MT600

Multi-Mode Ultrasonic Thickness Gauge

Product Overview

MT600 multi-mode ultrasonic thickness gauge is a upgraded product. We pay more attention to user experience and innovative features such as visual experience, protection grade, automatic alarm and etc..Color TFT display (320×240 TFT LCD) with adjustable backlight, allow the user to work at worksites with low visibility. IP65 degree of protection, can effectively prevent harsh field environments of oil, dust and other corrosion. It also has voice broadcast function, automatic alarm., 0.1mm/0.01mm/0.001mm resolution, bluetooth communication and penetrate the coating mode and normal mode functions and etc.. It can measure the substrate thickness without the need to dispose of coating directly. Its unique non-destructive testing performance provide the perfect 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.

Technical Specifications

Technical Specifications	Technical Parameters
Measuring Range	Support two working modes：Pulse-echo mode，(0.65 ~ 600)mm Echo-echo mode, (2.5 ~ 100)mm
Accuracy	±0.04mm（≤10mm）；±0.4%H(>10mm)；
Measurement Frequency	Single-point measurements per second four times, 10 times a second scan mode
Display	320x240 TFT color LCD screen, adjustable backlight brightness
Resolution	0.1mm/0.01mm/0.001mm switchable
Sound Velocity Range	(1000 ~ 9999)m/s（it can measure the sound speed of material with known thickness）
Calibration	Zero calibration, two-point calibration, automatic error correction system
Working Modes	Single-point measurement, the max value measurement, differential measurement
Units	Metric, Imperial (free to switch)
Working Languages	Chinese / English (free to switch)
Memory	Memory for up to 100 files (up to 100 values for each file) of stored values
Communication Interface	Support bluetooth and USB2.0 communication, the host program can be updated online
Power Source	You can use portable bluetooth thermal printer to print measurement reports
Data Printing	Two "AA" Size, 1.5 volt alkaline batteries，operating time is more than 100 hours (EL backlight off)
Automatic Power Saving	Auto sleep and auto power off function to conserve battery life.
Appearance Properties	Material: ABS plastic; size: 150mm × 76mm × 38mm;
Weight	295g

Features

- Capable of performing thickness measurements on a wide range of materials including metals （such steel, cast iron, aluminum, copper and so on），plastic, ceramics, composites, epoxies, glass and other ultrasonic well-conductive materials.
- Sealed metal case delicate design, special designed for defense against bad site environment, it can anti vibration, shock and electromagnetic interference.
- With HD colorful LCD display and intelligent operation interface, it can display the measurement results intuitively and provide a good display experience to user.
- With two thickness measurement modes: Pulse- Echo mode and Echo-Echo model, it can measure the thickness through the coating without calculating the coating thickness.
- With large storage capacity and lower power design, it can standby super long time above months.
- Attach with USB data proceeding software, it can connect with PC for data's analysis, storage and printing.
- Capable for compatible with a variety of probes with different frequency and size.
- With high accuracy and high resolution display, 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 accurate measurement.
- With high brightness EL backlight display, it is convenient for using in dim light environment.
- Support communication with Bluetooth printer on site, more conveniently for use.
- 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.

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.

Couplant

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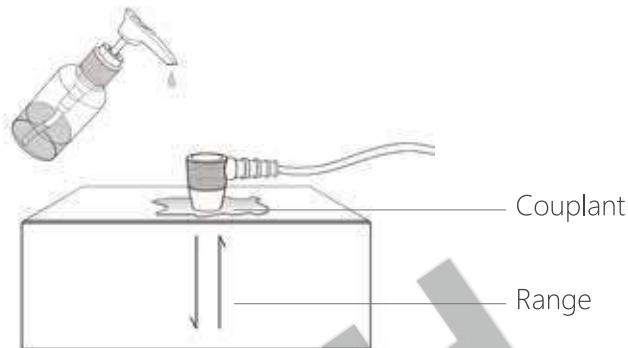
To make sure the probe working properly, it needs to use couplant to isolate the air between the probe surface and the measured workpiece surface. The liquid used for the coupling between the probe and workpiece is called as couplant.

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

HT5   P5EE   N02   N05   N05/90°   N07
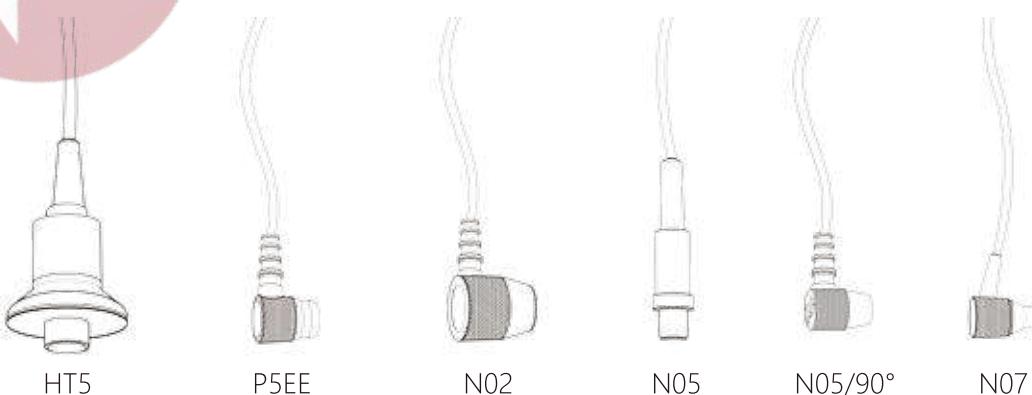
Configuration

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

ABS carry case

USB Cable

Couplant

AA alkaline battery

Manual

Data-pro software

Probe

Main body