iThick-7000

Ultrasonic Thickness Gauge

Video

Contact us

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Product Features and Application

Product Features

- Features A-scan, B-scan, and numerical display modes, with the numerical display mode including regular, differential, and maximum/minimum capture modes to meet various measurement requirements.
- Equipped with automatic ranging, automatic freeze, automatic E-blanking, automatic gain, and other functions to enhance measurement convenience and accuracy.
- Thickness alarm function: Changes the color of thickness values and sounds a buzzer alarm when measurements exceed the upper or lower limits. Probe coupling prompt: Displays thickness values in white font and sounds a buzzer prompt when coupling is good.
- Bandwidth of 1MHz-20MHz, gain of 72dB with step adjustment, automatically adjustable averaging times, multiple selectable update rates, diverse filters, abundant probe types, multiple measurement modes, and an effective range of 0.15-3200mm (longitudinal wave in carbon steel).
- Can save 520 files, with each file recording 252 sets of thickness values, totaling 130,000 sets. Uses a grid file format for easy access and selection of storage locations.
- Includes functions such as automatic shutdown (sleep mode), buzzer alarm, upper computer communication, backlight adjustment, etc., to adapt to various working environments and needs.
- The keyboard has 9 clearly defined keys for easy operation. The menu interface allows adjustment of multiple parameters, such as measurement range and mode.
- Includes bundled Data View upper computer software for data statistics, analysis, archiving, and report printing.

Product Application

- Used to measure the thickness of metal products such as steel plates and aluminum plates, ensuring the precise thickness of products like automobile body panels and aircraft frames.
- Can measure the thickness of concrete columns and walls to assess their strength, check the thickness of floor concrete to ensure uniformity, and is also used for metal corrosion inspection to measure thickness reduction due to external corrosion in a non-destructive manner.
- Measures the thickness of metal pipes, containers, and plates to provide important data for quality control during production processes. Detects material uniformity and defects in welding, casting, and other processes.

Instrument Interface

1.Screen **2.Keyboard** **3.Zero Calibration Block**

Button Function

1.Virtual Function Buttons: Execute the functions indicated at the corresponding positions on the screen;
2.Storage Button: Press briefly to toggle between the menu interface and the thickness measurement interface; Press and hold to store data;
3.On/Off/Calibration Button: Press briefly to activate the calibration function; Press and hold to power on/off the device;
4.Up Button; 5.Down Button; 6.Left Button; 7.Right Button;

Interface Display

Normal Mode

1.Thickness Reading 2.From left to right: Probe Type, Gain, Measurement Mode, Measurement Unit
3.Store Current Thickness Value 4.A-Scan Snapshot Interface 5.Battery Power Display
6.Material Sound Velocity 7.Thickness Value Storage Number

Difference Mode

This interface displays the difference (the difference between the measured thickness value and the nominal thickness), the reduction rate (the percentage of the difference to the nominal thickness), and simultaneously shows the numerical values of both the current measured thickness and the nominal thickness.
1.Nominal Value 2.Difference Value 3.Drawdown Rate

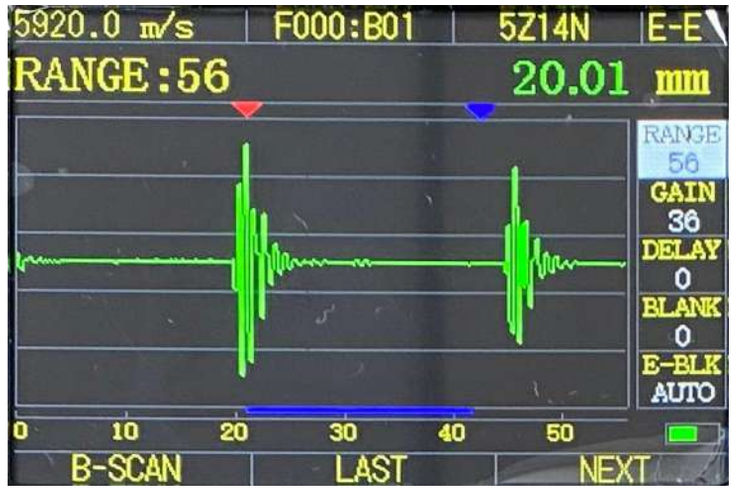
Maximum Value Capture Mode

In this mode, when the user continuously inspects the material thickness, it captures the minimum and maximum thickness values in real-time.
1.Thickness Reading 2.Maximum Value Detected 3.Minimum Value Detected

Interface Display

A-Scan Interface

The user can directly view the colored ultrasonic signal waveform on the screen. By appropriately adjusting only three parameters: Gain (GAIN), Blanking (BLANKING), and Gate (GATE), based on the waveform, an accurate thickness reading can be obtained.



