

art. nr. 59251



Operation Manual



Table of contents

1. Technical specifications.....	3
2. Getting started.....	3
3. Gauge manual	4

Guarantee TW-7s	9
-----------------------	---





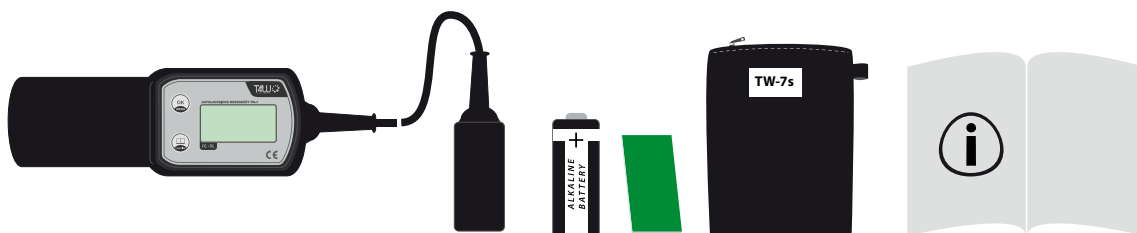
1. Technical specifications

Basic specifications of the device:

- measurement on steel, galvanized steel and aluminum;
- measurement resolution: 1 or 10µm (selected in menu);
- measurement range: from 0µm to 2000µm;
- measurement pause (hold function);
- built-in UV tester;
- sound notification;
- zeroing function;
- LCD back light (turned on in menu);
- flexible measuring sensor;
- intuitive operation with 12-positions menu;
- automatic shut-off after longer idleness;
- powered by 1,5V AA (R6) alkaline battery or compatible rechargeable battery;
- low battery indicator;
- 3 language operation (Polish, English, German);
- 25 months guarantee.

Set includes:

- Meter TW-7s;
- resetting plate;
- case;
- battery;
- manual.
- zeroing plate;



2. Getting started

Coating thickness gauge TW-7s is designed to measure the thickness of a steel, galvanized steel or aluminum sheet paint coating. It also helps to verify the authenticity of e.g. car documents or banknotes thank to built-in UV tester.

The measurement resolution equals 1 or 10µm (selected in menu). The device features an

EEPROM memory for 200 measurements. The measurement's results are stored also when the gauge is off which enables to look through them after the measurements are done. They can be deleted from the main menu level. The **Hold** function enables to keep the measurement result on screen even after the sensor is taken away from the specimen. The device has a LCD back light which makes measuring in places with insufficient light (e.g. garage) much easier.

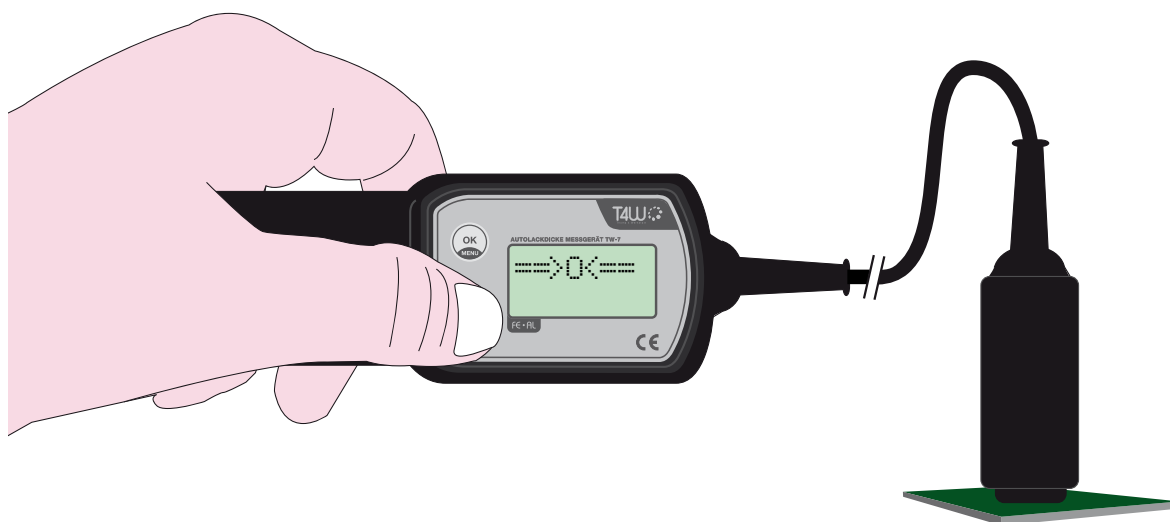
Thank to improved technical solutions, the gauge's power consumption is very slight. It takes only 1 AA (R6) alkaline battery for dozen or more continuous working hours.

