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Graigar AR932

User Manual

Smart Sensor AR932 Digital Film/Coating Thickness Gauge

Model: AR932 | Brand: Graigar

1. Introduction

The Smart Sensor AR932 Digital Film/Coating Thickness Gauge is a stable, safe, and reliable instrument designed for fast, accurate, and non-destructive measurement of the thickness of non-magnetic coatings (such as paint, electroplated coating, and film) on magnetic metal substrates. This manual provides comprehensive instructions for the proper use, maintenance, and troubleshooting of your device.

2. Safety Information

Please read and understand all safety warnings and operating instructions before using this instrument. Failure to do so may result in injury or damage to the device.

- Do not attempt to disassemble or modify the device. This will void the warranty and may cause damage.
- Keep the device away from strong magnetic fields, high temperatures, and corrosive environments.
- Ensure the measurement surface is clean and free of debris to ensure accurate readings.
- Handle the sensor probe with care to prevent damage.
- Dispose of batteries according to local regulations.

3. Package Contents

Upon opening the package, please verify that all items listed below are present and in good condition:

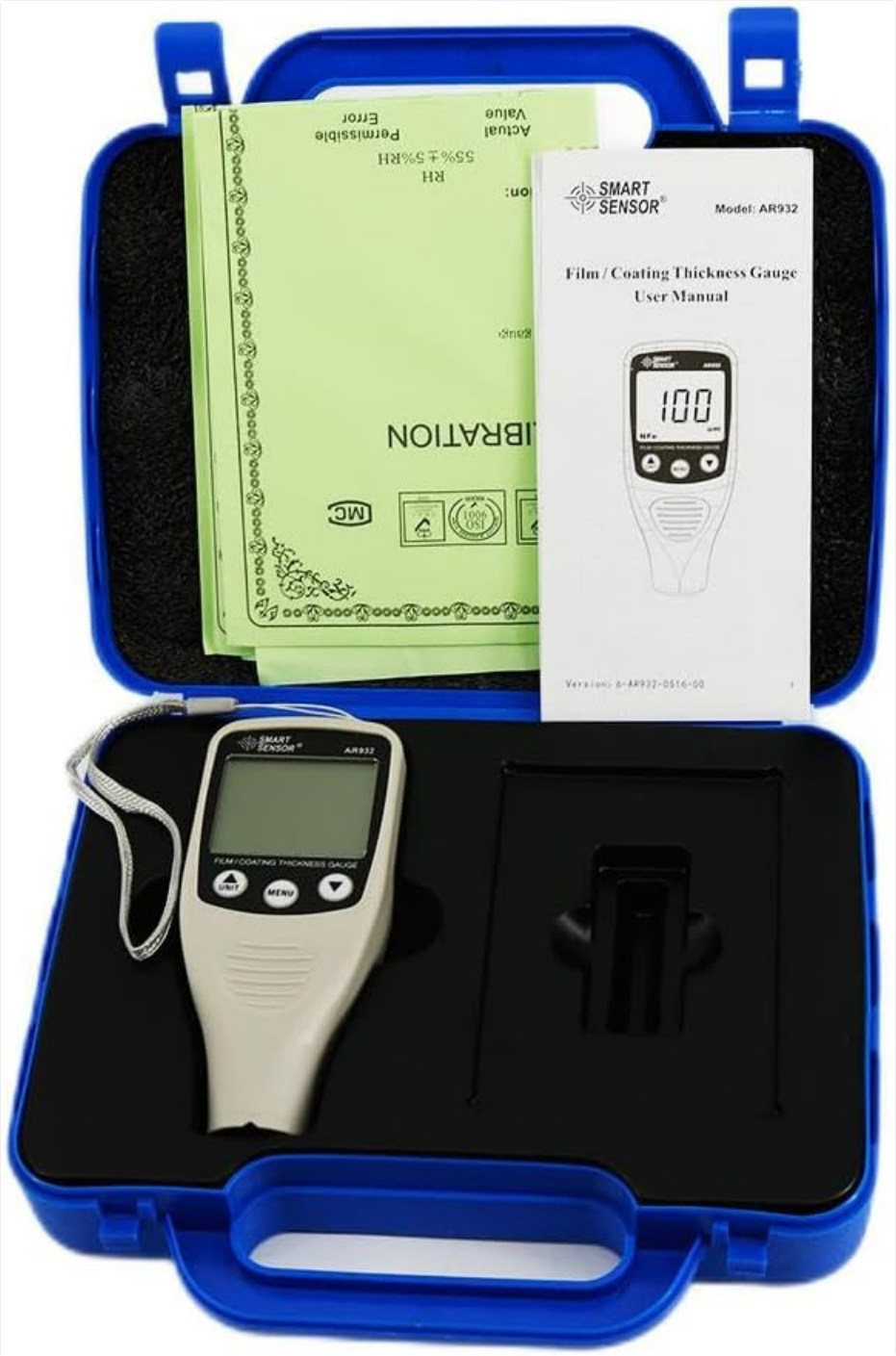

Image: The AR932 thickness gauge, user manual, iron base, and plastic shims neatly arranged inside a blue protective carry case.

- 1 x Smart Sensor AR932 Thickness Meter
- 2 x Iron Base (for calibration)
- 4 x Plastic Shims (for calibration)
- 1 x Carry Box
- 1 x User Manual

4. Product Overview

Familiarize yourself with the main components of the AR932 thickness gauge:



Image: Front view of the AR932 device, highlighting the LCD display, UNIT button, MENU button, and arrow buttons.



