



ULTRASONIC FLAW DETECTOR MFD500B



Product Overview

Based on ultrasonic principle, digital ultrasonic flaw detector MFD500B with 320*240 TFT LCD, it can test, orient, evaluate and diagnose various flaws such as crack, lard, air hole in workpiece' s interior swiftly and accurately without any destruction. It can be used in Laboratory as well as in engineering filed. With range of 0-9999mm, it can meet the requirement for general defect inspection in manufacturing industry, metallurgical industry, metal processing industry, chemical industry and so on. Low power design with large capacity and high performance lithium battery module, it can be long standby for months. High quality with low price, it is the first choice for the practical economic model for ultrasonic testing equipment.

Technical Parameters

- Range: 0 to 9999mm, at steel velocity
- Material Velocity: 300 to 15000m/s

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- Display Delay: -20 to 3400 μ s
 - Probe Delay/Zero Offset : 0 to 99.99 μ s
 - Sensitivity Leavings:>60dB (flat-bottomed deep hole 200mm Φ 2)
 - resolution :>40dB (5P14)
 - Noise Level: \leq 8%
 - Test Modes: straight ,angle, dual element and thru-transmission
 - Pulse Repetition Frequency ranges from 10 Hz to 1000 Hz
 - Pulse Energy: Low (300V), Medium (500V) and High (700V) spike pulse.
 - Damping: 100 Ω , 200 Ω and 400 Ω
 - Bandwidth (amplifier bandpass): 0.5 to 15MHz
 - Gate Monitors: Two independent gates controllable over entire sweep range
 - Rectification: Positive half wave, negative half wave, full wave, RF
 - System Linear Error: Horizontal: +/-0.1% FSW, Vertical: 0.25% FSH, Amplifier Accuracy +/-1 dB.
 - Reject (suppression): 0 to 80% full screen height
 - Units: Inch or millimeter
 - Transducer Connections: BNC or LEMO
 - Power Requirements: AC Mains 100-240 VAC, 50-60 Hz
 - Overall Dimensions:263Hx170Wx61D mm
 - Relative Humidity:(20 ~ 95)% RH
 - Power Supply:DC 9V
 - Operating Temperature: -10°C to 50°C
 - Storage Temperature: -30°C to 50°C

Features

Display

Hi-resolution (320x240 pixels) full digital TFT LCD with adjustable brightness, it is capable of providing high contrast viewing of the waveform from bright, direct sunlight to complete darkness.

The hi-resolution TFT LCD display with fast 60 Hz update gives an “analog look” to the waveform providing detailed information that is critical in many applications including nuclear power plant inspections.

Range

Up to 6000 mm in steel; range selectable in fixed steps or continuously variable, suitable for use on large work pieces and in high-resolution measurements.

Pulse

Pulse Energy selectable among Low (300V), Medium (500V) and High (700V)

Pulse Repetition Frequency adjustable from 10 Hz to 1 KHz in 1 Hz increments

Damping selectable among 100 Ω , 200 Ω and 400 Ω for optimum probe performance

Test Modes including Straight, Angle, Dual and Thru-transmission

Receiver

Sampling: 10 digits AD Converter at the sampling speed of 160 MHz

Rectification: Positive Halfwave, Negative Halfwave, Fullwave and RF

Analog Bandwidth: 0.5MHz to 15MHz capability with selectable frequency ranges (automatically set by the instrument) to match probe for optimum performance.

Gain: 0 dB to 110 dB adjustable in selectable steps 0.1 dB, 2 dB, 6 dB, and locked

Gates

Two fully independent gates offer a range of measurement options for signal height or distance using peak triggering.

The echo-to-echo mode allows accurate gate positioning for signals which are extremely close together.

Gate Start: Variable over entire displayed range

Gate Width: Variable from Gate Start to end of displayed range

Gate Height: Variable from 0 to 99% Full Screen Height

Alarms: Threshold positive/negative

Memory

Memory of 100 channel files to store calibration set-ups

Memory of 1000 wave files to store A-Scan patterns and instrument settings.

All the files can be stored, recalled and cleared.

Video Recorder

Screen scenes can be captured as movie files. About 2 minutes movie can be saved to the inside memory. They can be re-played using the instrument or the PC software delivered with the instrument.

Video Recorder is useful in many situations, convenient for those who want to analyze the probing activities later.

Functions

- Semiautomatic two point calibration: Automated calibration of transducer zero offset and/or material velocity
- Flaw Locating: Live display Sound-path, Projection (surface distance), Depth, Amplitude,
- Flaw sizing: Automatic flaw sizing using AVG/AVG or DAC, speeds reporting of defect acceptance or rejection.
- Digital Readout and Trig. Function: Thickness/Depth can be displayed in digital readout when using a normal probe. Sound-path, Surface Distance and Depth are directly displayed when using angle probe.
- Both the DAC and the AVG method of amplitude evaluation are available.
- Curved Surface Correction Feature
- Crack Height Measure Function
- Weld Figure Feature
- Magnify Gate: spreading of the gate range over the entire screen width
- Video Recording and Play
- Auto-gain Function
- Envelope: Simultaneous display of live A-scan at 60 Hz update rate and envelope of A-scan display
- Peak Hold: Compare frozen peak waveform to live A-Scans to easily interpret test results.
- A Scan Freeze: Display freeze holds waveform and sound path data
- B Scan display feature
- AWS D1.1 Feature

Real Time Clock

The instrument clock keeps running tracking the time.

Communication

High Speed USB2.0 Port

The DataPro software helps manage and format stored inspection data for high-speed transfer to the PC. Data can be printed or easily copied and pasted into word processing files and spreadsheets for further reporting needs. New features include live screen capture mode and database tracking.

Battery

Internal rechargeable Li-ion battery pack rated 7.2V at 8800 mAh

8 hours nominal operating time depending on display brightness

8-10 hours typical recharge time

Knob

Operating adjustments are easily and quickly made using the rotary knob.

Configuration

	No.	Item	Qty	Remarks
Standard config.	1	Main unit	1	with full digital TFT LCD Display
	2	Straight Beam Probe	1	4 MHz, $\Phi 10$
	3	Angle Beam Probe	1	4 MHz, 8 mm \times 9 mm, 60°
	4	Probe Cable	1	Q9-C5, or optional C9- C5
	5	Battery Module	1	8.8 amp hour (MB-02)
	6	Power Adapter	1	
	7	Supporting pillar	1	
	8	Attached files	1	
	9	Datapro Software	1	
	10	USB Cable	1	

	11	Power Cable	1	
	12	ABS Case	1	
Optional config.	1	Protective Cover for Main Unit		
	2	Dual-crystal Straight Probe		

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