1.A-Scan Waveform Display 2.Current Thickness Range 3.A-Scan Parameters
4.B-Scan Interface Identification 5.Switch to Previous Item 6.Switch to Next Item
7.Triangle Icon Pointing to Measurement Poin 8.Current Probe Model

B-Scan Interface

The B-Scan function involves moving the probe along the surface of the workpiece while maintaining good coupling throughout the process. The image display area shows a cross-sectional view of the workpiece based on thickness values, allowing observation of the bottom contour of the tested work-piece.

1.B-scan Waveform Image 2.Minimum Thickness Value in Current B-Scan Image
3.B-Scan Thickness Values 4.Reset B-Scan Image

Menu Interface

Screen Display Menu Interface:

This menu interface provides multiple parameter adjustment options, including range selection, measurement mode, view mode, detection mode, probe type, file number, function configuration, parameter configuration, and system settings;

Range Selection

Sets the measurement range, with seven options to switch between: 0X, 1X, 2X, 3X, 4X, 5X, and 6X; the range spans from 50mm to 3200mm;

Measurement Mode

This device offers four modes: P-E (Pulse-Echo), E-E (Echo-Echo), ME-E (Multiple Echo), and I-E (Interface-Echo).

View Mode

The view mode includes three options: "Normal", "Difference", and "Maximum Value Capture".

Menu Interface

Rectification Mode

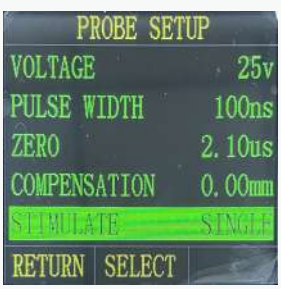
Sets the detection mode for the A-scan waveform. There are five display modes available: RF (Radio Frequency), Phase-Reversed RF, Positive Half-Wave, Negative Half-Wave, and Full Wave. The default setting is RF mode.

Probe Mode

The instrument is equipped with built-in single-crystal and dual-crystal probes. The probe frequency range is from 2.5 to 15 MHz, and the crystal size ranges from 6 to 20 mm.

Probe Type

This mode allows for modification of probe parameters, including averaging, filtering, voltage, pulse width, zero point, compensation, and excitation.



Menu Interface

Grid Flie

This instrument features powerful storage capabilities, capable of storing up to 100,000 thickness values in a grid file format for easy access and selection of storage locations. The storage location can be selected arbitrarily through adjustment buttons. Data stored within the instrument can be imported into a computer via USB communication.

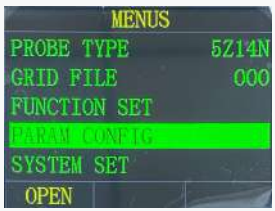
Function Configuration

Function configuration includes: waveform filling, waveform freezing, automatic gain, automatic range, automatic E blanking;

Menu Interface

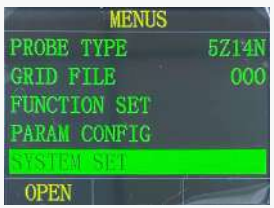
Parameter Setting

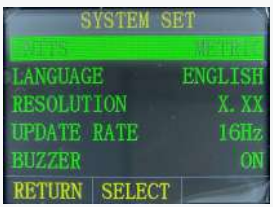
- This interface can set the nominal thickness, ranging from 0.2 to 33200mm
- Alarm upper/lower limit, ranging from 0 to 3200mm
- B scan upper/lower limit, ranging from 0 to 3200mm



