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Instruction Manual Digital Coating Thickness Gauge

SAUTER TC car

Version 1.2
08/2017
GB



PROFESSIONAL MEASURING

TC_car-BA-e-1712



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Instruction Manual

Digital Coating Thickness Gauge

Thank you for buying a SAUTER digital Coating Thickness Gauge. We hope you are pleased with your high quality Thickness Gauge with its big functional range. If you have any queries, wishes or helpful suggestions, do not hesitate to call our service number.

Summarize:

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This coating thickness gauge is small in size, light in weight and easy to carry. Although it is complex and advanced, it is convenient to operate. Its ruggedness will allow many years of use if all the instructions are followed carefully.

Please keep this instruction manual always within reach!

Annotation: It is strongly recommended to adjust the new instrument before the first use, as described in paragraph 5. By doing this, you will achieve a much better measurement result right from the start.

1 Features

»This instrument meets the standards of both, ISO 2178, ISO 2361 as well as DIN, ASTM and BS. It is suitable for laboratory and for use in “harsh field” conditions.

»The F- sensor measures the thickness of nonmagnetic materials, e.g. paint, plastic, porcelain enamel, copper, zinc, aluminium, chrome, lacquer layers etc. These layers are located on magnetic metals e.g. steel, iron, nickel etc. It is 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- sensor measures the thickness of non-magnetic coatings on non-magnetic metals. It is used on anodizing, varnish, paint, enamel, plastic coatings, powder etc. It can be applied on non-magnetic materials like aluminium, brass, stainless steel etc.

»Automatically substrate (base) recognition.

»Manual or automatically Auto-Power off to conserve batteries

»metric /imperial conversion from μm / mil

»Two measurement modes: single and continuous

»Data transfer to PC possible by RS232 interface

Cable and software can be obtained as optional accessory.

2 Specifications

Display: 4 digits

Range: 0 to 1250 μm / 0 to 50 mil (default)

Resolution: 0.1 μm (0 to 99.9 μm)

1 μm (over 100 μm)

Accuracy:

- Standard: 3% of the measured value or $\pm 2.5 \mu\text{m}$ or 0.1mil

This is valid within a tolerance range of $\pm 100 \mu\text{m}$ around the individually measured range, if a two-point calibration was performed within this tolerance range.

PC- interface: with RS-232C interface

Power supply: 4x 1.5V AAA (UM-4) battery

Operating conditions: Temperature: 0 to 50°C
Humidity: <80%

Dimensions: 127 x 67 x 28mm (5.0 x 2.6 x 1.1Inch)

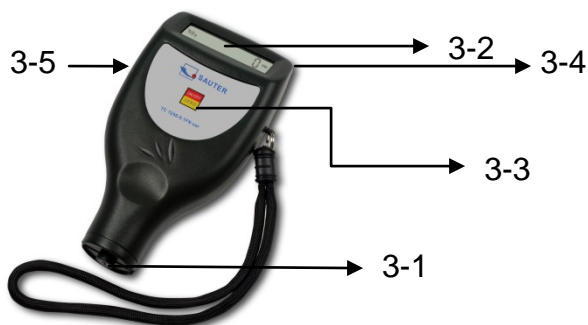
Weight: about 81g (batteries not included)

Accessories:

- Carrying case
- Instruction manual
- F-sensor (inbuilt)
- N-sensor (inbuilt)
- Calibration foils
- Base plate (iron)
- Base plate (aluminium)

Optional accessories: Cable & software for RS-232C: ATC-01

3 Front panel description



- 3- 1 Sensor (F and N, inbuilt)
- 3- 2 Display
- 3- 3 Zero- key, Power- on/ Power- off key
- 3- 4 Battery compartment/ cover
- 3- 5 Jack for RS-232C interface

4 Measuring Procedure

a) The Power- on/Power-off key 3-3 has to be pressed to switch on the instrument. `0` appears on the display 3-2. The instrument restores the status of the last operation itself by the symbol `Fe` (= F) or `NFe` (= N) which is indicated on the dis-

play. The instrument enters the auto mode which can automatically recognize the base plate or base itself.

