INSTRUCTION MANUAL
MT155
COATING THICKNESS METER

Introduction

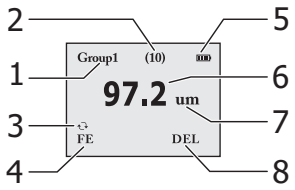
Thank you for your purchase of the Coating Thickness Tester. The MT155 is a compact and handy gauge specifically designed for non-destructive, fast and precise coating thickness measurements. The principal application is for corrosion protection. It is ideal for manufacturers, for offices, specialist advisers, for paint shops, electroplaters, for the chemical, automobile, shipbuilding, aircraft industries and for light or heavy engineering. The gauge is suitable for laboratory, workshop or outdoor use. The probe can work on both principles, magnetic induction or the eddy current principle. Only 1 (one) probe is required for coating measurement both on ferrous and non-ferrous metal substrates. It is adaptable to specific tasks for instance they can be used on special geometries or on materials with special properties. You can select the probe mode via the MENU system.

Features

- Measured Coatings:
  1. Non-magnetic coatings (e.g. paint, zinc) on steel;
  2. Insulating coatings(e.g. paint, anodizing coatings) on no-ferrous metals
- Easy to operate MENU
- Memory for 1500 readings
- Delete single readings or all group readings
- Error indication
- Data transferred to PC via USB for analysis
- Disable Auto-Power-off function via MENU setting
- LCD display with backlight
- V-Groove sleeve

LCD Display

1. Working mode
2. Measured data quantity in the working mode
3. Auto measure mode
4. Ferrous or No-ferrous metals being measured. It will change automatically in the Auto measure mode
5. Battery indication
6. Measure data
7. Unit
8. Delete data, press Back button to delete the current data



Tester Layout

1. LCD display
2. Select key: For ON/OFF, SELECT and OK
3. Up key: For upward selection and working mode switch
4. Clear Key: Calibration Zone of the FE and NFE
5. Housing
6. Back Key: For return or to delete the last measured data
7. Down key: For downward selection or working mode switch
8. Probe
9. Battery cover

Ready to Start

Power on:

Press and hold the POWER button. If the LCD display does not switch on, check if the battery is correctly installed or flat.

Displayed:

Low battery, replace battery immediately. The gauge will take faulty measurements if the voltage is low.

Note: When the power is on, keep away from any metal at least 10cm away before each measurement, zero calibration is recommended.

Inserting/Replacing Batteries

1. Switch off the tester, remove the battery cover and remove batteries.
2. Insert new batteries, observing correct polarity and close the cover.
   - Replace the batteries when the symbol "▭" is displayed.
   - Use alkaline batteries only.
   - Remove the batteries before any long period of non-use to avoid the danger of corrosion.

Function & Operation Instruction

- Press the ⏻ button to switch on the power. The gauge will automatically work in measuring mode.
- Press the **SELECT** button to enter the MENU mode.

Select Working Mode

Working Mode:

- There are 31 working modes in this gauge. Measurement data will not be stored when the gauge is in Group0 measurement mode.
- In the other 30 working modes, 30 measured data can be stored in each mode cycle.
    1. Press the **SELECT** button to enter the **MENU**
    2. Press the **UP/DOWN** button to select WORKING MODE
    3. Press the **SELECT** button to enter WORKING MODE
    4. Press the **UP/DOWN** button to select WORKING MODE
    5. Press the **SELECT** button for **OK**.

Select Measure Mode (Probe)

The probe has 3 (three) different modes:

AUTO: The probe can automatically select the working mode. When placed on steel (magnetic substrates), it will work in magnetic induction principle. When placed on no-ferrous metals, it will work in eddy current principle.

Fe: The probe works in magnetic induction principle.

No-Fe: The probe works in eddy current principle.

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to select WORKING MODE
3. Press the **SELECT** button to enter WORKING MODE
4. Press the **UP/DOWN** button to select WORKING MODE
5. Press the **SELECT** button for **OK**.

Settings

Select Unit

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT THE SETTING**
3. Press the **SELECT** button to **ENTER THE SETTING**
4. Press the **UP/DOWN** button to **SELECT UNIT**
5. Press the **SELECT** button to **ENTER**
6. Press the **UP/DOWN** button to **SELECT**
7. Press the **SELECT** button for **OK**

Backlight Brightness Setting

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT THE SETTING**
3. Press the **SELECT** button to **ENTER THE SETTING**
4. Press the **UP/DOWN** button to **SELECT BACKLIGHT**
5. Press the **SELECT** button to **ENTER**
6. Press the **UP/DOWN** button to adjust the brightness of the **BACKLIGHT**
7. Press the **BACK** button to **RETURN**.

Auto Power Off

You can disable **AUTO-POWER-OFF** via **MENU** system or the gauge will automatically power off in ±3 minutes if not in use.

