MFD620C

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..

Digital Ultrasonic Flaw Detector

Product Overview

MFD620C intelligent digital ultrasonic flaw detector, Mitech concentrated years meticulously developed premium product, has a lot of advantages like unique design, sophisticated manufacturing, convenient operation, powerful function. It had received customers' favored since its inception. 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. With full digital 320X240 TFT LCD display, it can select the operating interface style and the LCD brightness according to environment. With humanizing interface design, the waveform show delicately. It can find the defects clearly in full screen. Single hand capable for holding operation, the curve making, probe calibration and other conventional operation can be completed automatically. Core processor CPU with 400M main frequency, it can complete the complex run quickly and realize intelligent defect

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analysis. Low power design with large capacity and high performance lithium ion battery module， it can work more than 8 hours continuously. Full English master-slave menu, emphasizing on user experience, collecting shortcut keys, digital shuttle rotary wheel, cross menu three operating ways in one body, customers with different habits can operate it freely. It supports many languages. Its waterproof, oil proof, dustproof function can achieve IP65 protection level. It is the necessary professional precision instrument for defect detection, quality control, on-line safety monitoring and life evaluation in fields of oil, chemical, metallurgy, shipbuilding, aviation, railways and so on.

Technical Specifications

Technical Specifications	Technical Parameters
Measuring Range	(0 ~6000) mm in steel
Bandwidth	0.5 to 10MHz automatic matching according to the probe frequency.
Material Velocity	(1000 ~ 15000) m / s
Dynamic Range	≥ 36dB
Vertical Linear Error	≤ 3%
Horizontal Linear Error	≤ 0.2%
Resolution	> 40dB (5P14)
Sensitivity Leavings	60dB (flat-bottomed deep hole 200mmΦ2)
Rejection	(0 to 80)% Linear without affecting the linearity and gain.
Noise Level	≤ 10%
Probe Type	straight beam probe, angle beam probe, dual element probe, through-transmit probe.
Gates	Wave-getting Gate, Wave-losing Gate, Single Gate Reading, Dual Gate Reading.
Alarm	Beep Alarm and LED light Alarm.
Power Supply	DC 9V
Working Time	> 8 hours
Overall Dimensions	280 × 220 × 70(mm)
Operating Temperature	(-10 ~ 50) ℃
Relative Humidity	(20 ~ 95)% RH
Pulse Energy	200V, 300V, 400V, 500V, 600V selectable, suitable for various probe.
Pulse Width	(30 ~ 510)ns range with continuous adjustment to match the different frequency probes
Probe Damping	100Ω、200Ω、400Ω selectable to meet different requirements for resolution and sensitivity.
Sampling	10 digits AD Converter at the sampling speed of 160MHz, waveform of highly fidelity.
Rectification	Positive half wave, negative half wave, full wave, RF.
Gate Reading	optional for single gate and double gate reading mode, peak readings within the gate.
Gain	0 dB to 110 dB adjustable in selectable steps 0.1 dB, 1 dB, 2dB and 6dB.
Probe Connections	BNC or LEMO.

Note: All above indicators are got with 2.5 MHz probe and full wave detecting method.

Features

Gate Alarm ——— Gate position, gate width and gate height can be adjustable at will. The B gate can chose to set wave-getting alarm OR wave-losing alarm. The beep in gate and LED light can be alarmed or closed (the LED light alarm is very effective under the noise environment). The capture mark function can show the captured echo characteristics in the gate.

REAL-TIME CLOCK ——— Record and save the tracking record of detecting date and time in real time.

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Data Storage — The instrument is built with mass storage. The data and files will not be lost because of instrument power breakdown. The storage contents included channel parameters, waveform pictures and video files. It supports 50 groups of flaw detecting parameters channels. It can preset well for the combination parameters of various types of probes and instruments. It can add locks to each channel and change the channel name as well as set testing standards for each industry freely. It can save 1000 pictures of detecting echo signals and parameters. It can realize communication with PC.

