

Instruction Manual TB

DIGITAL COATING THICKNESS GAUGE



Model: TB 1000-0.1 F

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Annotation: It is strongly recommended to calibrate the new instrument before the first use, as described in paragraph 6. By doing this it will be achieved a much better measurement result right from the start.

1. Features

- * The instrument meets ISO standards 2178. So it can be used in laboratory conditions as well as under "harsh field" conditions.
- * The instrument is widely used to measure the thickness of these nonmagnetic coatings: paint, plastic & PVC, porcelain enamel, copper, zinc, aluminium, chrome, layers of laquer, layers of paper etc. These coatings may be put up on following magnetic base grounds: steel, iron, nickle, etc.
- * Wide measuring range and high resolution

2. Specifications

Display: 4 digits, 10 mm LCD
Range: 1000 μm

Resolution: 0.1 μm to 100 μm
1 μm over 100 μm

Accuracy:

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

- Off-Set Accur Mode: 1% of the measured value or min. $\pm 1.0 \mu\text{m}$

Is valid within $\pm 50 \mu\text{m}$ around the *Off-Set Accur* point.

Power supply: 4 x 1.5V AA battery

Operating condition:

Temperature 0 to 50 $^{\circ}\text{C}$
Humidity $\leq 80 \%$

Size: 161 x 69 x 32 mm

Weight: about 260 g (including batteries)

Accessory:

Carrying case
Operation manual
Instrument and sensor
Calibration foils
Base plate (iron)

3. Front panel description



- 3-1 Sensor
- 3-2 Display
- 3-3 Zero- key
- 3-4 Plus- key
- 3-5 Minus- key
- 3-6 Power- on/ Power- off key
- 3-7 $\mu\text{m}/ \text{mil}$ key
- 3-8 Battery compartment/ cover

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4. Measuring procedure

4.1 The power- key is to be pressed to turn on the power. '0' appears on the display 3-2.

Remark: The instrument will auto- calibrate, as soon as it is switched on.

Please pay attention to the sensor. During the initial calibration it should be neither in direct surroundings of the base plate nor other magnetic materials.

4.2 The sensor is to be placed on the coating to be measured.

The coating thickness is now shown on the display.

4.3 To perform the next measurement the sensor has to be lifted for more than 1cm off the base material and step 4.2 is to be repeated.

4.4 In case of inaccuracies to the measurement result, it is recommended to calibrate the instrument before measuring as described in 6.

4.5 The instrument can be switched off by the Power- on/ Power- off key 3-6. The gauge switches off automatically 2 minutes after the last operation.

5. OFFSET-Accur

With this instrument the possibility is given to improve the measurement result essentially by using the *OFFSET-Accur* function. Therefore it is necessary to calibrate the gauge with a reference coating in the typically measured range. This adjustment can also be done with the calibration foils, included in the delivery. Ideally this adjustment should be done on the base material which is used for the real measurement instead on the base plate included in the delivery.

5.1 The result of the initially measurement is still shown on the display (as performed in 4.2).

5.2 The sensor is to be removed from the test object. Then the reading on the display shall be corrected by pressing the Plus- key or the Minus- key.

6. Calibration

6.1 Zero calibration: The sensor has to be placed on the base plate or another uncoated nonmagnetic material. On the display '0' is shown when pressing the Zero- key.
The Zero- key may not be pressed if the sensor is not placed on the base plate or on any other uncoated base material.

6.2 An applicable calibration foil is to be chosen adequate to the typical measurement range.

6.3 The chosen calibration foil has to be placed onto the base plate or another uncoated base material.

6.4 The sensor 3-1 has to be placed carefully onto the calibration foil and then it has to be lifted.

The result now appears on the display.

It shall be corrected by pressing the Plus- key 3-4 or the Minus- key 3-5. For doing this, the sensor must be removed from the base plate or the material to be measured.

6.5 Step 6.4 is to be repeated until the measurement accuracy has been realised.

7. Battery replacement

7.1 The batteries are to be replaced if the battery voltage is less than 4.8V. In this case the battery symbol '+-' appears on the display.

7.2 The battery cover is to be removed (Fig.1, 3-6) from the instrument and the batteries are to be taken off.

7.3 The batteries (4×1.5V AA/UM-3) are to be installed correctly into the case.

7.4 If the instrument is not to be used for an extended period, batteries are to be extracted.

8. Calibration foil

As accessory the instrument includes a calibration foil set and the base plate.

9. Considerations/ Trouble-shooting

9.1 The sensors of coating thickness gauges are to be replaced only by identical types or series.
Otherwise the accuracy of measurement may be affected or the gauge might be damaged.

9.2 The gauge should always be calibrated on the base material used for the actual measurement, not on the base plate included in the delivery.

9.3 The sensor will eventually be worn off. Its life will depend on the number of measurements taken and how abrasive the coating is.

