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Multi-Mode Ultrasonic Thickness Gauge MT180/ MT190



Overview

The model MT180/MT190 is a multi-mode ultrasonic thickness gauge. Based on the same operating principles as SONAR, the instrument is capable of measuring the thickness of various materials with accuracy as high as 0.1/0.01 millimeters.

The multi-mode feature of the gauge allows the user to toggle between pulse-echo mode (flaw and pit detection), and echo-echo mode (eliminate paint or coating thickness).

Main Function

- Multi-mode: Pulse-Echo mode and Echo-Echo mode.
- Capable of performing measurements on a wide range of materials, including metals, plastic, ceramics, composites, epoxies, glass and other ultrasonic wave conductive materials.
- Transducer models are available for special applications, including coarse grain materials and high temperature applications.
- Probe-Zero function, Sound-Velocity-Calibration function
- Two-Point Calibration function.
- Single point mode and Scan mode. Seven measurement readings per second in single point mode, and sixteen per second in Scan Mode.
- Coupling status indicator showing the coupling status.
- Units: Metric/Imperial unit selectable.
- Battery information indicates the remaining capacity of the battery.
- Auto sleep and auto power off function to conserve battery life.
- Optional software to process the memory data on the PC.

Configuration

	No	Item	Qty.	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	AA size
Optional Configuration	7	Probe N05/90 ^o (5MHz)		See Table3-1
	8	Probe N07(7MHz)		
	9	Probe HT5(5MHz)		
	10	Data Pro Software	1	
	11	Communication Cable	1	

Product Specifications

- Display: 4.5 digits LCD with EL backlight.
- Range: Pulse-Echo mode: (0.65~600)mm (in Steel).
Echo-Echo mode: (3~30)mm for MT180, (3~60)mm for MT190.
- Sound Velocity Range: (1000~9999) m/s.
- Resolution: 0.1mm/0.01mm
- Accuracy: $\pm (0.5\% \text{ Thickness} + 0.01)$ mm, depends on materials and conditions
- Memory for up to 20 files (up to 99 values for each file) of stored values.
- Power Source: Two “AA” size, 1.5 Volt alkaline batteries. 100 hours typical operating time (EL backlight off).
- Communication: USB1.1.
- Outline dimensions: 150mm×74mm×32 mm.
- Weight: 245g

Operating Conditions

Operating Temperature: $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$;

Storage Temperature: $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Relative Humidity $\leq 90\%$;

In the surrounding environment users should avoid vibration, strong magnetic field, corrosive medium and heavy dust.

Transducer Selection

Model	Freq MHz	Diameter mm	Measuring Range	Lower limit	Description
P5EE	5	12	Echo-Echo mode: (3~30)mm for MT180 (3~60)mm for MT190.	Φ 20mm × 3.0mm	Through Coating Measurement
N05	5	10	1mm~600.0mm (In Steel)	Φ 20mm × 3.0mm	Normal Measurement
N05 /90°	5	10	1mm~600.0mm (In Steel)	Φ 20mm × 3.0mm	Normal Measurement
N07	7	6	0.65mm~200.0mm (In Steel)	Φ 15mm × 2.0mm	For thin pipe walls or small curvature pipe wall measurement