Image: Back view of the AR932 device, showing the general specifications label and CE certification mark.



Image: Close-up of the measurement probe located at the bottom of the AR932 device.

- **LCD Display:** Shows measurement readings, units, and menu options.
- **UNIT Button:** Toggles between metric (um) and imperial (mil) units.
- **MENU Button:** Accesses calibration, data storage, and other settings.
- **Arrow Buttons (Up/Down):** Navigates menu options and adjusts values.
- **Measurement Probe:** The sensor at the bottom of the device that contacts the surface for measurement.

5. Setup

5.1 Battery Installation

The AR932 requires two 1.5V AAA batteries (not included).

1. Locate the battery compartment cover on the back of the device.
2. Slide the cover downwards to open the compartment.
3. Insert two AAA batteries, ensuring correct polarity (+/-).
4. Replace the battery compartment cover, sliding it upwards until it clicks into place.



Image: The back of the AR932 device with the battery cover open, revealing the battery slots.

5.2 Power On/Off

- To power on, press any button. The device will perform a self-test and display the last measurement mode.
- The device features an auto power-off function to conserve battery life. It will automatically shut down after a period of inactivity.

6. Operating Instructions

6.1 Basic Measurement

The AR932 automatically identifies the substrate material (magnetic or non-magnetic) and displays it on the LCD.

1. Ensure the device is powered on.
2. Place the measurement probe firmly and perpendicularly onto the surface of the coating to be measured.
3. The thickness reading will be displayed on the LCD.
4. Lift the device from the surface to prepare for the next measurement.

6.2 Unit Selection

Press the **UNIT** button to switch between micrometers (um) and mils (mil).

6.3 Calibration

Regular calibration ensures measurement accuracy. The AR932 supports Zero Calibration, Basic Calibration, and Auto Calibration.

6.3.1 Zero Calibration

Used to calibrate the device to a bare metal substrate (zero coating thickness).

1. Place the probe directly onto the bare iron base (included).
2. Press and hold the **MENU** button to enter the menu.
3. Navigate to the "Zero Calibration" option using the arrow buttons.
4. Confirm the selection. The display should show "0.0".

6.3.2 Auto Calibration

The device can be automatically calibrated using the five provided calibration plates (0, 50, 100, 250, 500 um).

1. Ensure the device is on a stable surface.

2. Access the "Auto Calibration" option via the **MENU**.
3. Follow the on-screen prompts to place the probe on each calibration plate in sequence.
4. The device will automatically adjust its calibration based on the known thicknesses.

6.4 Data Management

- **Data Hold:** The device supports data hold. Refer to the specific button combination in the user manual for activation.
- **Data Storage:** The AR932 can store up to 20 groups of measurement data. Use the **MENU** button to access and manage stored data.
- **Max/Min/Average Function:** The device can display maximum, minimum, and average values of a series of measurements.

6.5 Measurement Modes

- **Single Measurement:** Takes one reading per contact.
- **Continuous Measurement:** Allows for continuous readings as the probe is moved across a surface.

6.6 Product Demonstration Video

Watch this official video for a visual guide on unboxing and basic operation of the Smart Sensor AR932 Digital Film/Coating Thickness Gauge.

▶ **Watch video online**
Smart Sensor AR932 Digital Film/Coating Thickness Gauge

Video: An unboxing and brief demonstration of the Smart Sensor AR932 Digital Film/Coating Thickness Gauge, showing its components and basic measurement function.

7. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** When not in use, store the device in its protective carry case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Battery Replacement:** Replace batteries when the low battery indicator appears on the LCD. Remove batteries if the device will not be used for an extended period.
- **Probe Care:** Keep the measurement probe clean and free of dust or debris. Avoid scratching or damaging the probe surface.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Dead or incorrectly installed batteries.	Check battery polarity; replace with new AAA batteries.
Inaccurate readings.	Device needs calibration; dirty probe; unstable placement.	Perform calibration (Zero or Auto); clean the probe; ensure firm and perpendicular placement.
LCD display is dim or flickering.	Low battery power.	Replace batteries.

Problem	Possible Cause	Solution
Device shuts off unexpectedly.	Auto power-off activated; low battery.	This is normal behavior for auto power-off; replace batteries if low battery indicator is on.

9. Specifications

Parameter	Value
Model	AR932
Measurement Range	0~1500um
Principle of Measurement	Film
Accuracy (0-499um)	±(1.8%um±2um)
Accuracy (499-1700um)	±(2.2%um±2um)
Minimum Measurement Area	25 x 25mm
Minimum Curvature (Convex)	5mm
Minimum Curvature (Concave)	30mm
Minimum Substrate Thickness (Magnetic)	0.2mm
Minimum Substrate Thickness (Non-magnetic)	0.05mm
LCD Backlight Display	Yes
Low Battery Indicator	Yes
Zero Calibration	Yes
Basic Calibration	Yes
Single/Continuous Measurement	Yes
Data Storage	20 groups
Auto Power Off	Yes
Max/Min Function	Yes
Data Hold	Yes
Unit Selection	Yes
Operating Condition	0℃~40℃
Battery	2 x 1.5V AAA battery
Item Weight	75g
Item Size	120 x 52 x 25mm

10. Warranty and Support

Graigar products are manufactured to high-quality standards. For warranty information and technical support, please refer to the contact details provided on the product packaging or visit the official Graigar website. Please retain your purchase receipt for warranty claims.

- **Online Support:** Visit www.graigar.com for FAQs, software updates, and additional resources.
- **Customer Service:** Contact our support team for assistance with product operation, troubleshooting, or warranty inquiries.

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