Metrix+™
Innovative Excellence

# ULTRASONIC THICKNESS GAUGE

## UTM 90CT

*Through coating measurement with A & B scan functions*

## Measuring principle

Ultrasonic thickness gauge determines the sample thickness by measuring the amount of time it takes for a sound pulse, generated by an ultrasonic transducer, to travel through a test piece and reflect from the inside surface or a far wall.




## Applications

Applicable to measure the thickness of many materials, like steel, cast iron, aluminium, red copper, brass, zinc, quartz glass, polyethylene, PVC, gray cast iron, nodular cast iron and other ultrasonic wave well-conductive materials. It is widely used in almost all kinds of industries.

## Features

- Multi-mode with Pulse-Echo for thickness and Echo-Echo for through coating measurements.
- A scan & B scan functions for in depth inspection of material properties.
- Difference and reduction rate display.
- Max, min and current values can be displayed simultaneously.
- Selectable update rate.
- Data storage and recall.

## Technical Specifications

| Model | *Metrix+* UTM 90CT |
|---|---|
| Display | 2.4” color OLED with 320 x 240 pixel and contrast of 10000:1 |
| Measuring range | Pulse-Echo Mode: 1.2 ~ 200mm(in Steel)<br>Echo-Echo Mode: 3 ~ 50mm Through-Coating measurement |
| Units | mm/ inch |
| Resolution | Selectable: 0.01mm/inch, 0.1mm/inch |
| Sound Velocity | 500 ~ 9999 m/s |
| Display modes | Normal, min/max, difference/ reduction rate(%), A-scan, B-scan |
| Rectify mode | RF+, RF-, HALF+, HALF-, FULL |
| V-path correction | Automatic |
| Update rate | Selectable 4Hz, 8Hz, 16Hz |
| Alarm setting | Min and max alarms with dynamic waveform color change on alarm |
| Power | 2 x AA batteries |
| Operating time | approx. 40hrs |
| Power off | Selectable as always ON, or Auto OFF on 5/ 10/ 20 mins of inactivity |
| Operating temperature | -10°C ~ 50°C |
| Dimensions | 156 x 75 x 38 mm (H x L x B), weight 270g (incl. batteries) |

| Standard accessories | Main unit, TC510B probe, couplant, manual, batteries, carry case |
|---|---|

## Functions overview

- **A- scan**: A scan mode or amplitude mode display shows the amplitude of the reflected waveform on the Y-axis and time on X-axis. So, the vertical axis gives the strength of echo wave while horizontal axis gives the depth of penetration. Using this information, we can detect any flaws present in the sample.
- **B-scan**: B scan gives a cross sectional plot of the sample, by moving the probe along the sample. At each point, the waveform amplitude (like in A scan) is displayed, with X axis as time. This helps us detect flaws with depth in the scanned cross section of the sample.




- **Difference/ Reduction rate(%) mode**: Difference mode displays the difference between the actual and normal value. Reduction rate shows the % of the thickness reduction when the sample becomes thin. This helps us identify parts of a sample which may be thin due to bending, etc.




- **Max/ min mode:** This mode shows the current, minimum and maximum thickness values simultaneously for detecting change in material thickness values.



Selection of probes:

| Model | Type | Frequency | Contact Diameter | Measurement Range | Temperature Range |
|---|---|---|---|---|---|
| PT-08 | Standard | 5MHz | 11mm | 0.8 to 100.0mm | -10 to 70°C |
| TC510B | Standard | 5MHz | 13.5mm | 1.2 to 200.0mm | -10 to 70°C |
| TM550 | Small tube | 5MHz | 5mm | 0.8-60 mm | -10 to 70°C |
| ZT-12-2 | Cast iron | 2MHz | 17mm | 4.0 to 508mm | -10 to 70°C |
| PT-06 | Small tube | 7.5MHz | 8mm | 0.8 to 30mm | -10 to 70°C |
| PT-04 | Fingertip | 10MHz | 6mm | 0.7 to 12mm | -10 to 70°C |
| GT-12-2 | High-Temperature | 5MHz | 15mm | 4 to 80mm | -20 to 300°C |

PT-08



TC510B(included)



TM550



ZT-12-2



PT-06



PT-04



GT-12-2



Model and Specifications subject to change without notice.