The device is equipped with a modern and fast microprocessor. The thickness measurements are made using third level approximation algorithms combined with multiple calibration points. It provides high accuracy of measurement results especially in comparison with simple, linear approximation solutions..

Zeroing (calibration)

Before You start to take measurements, please check whether the gauge is calibrated. To do it properly, please select the **Zero** function from the main menu and put the sensor against the calibration sheet for around 2 seconds. If the display shows a 0 +/-10µm value, it means that the gauge is calibrated (in this case press the **OK [MENU]** button to return to main menu). Should the aberration be larger than 0 +/-10µm, the device needs to be calibrated.

In order to do this press the **FUNKTION** button. On the display appears a $\Rightarrow 0 \Leftarrow$ caption. Push the sensor against the calibration sheet and hold it. The calibration progress will be shown on the display (33%, 66%, 100%). After the procedure **OK...** caption appears and You will hear a sound signal. The device returns to **Zero** function where You can check if the calibration has been done properly. After pressing **OK [MENU]** the device returns to the main menu.



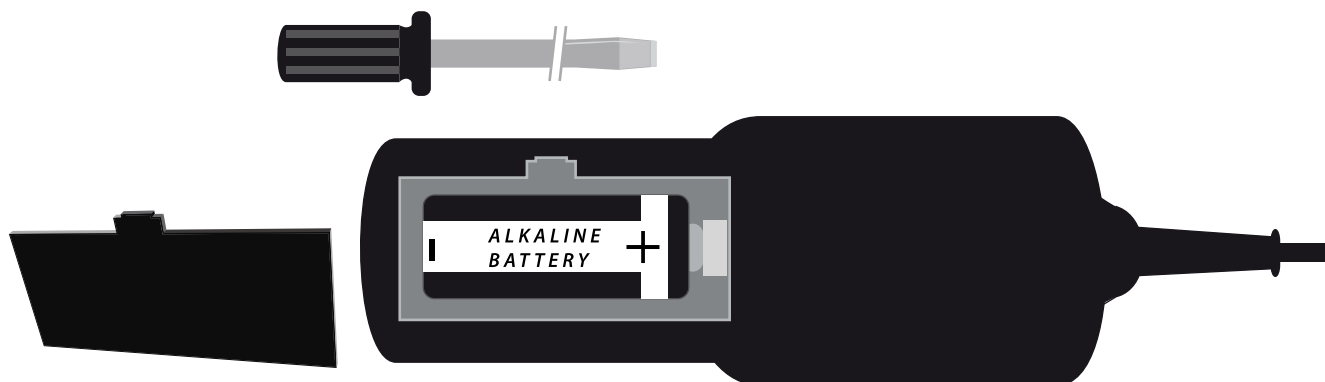


CAUTION! *WHILE ZEROING, THE CALIBRATION SHEET SHOULD BE PLACED ON A FLAT, STABLE NON-METALIC SURFACE (E.G. DO NOT PLACE THE SHEET ON THE BODYWORK). ALSO, PLEASE AVOID HOLDING THE SHEET IN YOUR HANDS AS THIS MAY AFFECT THE OPERATION.*

Please note that zeroing is recommended when the measurement conditions are changing (e.g. the temperature or humidity rises or falls).

Changing the battery

If the battery is low it needs to be replaced immediately. Take away the battery cover placed in



the back of the device and replace the battery. Please use only type AA (R6) alkaline batteries or fully charged compatible rechargeable battery.