b) The sensor 3-1 has to be placed onto a coating layer to be measured. The reading on the display is the thickness of the coating layer.

c) For the next measurement the sensor 3-1 has to be lifted for more than 1cm, "0" appears again and step b) has to be repeated.

d) In case of inaccuracies to the measurement result, it is recommended to adjust (calibrate) the instrument before measuring, as described in chapter 5.

e) The instrument can be switched off by pressing the Power- on/ Power- off key 3-3. The power will switch off 80 seconds after the last key operation.

f) The measurement unit can be indicated with `µm` or `mil`. To convert:

The Zero/ Power- on/ off key 3-3 has to be pressed and not to be released until `UNIT` appears on the display. The measurement unit changes by releasing.

All in all, this operation lasts about 6 seconds (from starting pressing the Zero-/ Power-on/ off key).

g) To change the measuring mode from `single` to `continuous` or vice visa, the Zero/ Power- key 3-3 has to be pressed and not released until `SC` appears on the display. The measuring mode changes into the other one when the key is released. This lasts about 8 seconds. The symbol **((•))** on the display indicates the continuous mode. To change back to single mode, just press the Power-key again for 8 seconds. If **((•))** has disappeared on the display, you are back in single measurement mode.

5 Adjustment

a) Zero adjustment:

Zero adjustment for `Fe` (=F) and `NFe` (=NF) should be carried out separately.

The iron base plate has to be used if `Fe` is shown on the display. The base plate of aluminium has to be used if `NFe` is shown on the display.

The sensor 3-1 has to be placed carefully onto the base plate and the Zero-/ Power key 3-3 has to be pressed without lifting the sensor. `0` appears on the display.

Attention: The adjustment will be invalid, if the sensor is not directly placed on the base plate or another uncoated material.

b) An appropriate adjustment foil, according to the measurement range, has to be selected.

c) The standard adjustment foil has to be put onto the base plate or the uncoated base material for the outstanding tests.

d) The sensor 3-1 has to be placed in the middle of the standard foil and then be lifted. The reading on the display is the measured value. The displayed reading can be corrected by pressing the UP- button A or the DOWN-button B, which are located in the battery compartment. This has to be done while the sensor is away from the base plate or the material to be measured.

e) Step d) has to be repeated until the result is correct.

6 Battery replacement

- a) If the battery symbol ``+/-`` appears on the display, batteries should be replaced.
- b) The battery cover 3-4 has to be removed from the instrument and the batteries have to be taken out.
- c) Batteries (4x1.5V AAA/UM-4) have to be installed, paying carefully attention to polarity.
- d) If the instrument is not used for a longer period, batteries should be removed.

7 Adjustment foils

As accessory there is included a foil set of different adjustment foils, which always cover the measurement range from 20 to 2000µm. It is also available as a spare part, article ATB-US07.

8 Trouble shooting

- a) The instrument should always be adjusted on the uncoated base material to be measured instead of the base plate included in the delivery. Then the accuracy is more precise.
- b) Sensors will eventually wear off. Life of the sensor will depend on the number of measurements taken and how abrasive the coatings are.

9 Restore Factory Settings

- a) It is recommended to restore factory settings in following cases:
 - The instrument does not measure any more
 - Measurement accuracy is degraded caused by drastic environmental changes

b) How to restore:

To restore factory settings includes both, "Fe" setting and "NFe" setting. Please note which symbol is shown on the display.

You can restore only one of them or both respectively. Please follow the procedure below:

- Press the Power key and do not release it until "CAL" appears on the display. OFF, UNIT, SC and the CAL will appear in sequence. CAL appears about 6 seconds from starting to press the Power key.

F:H or **nF:H** will be displayed after releasing the Power key.

Place the sensor (3-1) onto the corresponding base material steadily.

Then press the Zero key which is followed by a "beep". Lift the sensor for more than 5cm. Then press the Zero key again and the gauge will return into measurement mode. Now factory setting is restored.

Annotation:

To have a look at the CE Declaration of Conformity, please click onto the following link: <https://www.kern-sohn.com/shop/de/DOWNLOADS/>