MITECH

MT660

Multi-Mode Ultrasonic Thickness Gauge

- Professional manufacturer, best quality with competitive price
- Recommended by the world UT NDT inspection association for training and examination
- Core technology with independent intellectual property rights, certificate of CE, GOST and etc..

Product Overview

MT660 multi-mode ultrasonic thickness gauge is the newest promoted upgraded product by Mitech. It pays more attention to user experience and functional innovation. Adopted with 320*240 colorful LCD display, it can show you clear measurement result under dimly light and strong sunshine environment, improved the visual experience greatly. Sealed aluminum-magnesium alloy case delicate design, smaller volume, better quality are specially designed for defense against oil, dust in the bad sit environment. With intelligent warning function, it will promote automatically when beyond the setting range, it is convenient for reading. It can meet the efficient collecting material's multiple points' thickness accurate testing demand. It supports 0.001 high accuracy display and Bluetooth communication. With through coating mode and common mode, its unique performance of capable for testing thickness through the coating provides efficient solution for testing the workpiece of coated surface or corrosion materials. It can measure the workpiece directly without needing to get rid of the surface coating before measurement. It's widely used for monitoring the production equipments' various pipelines and pressure vessel corrosion reducing degree in the fields of petroleum, chemical, metallurgy,

shipbuilding, aviation, aerospace and so on. It also can be used for making accurate measurement to various plates and machining parts. It is the necessary professional precision instrument for improving the production efficiency and qualification rate as well as saving cost.

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%Hmm(>10mm) ; H refer to the thickness of workpiece
Measurement Speed	7 times per second for single point measurement, 16 times per second for scan mode measurement
Display	Colorful 320X240 TFT LCD display with adjustable backlight
Resolution	0.1mm/0.01mm/0.001mm selectable
Sound Velocity Range	(1000~9999) m/s(Capable for measuring the sound velocity of the object with known thickness)
Probe Calibration	Zero-point calibration, two pint calibration
Thickness Measurement Mode	Single Point measurement, min/max measurement, differential measurement
Units	Metric/Imperial unit selectable
Working Language	Chinese/English Selectable
Data Storage	Capable for saving and managing 100 groups of thickness data (up to 100 values for each group)
Communication Interface	Support for Bluetooth and USB 2.0 communication, the main unit procedure can be updated online.
Data Printing	Capable for using portable Bluetooth thermal printer to print the measurement report.
Power Source	With two "AA" size alkaline batteries, it can work above 30 hours continuously with default brightness.
Auto Power Saving	It has auto screen standby, auto sleep, auto shutdown and other power saving functions.
Appearance	Material: Aluminum-magnesium Alloy
Size	120mm×67mm×31mm

Features

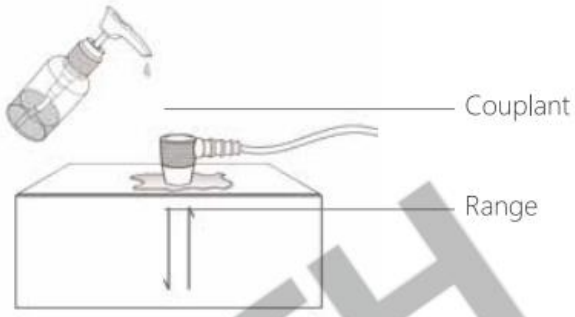
- Capable of performing thickness measurements on a wide range of materials including metals (such steel, cast iron, aluminum, copper and so on) , plastic, ceramics, composites, epoxies, glass and other ultrasonic well-conductive materials.
- Sealed metal case delicate design, special designed for defense 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 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.

Probe Selection

Model	Freq	Probe Dia	Measuring Range	Lower Limit	Description
N05	5MHz	10mm	1.0mm ~ 600mm (in steel)	Φ20mm×3.0mm	Normal Measurement
N05/90°	5MHz	10mm	1.0mm ~ 600mm (in steel)	Φ20mm×3.0mm	Normal Measurement
N07	7MHz	6mm	0.65mm ~ 200mm (in steel)	Φ15mm×2.0mm	For thin pipe wall or small curvature pipe wall measurement
HT5	5MHz	12mm	1.0mm ~ 600mm (in steel)	30mm	For high temperature (lower than 300°C) measurement.
N02	2.5MHz	14mm	3.0mm ~ 600mm (in steel)	20mm	For thick, highly attenuating, or highly scattering materials
P5EE	5MHz	10mm	Pulse-Echo : 2.0mm ~ 600mm (in steel) Echo-Echo : 3.0mm ~ 100mm (in steel)	Φ20mm×3.0mm	Trough-coating thickness testing

Configuration

	NO.	Type	Sketch	Remarks
Standard Config	1	Main Unit	1	
	2	Narrow Impulse Thickness Probe P5EE	1	
	3	Micro Diameter Probe N07 (7MHz)	1	
	4	Couplant	1	
	5	ABS Instrument Case	1	
	6	Documents with Instrument	1	
	7	two "AA" size alkaline batteries	2	
	8	USB Communication Cable	1	
	9	Data Proceeding Software	1	
	10	Portable Bluetooh Thermal Printer	1	
Optional Config	1	Normal Thickness Probe N05(5MHz)		
	2	High Temperature Probe HT5 (5MHz)		
	3	Coarse Grain Probe N02 (2.5MHz)		
	4	High Temperature Couplant		
	5	Normal Thickness Probe No5/90°(5MHz)