1. Press the **SELECT** button to enter the **menu**
2. Press the **UP/DOWN** button to **SELECT THE SETTING**
3. Press the **SELECT** button to **ENTER THE SETTING**
4. Press the **UP/DOWN** button to select **AUTO-POWER-OFF**
5. Press the **SELECT** button to **ENTER**
6. Press the **UP/DOWN** button to **SELECT**
7. Press the **SELECT** button for **OK**

Adjust Gray Scale (Contrast)

Contrast adjustment: dot matrix LCD display may not be good in different temperatures & humidity, you can adjust gray scale to get a better LCD display.

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT THE SETTING**
3. Press the **SELECT** button to **ENTER THE SETTING**
4. Press the **UP/DOWN** button to **SELECT GRAY SCALE**
5. Press the **SELECT** button to **ENTER**
6. Press the **UP/DOWN** button to **ADJUST GRAY SCALE**
7. Press the **SELECT** button for **OK**

System Information

System version number

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT THE SETTING**
3. Press the **SELECT** button to **ENTER THE SETTING**
4. Press the **UP/DOWN** button to **SELECT INFORMATION**
5. Press the **SELECT** button to **ENTER**
6. View the **SYSTEM INFORMATION**
7. Press the **BACK** button to **RETURN**

Data View

View the stored measured data in each mode.

All-delete: Delete all measured data in group.

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT VIEW**
3. Press the **SELECT** button to **ENTER VIEW**
4. Press the **UP/DOWN** button to **SELECT WORKING MODE**
5. Press the **SELECT** button to **ENTER**
6. Press the **UP/DOWN** button to **VIEW EACH DATA**
7. Press the **BACK** button to **RETURN** or Press the **SELECT** button to **DELETE THIS GROUP DATA**

Calibration and Measurement

The gauge can calibrate Zero-point of **Fe** or **Non-Fe**, or **DELETE** wrong calibrated zero-point of **Fe** or **Non-Fe**. It is recommended that the zero-point be calibrated before use.

Zero-point Calibration of Fe or Non-Fe

- Press and hold the **ZERO** button to Zero-point the calibration of the **Fe** or **Non-Fe** measuring mode
- In the **Fe** mode, Zero-point calibration of **Fe**.
- In the **Non-Fe** mode, Zero-point calibration of **Non-Fe** (Less than 50UM(μm) is effective).

Delete Fe or Non-Fe Zero-point

1. Press the **SELECT** button to enter the **MENU**
2. Press the **UP/DOWN** button to **SELECT CALIBRATION**
3. Press the **SELECT** button to **ENTER CALIBRATION**
4. Press the **UP/DOWN** button to delete the **ZERO-POINT** of **Fe** or **Non-Fe**
5. Press the **SELECT** button for **OK**
6. Press the **BACK** button to **RETURN**

Delete Functions

In MENU system, you can find following function

- **Delete current data:** in measurement interface, you can delete the last data entry by pressing the **BACK** button.
- **Delete all data:** Enter menu-view; you can delete all current data and statistics
- **Delete Group data:** Enter menu-view-group data; you can delete this group data by pressing the **SELECT** button

Trouble Shooting

The following list of error messages explains how to identify and eliminate faults.

Err1 Fe probe fault
Err2 Non-Fe probe fault
Err3 Both probes.
Err4 Fe probe fault
Err5 Non-Fe probe fault

Specifications

Sensor probe	Fe	Non-Fe
Working principle	Magnetic induction	Eddy current principle
Measuring range	0~1350μm	0~1350μm
	0~53.1mils	0~53.1mils
Guaranteed tolerance (of reading)	0~1000um ±(2.5%+2um)	0~1000um ±(2.5%+2um)
	1000~1350um (±3.5%)	1000~1350um (±3.5%)
	0~39.3mils (±2%±0.08 mils)	0~39.3mils (±2%±0.08 mils)
	39.3~53.1mils (±3.5)	39.3~53.1mils (±3.5)
Precision	0~100um (0.1urn)	0~100um (0.1urn)
	100um~1000um (1um)	100um~1000um (1um)
	1000um~1350um (0.01 mm)	1000um~1350um (0.01 mm)
	0~10mils (0.01mils)	0~10mils (0.01mils)
	10~53.1mils (0.1mils)	10~53.1mils (0.1mils)
Minimum curvature radius	1.5mm	3.0mm
Diameter of Minimum area	7.0mm	5.0mm
Minimum measurable thickness	0.5mm	0.3mm
Overload display		— — —
Working temperature	0°C ~ 40°C (32°F ~ 104°F)	
Working relative humidity	20% ~ 90%	
Power supply	2 x AAA 1.5V Batteries	
Dimensions (H x W x D)	113.5mm x 54mm x 27mm	
Weight	110g	

MAJOR TECH (PTY) LTD

South Africa

www.major-tech.com

sales@major-tech.com

Australia

www.majortech.com.au

info@majortech.com.au