CAUTION! *1. USE ONLY ALKALINE BATTERIES AS NORMAL BATTERIES PROVIDE INSUFFICIENT POWER. 2. INSTEAD OF A ALKALINE BATTERY YOU CAN USE A COMPATIBLE, FULLY CHARGED ACCU.*

To take a measurement please put the device's sensor against the examined surface. The sensor should adhere as flat as possible. The examined surface should be clean and smooth, otherwise the measurement result may be incorrect. It is recommended to hold the gauge with both hands and press gently towards the examined surface to eliminate vibration. Usually it takes 1-2 seconds to stabilize the measurement result.



3. Gauge manual

The device is operated with 2 buttons:

- button **OK [MENU]**: turns the device on, accepts the selected functions and returns from them to the main menu, when pressed during the measurement it memorizes the displayed value;
- button **FUNKTION**: switches between the functions in the main menu, switches between the stored measurement values.

To turn the gauge on please press the **OK [MENU]** button for about 1 second. After displaying the company's logo and the device's type, the device switches automatically to the main menu. The \triangleright symbol indicates the currently selected function. Please press the **FUNKTION** button to switch between the following functions.

Please press the **FUNKTION** button to switch between the following functions:

- **Measur** – measure function: takes measurements;
- **Subst** - substance function: allows to choose the measured material
- **Memory** – memory function: recalls the stored measurement values;
- **Off** – off function: switches the device off;
- **Delete** – delete function: deletes the stores measurement values;
- **Zero** – zeroing function: calibrates the device;
- **Hold** – hold function: freezes the measurement result on the display;
- **Resol.** – resolution function: switches between the measurement resolution;
- **TEST UV** – UV tester function: turns the tester on or off;
- **LCD LED** – back light function: turns the display back light on or off;
- **Sound** – sound function: turns the device's sounds on or off;
- **Lang.** – language function: switches between languages.

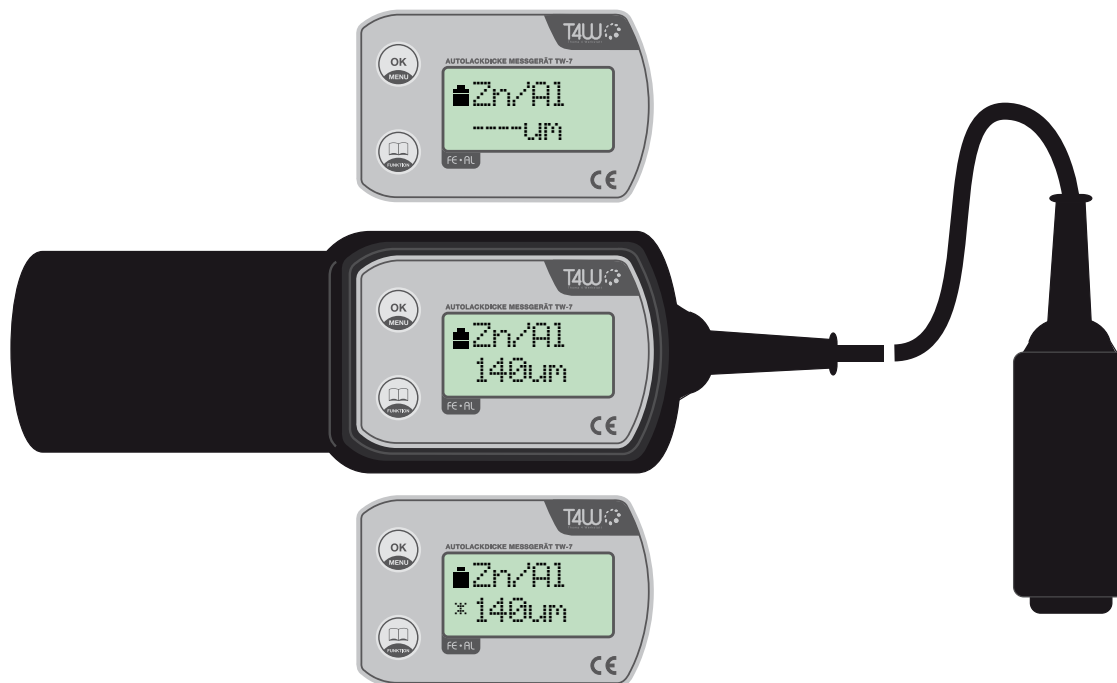
To select a function please press the **OK [MENU]** button.

