1 PRODUCT DESCRIPTION

This Coating Thickness Meter is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.

1.1 Specifications

Display : 4 digits, 10 mm LCD
Range : • 0~200 um/0~8mil
• 0~500 um/0~20mil
• 0~1000 um/0~40mil (default)
• 0~2000 um/0~80mil
Resolution : 0.1 um (0~99.9um)
1 um (over 100um)
Accuracy : ± 1~3%n or 2.5 um or 0.1mil (Whichever is the greater)
PC interface : with RS-232C interface
Power supply : 4x1.5 AAA(UM-4) battery Operating condition: Temp. 0~50°C, Humidity <80%
Size : 126x65x27 mm (5.0x2.6x1.1 inch)
Weight : about 81 g (not including batteries)

1.2 Details

3-1 Probes inbuilt
3-2 Display
3-3 Zero Key
3-4 Plus Key
3-5 Minus Key
3-6 Power key (multi functional)
3-7 um/mil conversion key (shortcut key)
3-8 Battery Compartment/Cover
3-9 Single/Continuous (shortcut key)
3-10 F/NF conversion (shortcut key)
3-11 Jack for RS232C interface

2 WHAT’S IN THE BOX?

Coating thickness gauge
Calibration foils
Substrate (Iron)
Substrate (Aluminum)

TQC B.V. 2908 LL Capelle aan den IJssel phone: +31 (0)10-7900100 e-mail: info@tqc.eu
Molenbaan 19 The Netherlands fax: +31 (0)10-7900129 www.tqc.eu
3 PERFORM A MEASUREMENT

3.1 Measuring procedure

1. Press the power key (3-6) to switch on the power and '0' displays on the Display (3-2). The gauge will restore the state of last operation itself, with a symbol 'Fe' or 'NFe' indicating on Display. The gauge enters the auto mode which can automatically recognize the substrate itself.
2. The gauge will become the manual mode of substrate once depressing the F/NF (3-10) key.
3. Place the probe (3-1) on a coating layer to be measured. The reading on the Display is the thickness of the coating layer. The reading can be corrected by pressing the plus key (3-4) or minus key (3-5) while the probe is away from the substrate or the measured body.
4. To take the next measurement, just lift the probe (3-1) to more than 1 centimeter and then repeat the step 3.
5. If suspecting the accuracy of measurement, you should calibrate before taking the measurements. For the calibration procedures, please refer to the calibration part 5.
6. The gauge can be switched off by pressing the Power key (3-6). On the other side, the gauge will power itself off about 50 seconds after the last operation.
7. To change the measurement unit 'um' or 'mil' by A. Depressing the shortcut key (3-7) or B. Depressing Power key 'and not releasing it till 'UNIT' on the Display and then pressing Zero key (3-3).
8. To change measurement mode from the single to continuous or vice visa, just depressing Power key and not releasing it till 'SC' on the Display and then pressing Zero key (3-3). The symbol '((●))', represents continuous mode And 'S' represents single mode.

3.2 Calibration procedure

Zero adjustment
1. Zero adjustment for 'Fe' and 'NFe' should be carried out separately. Take the iron substrate if 'Fe' on Display, while take the aluminum substrate if 'NFe' on the Display. Place the probe (3-1) on the substrate steadily. Press the zero key (3-3) and '0' will be on the Display before lifting the probe. **Pressing ZERO key while the probe is not placed on the substrate or an uncoated standard makes the zero adjustment invalid.**
2. Select an appropriate calibration foil according to your measurement range.
3. Place the standard foil selected onto the substrate or the uncoated standard.

3.3 Calibration foils

As accessories, the instrument includes a different foil set for different ranges. Please see the following table:

<table>
<thead>
<tr>
<th>Range μm</th>
<th>Standard Foil Included</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CM25</td>
</tr>
<tr>
<td>0-200</td>
<td>X</td>
</tr>
<tr>
<td>0-500</td>
<td>X</td>
</tr>
<tr>
<td>0-1000</td>
<td>X</td>
</tr>
<tr>
<td>0-2000</td>
<td>X</td>
</tr>
<tr>
<td>Customized</td>
<td></td>
</tr>
</tbody>
</table>

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3.4 Considerations

In order to weaken the influence of the measured material on the accuracy of measurement, it is recommended that the calibrations should be done on the uncoated material to be measured. Probes will eventually wear. Probe life will depend on the number of measurements taken and how abrasive the coating is. Replacement separate can be fitted by qualified persons only.

3.5 Restore factory settings

When to restore?
It is recommended to restore factory settings in one of the following cases:
- The gauge does not measure any more.
- Measurement accuracy is degraded caused by environmental conditions change greatly.
How to restore?
Restore factory settings includes 'Fe' setting and 'NFe' setting. You can restore one of them or both of them respectively. Please follow procedures below to restore factory setting.
- Depress N/F key to select the type (F or NF) to be restored.
- Depress Power key and not release it till 'CAL' appears on the Display. It is about 6 seconds from starting depressing Power key.
- F:0 or nF:0 will be on the Display after releasing Power key. Place the probe (3-1) on the corresponding substrate steadily. And then press the Zero key followed by a beep.
- When F:H or nF:H is on Display, lift the probe to more than 5 centimeters. Then press the Zero key again and the gauge return to measurement state. The factory setting is restored. Remember, to restore factory setting should be done within 6 seconds at every stage. Or the gauge will quit itself and restoration is invalid.

3.6 Note

Settings includes restoring factory setting, unit setting, SIC setting, which should be done within 6 seconds at every stage. Or the gauge will quit itself and keep its status before.

4 CALIBRATIONS

We recommend annual calibration. For calibration, send the instrument, together with a RMA form* to TQC, Molenbaan 19, 2908 LL Capelle aan den Ijssel, NL.

*You can download the RMA form here: http://www.tqc.eu/en/service/repairs-calibrations/

5 REPLACING BATTERIES

When it is necessary to replace the battery, i.e. battery voltage less than approx. 4.5v, the battery symbol will appear on the Display:
1. Slide the Battery Cover (Fig. 1, 3-8) away from the instrument and remove the batteries.
2. Install the batteries (4x1.5v AAA/UM-4) correctly into the case.
3. If the instrument is not to be used for any extended period, remove batteries.

6 MAINTENANCE

- Though robust in design, this instrument is precision-machined. Never drop it or knock it over

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Always clean the instrument after use.
Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
Do not use compressed air to clean the instrument.
Always keep the instrument in its case when not in use.
We recommend annual calibration

7 DISCLAIMER

The right of technical modifications is reserved.

The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this manual or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development.