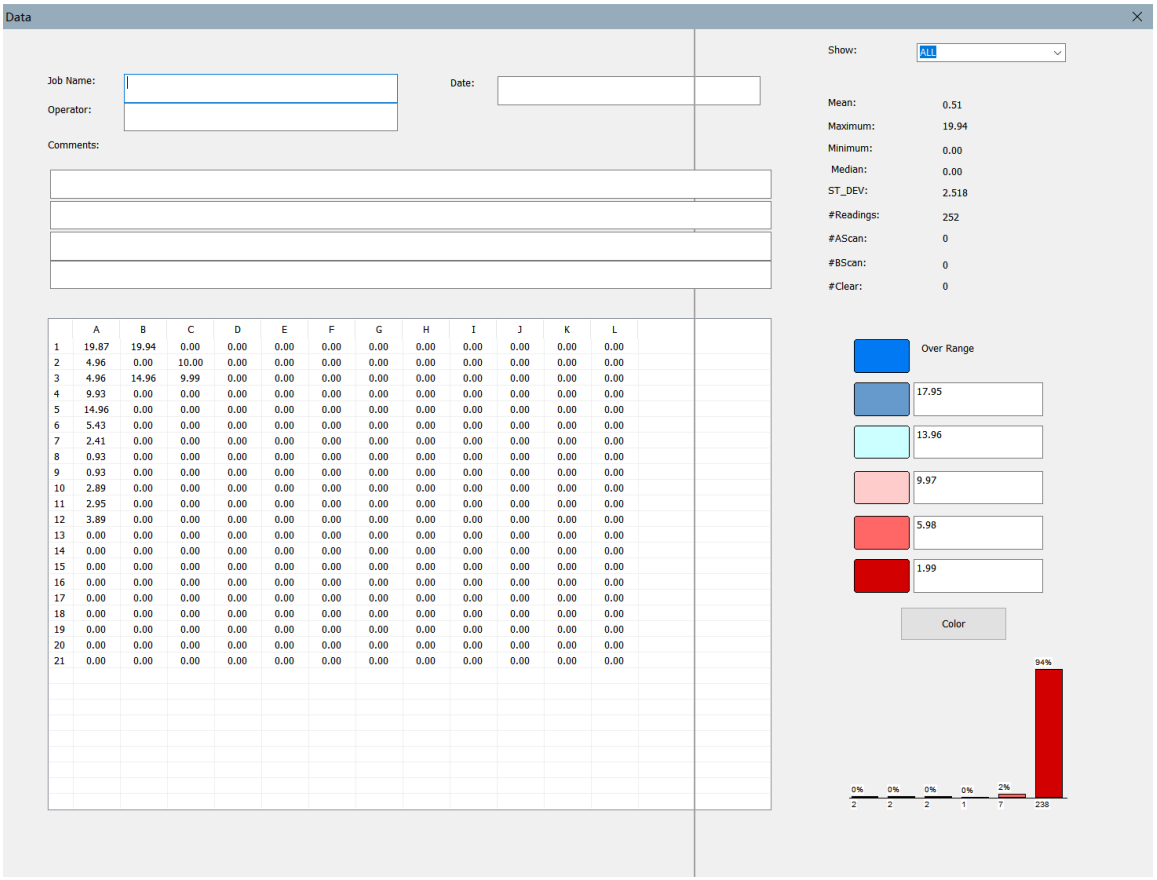
System Setting

This interface can set the unit, language, resolution of the instrument. In the imperial system, you can set X.XXXX; update rate, up to 16Hz; buzzer, screen brightness, auto-matic shutdown, 5, 10, 20 minutes