Measure function - Measur

After You select this function the display will show the currently selected material, e.g. Zn/Al and the battery indicator in the first line and $\text{---} \text{---} \text{---}$ in the second. The gauge is ready to take measurement.

After You put the sensor against the bodywork the result of the measurement will be shown on the display in the second line. If the **Hold** function is enabled the result will be refreshed every 1 – 2 seconds. After disabling the **Hold** function it will be shown in real-time.

To store the measurement result press the **OK[MENU]** button. The ☒ caption will appear next to the result confirming that it has been stored.



CAUTION! THE DEVICE'S STORAGE CAPACITY EQUALS 200 RESULTS. AFTER EXCEEDING THE CAPACITY THE OLDEST RESULTS WILL BE OVERWRITTEN AUTOMATICALLY!

After You finish taking the measurements please return to the main menu with pressing the **OK[MENU]** button.

Memory function - Memory

This function allows You to recall the latest measurement values. Please press the **FUNKTION** button to switch between the stored results. The first displayed result is the oldest one. After You get to the last result the device returns automatically to the first one. To return to the main menu please press the **OK [MENU]** button.



Off function - Off

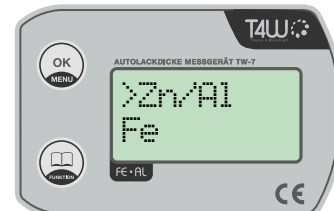
After You accept this function with the **OK[MENU]** button the device turns off.

Substance function - Subst

The substance function allows You to choose the material which will be measured. You have the following possible choices:

- galvanized steel / aluminium (Zn/Al);
- steel (Fe);
- reference point (Ref)

You can switch between the sheet materials with the **FUNKTION** button, to accept the selection press the **OK [MENU]** button.



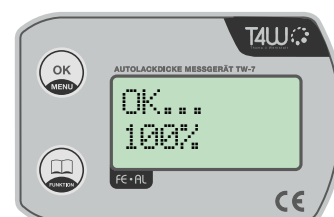
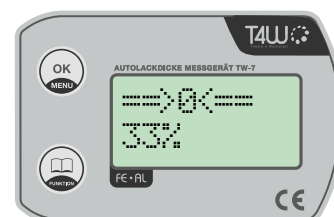
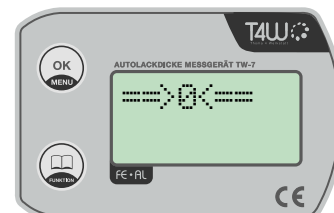
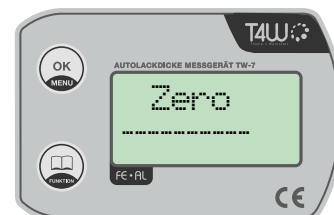
Delete function - Delete

Choose this function to delete all measurement values stored in the device's EEPROM internal memory. After deleting the stored results the device returns to the main menu automatically.

Zeroing function - Zero

Before You start to take measurements, please check whether the gauge is calibrated. To do it properly, please select the Zero function from the main menu and put the sensor against the calibration sheet for around 2 seconds. If the display shows a 0 +/-10µm value, it means that the gauge is calibrated (in this case press the **OK [MENU]** button to return to main menu). Should the aberration be larger than 0 +/-10µm, the device needs to be calibrated.

In order to do this press the **FUNKTION** button. On the display appears a $\Rightarrow 0 \Leftarrow$ caption. Push the sensor against the calibration sheet and hold it. The calibration progress will be shown on the display (33%, 66%, 100%). After the procedure OK... caption appears and You will hear a sound signal. The device returns to Zero function where You can check if the calibration has been done properly. After pressing **OK [MENU]** the device returns to the main menu.



