschede
Nederland
Telefoon: +31 (0)53 737 01 92
info@pcebenelux.nl
www.pce-instruments.com/dutch

United States of America

PCE Americas Inc.
1201 Jupiter Park Drive, Suite 8
Jupiter / Palm Beach
33458 FL
USA
Tel: +1 (561) 320-9162
Fax: +1 (561) 320-9176
info@pce-americas.com
www.pce-instruments.com/us

France

PCE Instruments France EURL
23, rue de Strasbourg
67250 Soultz-Sous-Forêts
France
Téléphone: +33 (0) 972 3537 17
Numéro de fax: +33 (0) 972 3537 18
info@pce-france.fr
www.pce-instruments.com/french

Italy

PCE Italia s.r.l.
Via Pesciatina 878 / B-Interno 6
55010 Loc. Gragnano
Capannori (Lucca)
Italia
Telefono: +39 0583 975 114
Fax: +39 0583 974 824
info@pce-italia.it
www.pce-instruments.com/italiano

China

PCE (Beijing) Technology Co., Limited
1519 Room, 6 Building
Zhong Ang Times Plaza
No. 9 Mentougou Road, Tou Gou District
102300 Beijing, China
Tel: +86 (10) 8893 9660
info@pce-instruments.cn
www.pce-instruments.cn

Spain

PCE Ibérica S.L.
Calle Mayor, 53
02500 Tobarra (Albacete)
España
Tel. : +34 967 543 548
Fax: +34 967 543 542
info@pce-iberica.es
www.pce-instruments.com/espanol

Turkey

PCE Teknik Cihazları Ltd.Şti.
Halkalı Merkez Mah.
Pehlivan Sok. No.6/C
34303 Küçükçekmece - İstanbul
Türkiye
Tel: 0212 471 11 47
Faks: 0212 705 53 93
info@pce- cihazlari.com.tr
www.pce-instruments.com/turkish

Hong Kong

PCE Instruments HK Ltd.
Unit J, 21/F., COS Centre
56 Tsun Yip Street
Kwun Tong
Kowloon, Hong Kong
Tel: +852-301-84912
jyi@pce-instruments.com
www.pce-instruments.cn