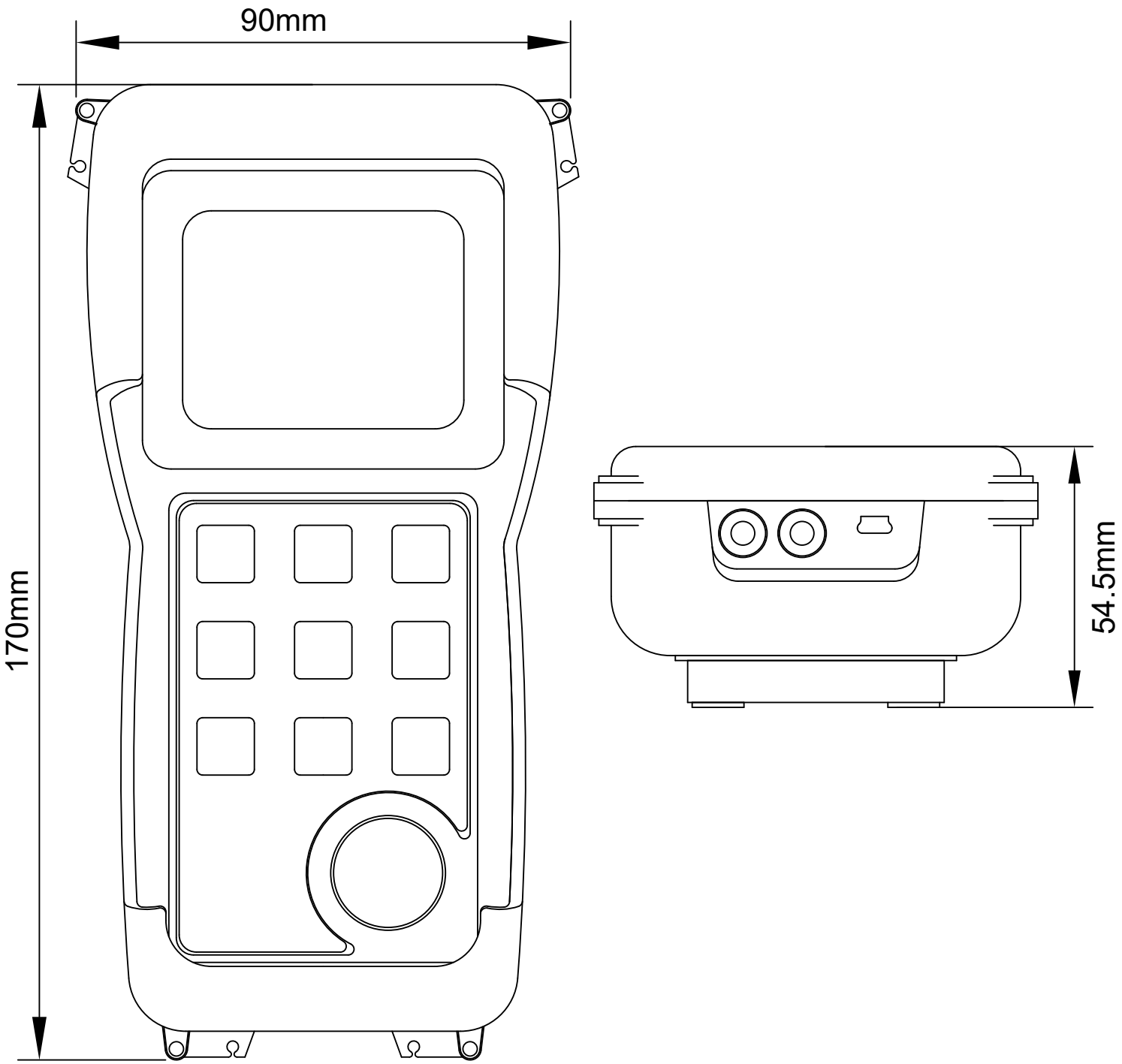
Host Computer Software Connection



	A	B	C	D	E	F	G	H	I	J	K	L
1	19.87	19.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	4.96	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	4.96	14.96	9.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	9.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	14.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	5.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	2.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	2.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	3.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The instrument has a powerful software connection function, which can perform statistics, analysis, archiving, and report printing on data.

Instrument Dimension



Mikrosize®

Technical Parameters

Bandwidth	1MHz～20MHz
Receiving gain	72dB, step pace 1dB, 6dB
Average	Average number of times 0 to 64 automatically adjusted
Update rate	4Hz, 8Hz, 16Hz
Filter	Broadband, 5M, 10M, 15M
Probe type	single crystal, double crystal
Pulse mode	Square waves, two-sided waves
Transmit voltage	25V～300V, 25Vstep pace
Pulse width	25ns～300ns, 5ns step pace
Pulse frequency	400Hz-3200Hz auto-adjustment
Specialized function	A-Scan, B-Scan
Calibration mode	Automatic zero point calibration, automatic sound velocity calibration
View mode	Normal, difference, maximum value capture
Measuring range	0.15～3200mm(Longitudinal wave carbon steel)
Detection mode	Full wave, positive half wave, negative half wave, RF, Invert to RF
Measurement mode	P-E(pulse-echo), E-E(echo-echo), I-E(interface-echo), ME-E(multiple echo)
Detection range	0X-25mm(steel), 1X-100mm(steel), 2X-200mm(steel), 3X-400mm(steel), 4X-800mm(steel), 5X-1600mm(steel), 6X-3200mm(steel)
Data storage	520 files can be saved, each file can record 252 sets of thickness values, for a total of 130,000 sets.
Auxiliary functions	Auto Gain, Auto Range, Auto Blanking E, Auto Freeze, Auto average, Auto Shutdown (Hibernation),Buzzer alarm, upper computer communication, Backlight Adjustment
Unit	Metric system, English system
Language	Chinese，English
Probe interface	DUAL LEMO-00 C5
Weight	228g, no battery
Battery	Two 1.5V AA batteries
Output interface	MINI USB，data export to the host computer
Size	153mm×76mm×37mm
Display screen	2.4-inch 320×240 IPS_LCD
Working temperature	-10℃~55℃

Standard Delivery

Items	Qty	
Main Unit	1 PC	
Probe	Optional	
Alkaline battery	2 PCS	
Coupling agent	1 Bottle	
Screwdriver	1 PC	
Instrument case	1 PC	
User Manual	1 Copy	
Product warranty card	1 Copy	
Product certificate	1 Copy	

Optional Delivery

Items	Qty	
Software	1 PC	
USB Cable	1 PC	

Model	TC510	5Z14N	DL15
Type	double crystal 5M	single crystal 5M	single crystal 15M
Frequency	5MHz	5MHz	15MHz
Diameter of contact area	10mm	20mm	6.35mm
Measuring range	1~400.0mm	4～3200.0mm	0.15～25.0mm
Allowable contact temperature	-10～70℃	-10～70℃	-10～70℃
Picture