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## MiLESEEEY MC996

# MiLESEEEY Digital Coating Thickness Gauge MC996 User Manual

## 1. INTRODUCTION

The MiLESEEEY MC996 Digital Coating Thickness Gauge is designed for precise measurement of non-magnetic coatings on magnetic metal substrates (ferrous, Fe) and non-conductive coatings on non-ferrous metal substrates (NF). This device features automatic F/NF mode detection, fast readings, zero and multi-point calibration, unit conversion (metric/imperial), single and continuous measurement modes, and an automatic shut-down function for energy saving. It is suitable for various applications including automotive, manufacturing, and quality inspection.

## 2. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x MiLESEEEY Coating Thickness Gauge (MC996)
- 1 x Aluminium Substrate
- 1 x Iron Substrate
- 5 x Standard Calibration Foils
- 2 x AAA Batteries
- 1 x User Manual
- 1 x Toolbox/Carrying Case



Figure 2.1: Included accessories for the MILESEEEY MC996 gauge, showing calibration foils, aluminum and iron substrates, and the carrying case.

### 3. PRODUCT OVERVIEW

Familiarize yourself with the components and display indicators of the MC996 gauge.



Figure 3.1: Labeled diagram of the MILESEEEY MC996 Digital Coating Thickness Gauge, highlighting the 2.2-inch backlit screen, units switch, calibration buttons, mode switch, power button, and detecting sensor.

### Key Components:

- **2.2" Backlit Screen:** Displays measurement readings, units, battery status, and mode indicators.
- **CALIB/ZERO Button:** Used for zero calibration and reducing calibration data.
- **um/mils Button:** Switches between metric ( $\mu\text{m}$ ) and imperial (mils) units, and increases calibration data.
- **MODE/RESET Button:** Switches between Single (SNG) and Continuous (CON) measurement modes, and resets to default settings.
- **Power Button:** Turns the device on and off.
- **Detecting Sensor:** Located at the bottom, used to contact the surface for measurement.

## 4. SETUP

### 4.1 Battery Installation

1. Locate the battery compartment on the back of the device.
2. Open the battery cover.
3. Insert two AAA batteries, ensuring correct polarity (+/-).
4. Close the battery cover securely.

### 4.2 Initial Power On

Press the power button to turn on the device. The screen will light up, and the gauge will perform a self-check. Ensure the sensor is not touching any surface during power-on.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Measurement Modes

The gauge supports two measurement modes:

- **SNG (Single Measurement):** Takes one reading each time the sensor is placed on the surface.
- **CON (Continuous Measurement):** Continuously takes readings as the sensor is moved across the surface.

Press the **MODE/RESET** button to switch between SNG and CON modes.

### 5.2 Unit Conversion

Press the **um/mils** button to switch between micrometers ( $\mu\text{m}$ ) and mils (mil).

### 5.3 Automatic F/NF Detection

The MC996 automatically detects the substrate material (Ferrous 'Fe' or Non-Ferrous 'NF') when the sensor is placed on the surface. The detected material type will be displayed on the screen.



### Ferrous Material:

Range: 0~1500um/0~59.1mil  
Accuracy:  $\pm(3\%+2\text{um})/\pm(3\%+0.08\text{mil})$   
Resolution:0.1um/0.01mil  
Minimum Thickness of Substrate:  
0.02"/0.5mm



### No Ferrous Material:

Range: 0~1500um/0~59.1mil  
Accuracy:  $\pm(3\%+2\text{um})/\pm(3\%+0.08\text{mil})$   
Resolution:0.1um/0.01mil  
Minimum Thickness of Substrate:  
0.012"/0.3mm



## Auto switch Detection Mode According Different Substrate.



Figure 5.1: The gauge's automatic detection of Ferrous (Fe) and Non-Ferrous (NF) materials, along with their respective measurement ranges and resolutions.

#### 5.4 Taking a Measurement

1. Ensure the gauge is powered on and calibrated (see Section 6).
2. Place the detecting sensor firmly and perpendicularly onto the coated surface to be measured.
3. The gauge will automatically detect the substrate type and display the coating thickness reading on the screen.
4. For continuous measurement, slide the sensor across the surface. For single measurement, lift and replace the sensor for each new reading.

# HOW TO USE

## Example: Detect thickness of car paint.



1

Install the battery and start up, and test whether it is 0 on the smooth and heavy iron substrate. If it is 0, it means that the instrument and the pick-up method are correct. You can use it directly.



