



## GDUD-PTM Portable Digital Ultrasonic Flaw Detector for Insulator



### General Information

Ultrasonic Flaw Detector is a non-destructive testing device used for material defect evaluation and location, wall thickness measurement, etc. and suitable for various large workpieces and high resolution measurement requirements.

### Features

- TFT true color screen.
- Using leading embedded digital system technology, the electrical performance indicators of the instruments are designed and manufactured according to the standard EN 12668.1 - 2000.

- Advanced and safe lithium polymer battery and power management technology, automatic alarm and protection. The automatic standby screen saver can be set to make the equipment more energy-efficient and longer-lasting, and to ensure continuous and efficient flaw detection.
- Application software that integrates intelligent and powerful processing functions, direct-reading user interface and operation mode, or digital knob one-button operation mode.
- Large-capacity detection parameters preset channel, convenient for users to operate on different detection objects. Powerful data storage and static analysis capability, coupled with real-time flaw detection date and time synchronization clock tracking and recording, make detection easier.
- With variable width square wave pulse generator, and variable voltage transmitter to get variable transmitting power. Multi-stage damping settings allow the probe to be optimally matched to the instrument.
- Good amplifier characteristics and frequency band characteristics. The amplifier has an accuracy of 0.1dB, with wide-band and narrow-band operation modes, and probe frequency can be measured real time, which provides better detection results when the user detects different materials.
- With wide detection range(up to 6 meters) and powerful signal resolution, min. 0.1mm continuous adjustable range. Choose a suitable range and the corresponding probe for good near-field resolution.
- Excellent high-speed hardware real-time processing and optimized design of pulse repetition frequency control function to meet the best effect for different crystal grains and detection distance. The echo display has dynamic effect and no hysteresis.
- Automatic calibrations for probe and curvature surface, which optimizes the coupling between the probe and test object and ensures accuracy.

- With distance-amplitude (DAC) curve function, program-controlled sound and light alarm control.
- With high-speed USB interface, easily communicate with the computer, support computer management processing functions and online programming.
- Light aluminum alloy hand held housing, which has excellent anti-interference performance. Meet IP65 protection class.

## Specification

### 1. Transmitting/Receiving

Transmitting voltage	600V
Sampling frequency	100MHz(Max.)
Pulse repetition frequency	60Hz
Impedance matching	50Ω/500Ω
Working mode	Self-transmitting and receiving/ Single transmitting and single receiving/ Penetrating
Resolution	≥36dB(5N14)
Average electrical noise	$\leq 80 \times 10^{-9} V / \sqrt{Hz}$

## 2. Amplify/detect

Sensitivity margin	≥60dB(200mm deep, Φ2Flat bottom hole)
Gain	0~110dB, step 0dB/0.1dB/1dB/2dB/6dB for selection
Amplifier accuracy	±1dB
Vertical linearity error	≤3%
Automatic gain	10%-90%
Dynamic Range	≥35dB

## 3. Time base

Detection range	10-6000mm, 0.1,1 and 10mm step automatic setting
Horizontal linearity error	≤0.1%
Sound speed	1000-16000m/s, step is 1m/s
Zero offset (probe delay)	0-500.0us
Display pan	0-1000.0mm;0.1, 1mm step automatic setting

## 4. Curve

DAC curve	Distance-amplitude curve(DAC), 2~10pcs reference point
	4 additional correctable dB curves

## 5. Signal Processing

Signal suppression	0-90%, linear
Detection gate (1 piece)	Starting point / width / height continuously adjustable
	Positive/negative alarm in the gate
	Output (sound and light alarm) control
	Signal measurement point selection in the gate
Measurement mode	Sound path/horizontal distance/depth real-time calculation display
	TOF (time of flight) measurement real-time calculation display
	Dynamic display of sound path refraction
	Static reading measurement calculation
	Optional reference quantification and positioning

## 6. Flaw detection function

Channel	20groups
Storage	500 echo signals
Display	Full freeze/reference freeze
Envelope curve	Peak envelope record display
Real time clock	Date/time tracking, standard clock timing

Interface	USB port, supporting computer communication and management
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## 7. Display

Display	High-bright, true color TFT display, 5.7 inches
Frequency	NTSC(60Hz)

## 8. Structure and use environment

Battery	Lithium polymer battery, working time $\geq 10$ hours
Dimension and weight	210mmx165mmx50mm,1.8kg(with battery)
Environment temperature	-5°C--60°C
Relative humidity	20-90%RH