Video Function — The instrument supports for saving the inspection process as video file and save it to the internal storage card. Video file can be replayed through the instrument. The instrument can support maximum 2 hours of video movies. Playback the inspection process video makes great convenience for learning detecting but also saved for the future analysis to the inspecting process.

Communication — High speed USB2.0 0TG communication interface with USB cable connecting instrument and computer, it can realize data file transfer and work for USBHost mode to operate the external connecting U disk.

Performance Self-checking — The instrument can automatically test the instrument probe's combined performance indicators (including horizontal linearity error, vertical linearity error, resolution, dynamic range, sensitivity range, sensitivity margin) and can generate the testing report.

Battery Module — The large capacity lithium battery module is easy to be assembled and disassembled. It can be charged independently but also charged by inserting wire. Its continuously working time is more than 8 hours.

Flaw Detecting Function

- Flaw Detecting Standard: Built-in the commonly used flaw detecting standards for each industry. It can be directly called for using convenient and fast.
- Welding Figure: It can set the weld parameters, show the welding figure and defects as well as echo path directly during testing.
- Automatic Calibration: Automatic calibration for P-Delay and probe angle (K value), automatic measuring function for sound velocity.
- Peak Memory: real-time search the defect with highest wave and record the defect peak echo.
- Defect Positioning: real-time display the defect level, depth (vertical) and sound path position.
- Defect quantify: real-time display the defect equivalent dB value
- Defect quality: With echo envelope waveform, it is convenient for judging according to artificial experience.
- Curved Surface Correction: Used for flaw detecting for the curved surface workpiece, it can display the defect circumferential position and depth in real time.
- Digital-analogy dual-use: without needing do AVG curve, using the bottom wave gain method to measure dB value to achieve the dual-use for digital-analogy, it is easy to operate.
- ΦValue Calculation: It can auto-calculate and display the defects equivalent size after finding the peak echo of defect when the straight probe detecting to the forgings.
- DAC/AVG: Automatic produced curves without limitation for sampling point, it can do offset and correction for the curves. The curves float automatic with the gain and expand automatic with sound path as well as move automatic with time delay. It can show any aperture AVG curve.
- Gain: 0 dB to 110 dB adjustable in selectable steps 0.1 dB, 1 dB, 2dB and 6dB. Unique automatic gain adjustment and scanning gain function make the flaw detecting fast and accurate.
- AWS D1.1: The American Welding Society standard provides a dynamic reflector "defect level" for all types AWS weld inspection applications. It can avoid manual calculation and improve the detection efficiency

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- Crack Depth: with endpoint diffraction wave, it can measure and calculate the crack depth automatically.
- Envelope in Gate: Amplify the echo details, easy for echo analysis
- Continuous Record: real-time record the waveform, save and playback it.
- Waveform freeze: freeze the waveform showed on the screen for conveniently analysis the defect.
- Echo Code: Display 1-6 times echo display area in different colors, distinguish the first and second wave better, easy to determine the defect position.
- Encode Color B Scan: real-time scanning, cross section display,make the detecting result more visually.

Configuration

	No.	Item	QTY	Note	Remarks
	1	Main Unit	1		
Standard Configuration	2	Straight Beam Probe	1	4MHz,10mm	
	3	Angle Probe	1	4MHz,8*9,60°	
	4	Probe Cable	1	BNC-LEMO00	
	5	Battery Module	1	or LEMO01-LEMO00	
	6	Power Adapter (Charger)	1	MB-03	
	7	Power Cable	1		
	8	Instrument Case	1		
	9	Support Pillar	2		
	10	Data Proceeding Software	1		
	11	USB Communication Cable	1		
	12	Attached files	1		
Optional Configuration	1	Protective Cover for Main Unit			
	2	Various Probes			

Protective Cover

The Whole Unit

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