

MT600

Multi-Mode Ultrasonic Thickness Gauge



Product Overview

MT600 multi-mode ultrasonic thickness gauge is an updated product. With more attention to user experience and innovative features such as visual experience, protection grade, automatic alarm and etc. Colour TFT display (320 x 240 TFT LCD) with adjustable background, it can be used in low visibility. IP65 degree of protection, can effectively prevent harsh environments of oil, dust and other corrosion. It also has voice broadcast function, alarm 0.1mm/0.001mm/0.0001mm resolution, built-in communication and penetrate the coating mode and normal mode functions etc. It can measure the substrate thickness without the need to dispose of coating directly. Its unique non-destructive testing performance makes it the best solution for the thickness testing of closed pipes, containers etc. It is widely used in petroleum, chemical, metallurgy, shipbuilding, aviation, aerospace and other fields because of monitoring corrosion thinning degree of various pipes and pressure vessels. It can also be used for precise measurement of sheet metal and machined parts. This professional precision instrument is to improve production efficiency and qualified rate, cost saving.

For pricing or any further information, please contact Omni Instruments Ltd.

Technical Specifications

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Measuring Range

Accuracy

Measurement Frequency

Display

Resolution

Sound Velocity Range

Calibration

Working Modes

Units

Working Languages

Memory

Communication Interface

Power Source

Data Printing

Automatic Power Saving

Appearance Properties

Weight

Technical Parameters

Support two working modes : Pulse-echo mode , (0.65 ~ 600)mm Echo-echo mode, (2.5 ~ 100)mm

$\pm 0.04\text{mm}$ ($\leq 10\text{mm}$) ; $\pm 0.4\%H$ ($>10\text{mm}$) ;

Single-point measurements per second four times, 10 times a second scan mode

320x240 TFT color LCD screen, adjustable backlight brightness

0.1mm/0.01mm/0.001mm switchable

(1000 ~ 9999)m/s (it can measure the sound speed of material with known thickness)

Zero calibration, two-point calibration, automatic error correction system

Single-point measurement, the max value measurement, differential measurement

Metric, Imperial (free to switch)

Chinese / English (free to switch)

Memory for up to 100 files (up to 100 values for each file) of stored values

Support bluetooth and USB2.0 communication, the host program can be updated online

You can use portable bluetooth thermal printer to print measurement reports

Two "AA" Size, 1.5 volt alkaline batteries , operating time is more than 100 hours (EL backlight off)

Auto sleep and auto power off function to conserve battery life.

Material: ABS plastic; size: 150mm × 76mm × 38mm;

295g

Features

- Capable of performing thickness measurements on a wide range of materials including metals (such as steel, cast iron, aluminum, copper and so on), plastic, ceramics, composites, epoxy, glass and other ultrasonic well-conductive materials.
- Sealed metal case, delicate design, special design for defense against bad site environment, it can anti vibration, shock and electromagnetic interference.
- With HD colourful LCD display and intelligent operation, it can display the measurement results intuitively and provide a good experience to user.
- With two thickness measurement modes: Pulse-Echo mode and Echo-Echo mode, it can measure the thickness through the coating without the coating being removed.
- With large storage capacity and lower power design, it can standby super long time without power.
- Attach with USB data proceeding software, it can connect with PC for data's analysis, storage and printing.
- Capable for compatibility with a variety of probes with different frequency.
- With high accuracy and high resolution, it can support 0.001 display resolution.
- With probe-zero calibration and two point calibration functions, it can correct the system error automatically.
- Equipped with narrow impulse composite crystal high accuracy probe, it has small dead zone and excellent performance.
- With high brightness E.L. backlight display, it is convenient for using in dim light environment.
- Support communication with Bluetooth printer on site, more convenient for service.
- Auto alarm when exceeding the measuring range.
- With auto sleep, auto shutdown and other power saving functions as well as battery rest capacity indicating function.

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Measuring Principle

The digital ultrasonic thickness gauge determines the thickness of a part or structure by accurately measuring the time required for a short ultrasonic pulse generated by a transducer to travel through the thickness of the material, reflect from the back or inside surface, and be returned to the transducer. The measured two-way transit time is divided by two to account for the down-and-back travel path, and then multiplied by the velocity of sound in the material. The result is expressed in the well-known relationship

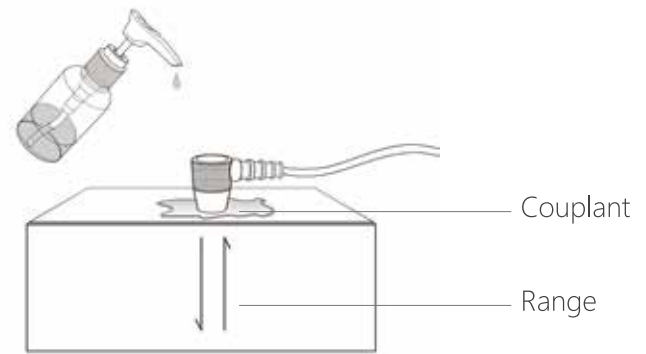
$$H = \frac{v \times t}{2}$$

Where:

H - Thickness of the test piece.

v - Sound Velocity in the material.

t - The measured round-trip transit time.



To make sure the probe working properly, it needs to use couplant to isolate the air between the probe surface and the measured workpiece surface. The liquid used for the coupling between the probe and workpiece is called as couplant.

Transducer Selection

Model	Freq	Diam	Measuring Range	Lower limit	Description
N05	5MHz	10mm	1mm ~ 600.0mm (In Steel)	Φ20mm×3.0mm	Normal Measurement
N05/90°	5MHz	10mm	1mm ~ 600.0mm (In Steel)	Φ20mm×3.0mm	Normal Measurement For thin pipe wall or small curvature pipe wall measurement
N07	7MHz	6mm	0.65mm ~ 200.0mm (In Steel)	Φ15mm×2.0mm	For high temperature (lower than 300°C) measurement.
HT5	5MHz	12mm	1mm ~ 600.0mm (In Steel) 3.0mm ~ 300.0mm (In Steel)	30mm	for thick, highly attenuating, or highly scattering materials
N02	2.5MHz	14mm	40mm (in Gray Cast Iron HT200) P-E: 2~600mm (In Steel)	20mm	Normal Measurement
P5EE	5MH	10mm	E-E: 2.5~100mm (In Steel)	Φ20mm×3.0mm	and trough-coating thickness testing



HT5



P5EE



N02



N05



N05/90°



N07

Configuration

	No.	Item	Quantity	Note
Standard Configuration	1	Main body	1	
	2	Probe P5EE(5MHz)	1	
	3	Couplant	1	
	4	Instrument Case	1	
	5	Operating manual	1	
	6	Alkaline battery	2	
	7	USB Cable	1	
	8	Datapro Software	1	
Optional Configuration	1	Probe N05 (5MHz)		
	2	Probe HT5(5MHz)		
	3	Probe N02(2.5MHZ)		
	4	High temperature couplant		

