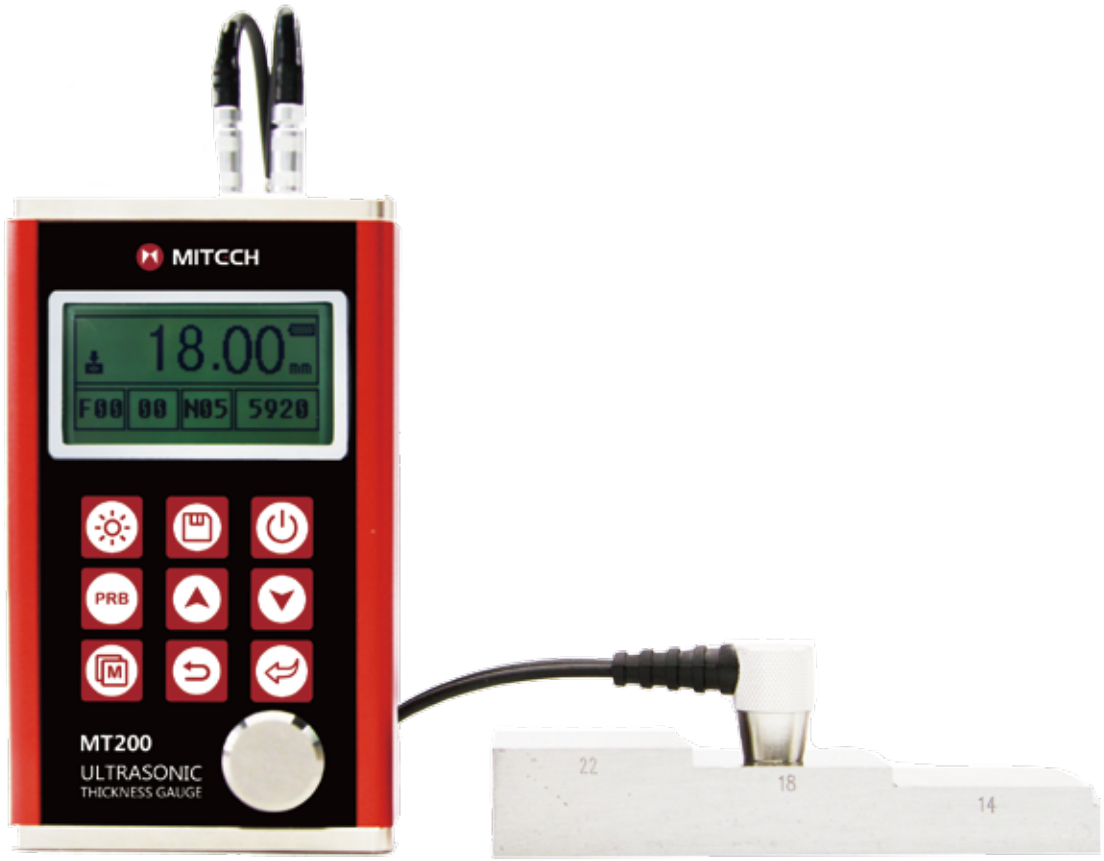
MT200

Digital Ultrasonic Thickness Gauge



Product Overview

The model MT200 is a digital ultrasonic thickness gauge. Based on the ultrasonic principle, the instrument is capable of measuring the thickness of various materials, such as metal, plastics, ceramic, glass and many other good ultrasonic conductors. It can also measure the velocity of all kinds of materials. Compared with the traditional measurement methods, the advantages of ultrasonic thickness gauge is exposed to one side of the workpiece to complete the measurement. Its unique non-destructive testing performance provides 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.