CAUTION! WHILE ZEROING, THE CALIBRATION SHEET SHOULD BE PLACED ON A FLAT, STABLE NON-METALIC SURFACE (E.G. DO NOT PLACE THE SHEET ON THE BODYWORK). ALSO, PLEASE AVOID HOLDING THE SHEET IN YOUR HANDS AS THIS MAY AFFECT THE OPERATION.

Please note that zeroing is recommended when the measurement



conditions are changing (e.g. the temperature or humidity rises or falls).

Hold function - Hold

This is a feature of high-end devices. It enables to take the measurement and freeze the result on the display even after taking the sensor away from the specimen. If You turn this function off, the results will be displayed in real-time.

To activate select the **Hold** function from the main menu and choose **Hold on** by pressing the **FUNKTION** button. Confirm the selection with the **OK[MENU]** button. To turn it off, choose **Hold off**.

Resolution function - Resol.

The gauge enables to choose between 2 measurement resolutions chosen with the **FUNKTION** button:

- **D=10** – the measurement is rounded up to 10µm (faster)
- **D=1** – the measurement is accurate up to 1µm (precise)

For car paint coating thickness **D=10** setting is good enough.



UV tester function - Test UV

This function helps to verify the authenticity of e.g. car documents or banknotes. This feature has been patented.

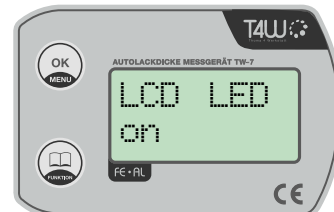
To activate select the **Test UV** function from the main menu and choose **UV on** by pressing the **FUNKTION** button. Confirm the selection with the **OK[MENU]** button. To turn it off, choose **UV off**.





Back light function - LCD LED

Improves the display visibility in insufficient light conditions. To activate select the **LCD LED** function from the main menu and choose **LCD LED on** by pressing the **FUNKTION** button. Confirm the selection with the **OK[MENU]** button. To turn it off, choose **LCD LED off**.



Sound function

The device features sound signalization. It emits short sound signals when You operate the device. It also confirms freezing of the measurement result when the **Hold** function is active.

To activate select the **Sound** function from the main menu and choose **Sound on** by pressing the **FUNKTION** button. Confirm the selection with the **OK[MENU]** button. To turn it off, choose **Sound off**.



Language function

You can choose out of 3 built-in menu languages:

- Polski - Polish,
- Eng. - English
- Deutsch - German.

Select the language with the **FUNKTION** button and confirm the choice with the **OK[MENU]** button.





Guarantee TW-7s

1. The guarantee period of this device is 25 months from date of purchase.
2. Within this period the Producer guarantees a reliable function of the device, if operated correctly.
3. The Producer takes responsibility for all workmanship or material defects.
4. All defects will be repaired within 30 days since the device has been accepted by the Service.
5. The guarantee period will be prolonged by the time the device has been handled by the Service.
6. The device shall be delivered to the Service with all the standard equipment, clean and with readable button's description.
7. The guarantee will be treated as valid only with the date of purchase and with the stamp, or signature of the Producer filled out.
8. In case the device has to be shipped to the Producer, it happens on the shipper's responsibility and cost.
9. The device will be not accepted by the Service if pt. 6 is not kept, if the defect is of no workmanship or material nature, if the warranty card is not filled out, or the device is delivered with broken seal.
10. This guarantee shall not apply to damage caused through fire, accident, misuse, incorrect adjustment or repair, installation, modifications, or use in an improper way or inconsistent with the technical and safety standards required for it's operation.
11. All defects mentioned in pt. 10 can be repaired, if previously agreed with the Service. The cost depends on the nature of the defect.
12. After the guarantee period expires, defects can be repaired, if previously agreed with the Service. The cost depends on the nature of the defect.
13. The guarantee is only valid with filled out date of purchase, stamp or signature of the Producer and with an appropriate receipt.



Date of purchase

Stamp / Signature