2

First measure the thickness of the roof paint film as a reference for the original car paint, Generally, new car paint is 80-140um. Some car paints slightly higher than 130um may also be the original car paint. It is related to the value of the car.



3

If the measured value is under 80. It means that part might be cutted or replaced. If the measured value is too thick, it possibly judged to be spray paint or putty.

Figure 5.2: Example of using the MILESEEEY MC996 to detect car paint thickness, including initial zeroing and subsequent measurements.

## 6. CALIBRATION

Calibration is crucial for accurate measurements. The MC996 supports zero calibration and multi-point calibration.

### 6.1 Zero Calibration

Zero calibration should be performed on an uncoated substrate of the same material as the one you intend to measure (e.g., bare iron for ferrous measurements, bare aluminum for non-ferrous measurements).

1. Place the sensor firmly on the bare substrate.
2. Press and hold the **CALIB/ZERO** button until the display shows "0.00" or a similar indication of zero.
3. Release the button. The gauge is now zero-calibrated for that substrate type.

### 6.2 Multi-Points Calibration

Multi-points calibration uses standard foils of known thickness to ensure accuracy across the measurement range. Use the included calibration foils and substrates.

1. Perform zero calibration first (Section 6.1).
2. Place a calibration foil of known thickness onto the appropriate substrate (e.g., 100µm foil on the iron substrate).
3. Place the sensor on top of the foil. The gauge will display a reading.
4. Use the **um/mils** and **CALIB/ZERO** buttons to adjust the displayed value to match the known thickness of the foil.
5. Repeat for other calibration foils to cover the desired measurement range.

## 7. MAINTENANCE

### 7.1 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents. Keep the sensor clean and free from debris to ensure accurate readings.

### 7.2 Battery Replacement

When the low battery indicator appears on the screen, replace the AAA batteries as described in Section 4.1.

### 7.3 Storage

Store the gauge in its carrying case in a dry, cool place, away from direct sunlight and extreme temperatures. Remove batteries if the device will not be used for an extended period.

## 8. TROUBLESHOOTING

| Problem  | Possible Cause   | Solution  |
|--|--|---|
| Device does not power on                       | Dead or incorrectly installed batteries                                | Replace batteries, ensuring correct polarity.   |
| Gauge powers on but does not take measurements | Internal error or sensor issue   | Remove batteries for 30 seconds, then reinsert to reset the device. If the problem persists, contact support.                   |
| Inaccurate readings                            | Improper calibration, dirty sensor, or incorrect measurement technique | Perform zero and multi-point calibration (Section 6). Clean the sensor. Ensure the sensor is placed firmly and perpendicularly. |
| Display is dim or flickering                   | Low battery  | Replace batteries.  |

## 9. SPECIFICATIONS

| Parameter       | Value                    |
|-----------------|--------------------------|
| Model           | MC996                    |
| Measuring Range | 0 to 1500µm (0 to 59mil) |

| Parameter                            | Value   |
|--------------------------------------|---|
| Resolution                           | 0.1 $\mu$ m (<100 $\mu$ m), 1 $\mu$ m ( $\geq$ 100 $\mu$ m) / 0.01mil |
| Accuracy                             | $\pm(3\%+2\mu\text{m})$ / $\pm(3\%+0.08\text{mil})$                   |
| Minimum Thickness of Metal Substrate | 0.5mm (Ferrous), 0.3mm (Non-Ferrous)                                  |
| Material Type                        | ABS   |
| Power Supply                         | 2 x AAA Batteries   |
| Auto Power Off                       | After 5 minutes of inactivity   |
| Dimensions (Approx.)                 | 4.8" (Height) x 2.6" (Width) x 1.1" (Depth)                           |



Figure 9.1: Approximate dimensions of the MILESEEEY MC996 gauge.

## 10. WARRANTY AND SUPPORT

The MILESEEEY MC996 Digital Coating Thickness Gauge typically comes with a manufacturer's warranty. Please refer to the warranty card included in your package or the seller's terms of sale for specific details regarding warranty duration and coverage.

For technical assistance or warranty claims, it is recommended to contact the seller or manufacturer directly. Please note that some users have reported difficulties in receiving timely customer support from the manufacturer. It is advisable to retain your proof of purchase for any warranty-related inquiries.