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

Measurement and data acquisition solutions

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Technical Specifications

Technical Specifications	Technical Parameters
Display	4.5 digits LCD with EL backlight
Measuring Range	(0.75 ~ 300)mm (in Steel)
Sound Velocity Range	(300~19999) m/s
Resolution	0.1/0.01mm
Accuracy	± (0.5%Thickness+0.01) mm
Measurement Frequency	Single-point measurements per second four times, 10 times a second scan mode
Storage	Memory for 100 files (up to 100 values for each file) of stored values
Alarm Function	lUpper and lower limit can be pre-set. It will alarm automatically when the result value exceeding the limit.
Power Supply	Two "AA" size, 1.5 volt alkaline batteries
Working Time	100 hours typical operating time (EL backlight off)
Communication	USB2.0
Outline	Extruded aluminum body suitable for use under poor working conditions
Outline Dimension	132mm × 76mm×32mm
Weight	345g

Features

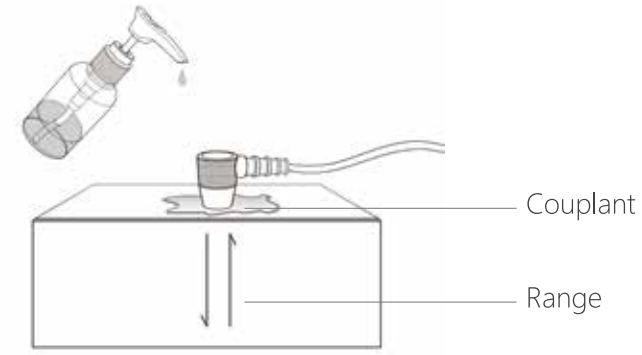
- Suitable for measuring metal (such as steel, cast iron, aluminum, copper, etc.), plastics, ceramics, glass fiber and any other good ultrasonic conductors.
- Dual straight beam probes with different frequencies and crystal sizes are available.
- Zero calibration, two-point calibration, automatic error correction system.
- Known thickness, sound speed can be measured, in order to improve the measurement accuracy.
- Coupling status indicator showing the coupling status.
- E.L. backlight for easy use in dim light environments.
- Remaining battery indicator can display the remaining power in real time.
- Auto sleep and auto power off function to conserve battery life.
- Small, portable, high reliability for harsh operating environments, anti-vibration, anti-shock and anti-electromagnetic interference.

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.

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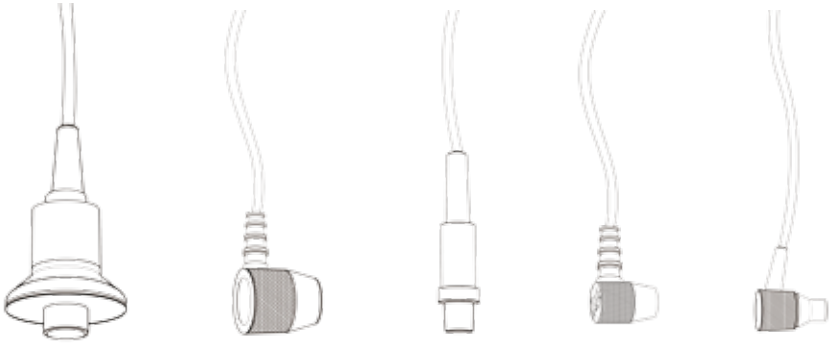
Transducer Selection

Model	Freq	Diam	Measuring Range	Lower limit	Description
N05	5MHz	10mm	1.2mm-230mm (In Steel)	Φ20mm×3.0mm	Normal Measurement
N05/90°	5MHz	10mm	1.2mm-230mm (In Steel)	Φ20mm×3.0mm	Normal Measurement
N07	7MHz	6mm	0.75mm ~ 80.0mm (In Steel)	Φ15mm×2.0mm	For thin pipe wall or small curvature pipe wall measurement
HT5	5MHz	12mm	3.0 ~ 200mm (In Steel)	30mm	For high temperature (lower than 300°C) measurement.
N02	2.5MHz	14mm	3.0mm ~ 300.0mm (In Steel) Under 40mm (HT200)	20mm	for thick, highly attenuating, or highly scattering materials



HT5 N02 N05 N05/90° N07

Configuration

	No.	Item	Quantity	Note
Standard Configuration	1	Main body	1	
	2	Transducer N05/90°	1	
	3	Couplant	1	
	4	Instrument Case	1	
	5	Operating Manual	1	
	6	Alkaline battery	2	
	7	Screw driver	1	
Optional Configuration	1	Transducer: N05		
	2	Transducer: N07		
	3	Transducer: N02		
	4	Transducer: HT5		
	5	High temperature couplant		
	6	Cable		
	7	Software		

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