

Color Screen A-Scan Snapshot

Digital Thickness Gauge



UM-4 Series

YUSHI INSTRUMENTS is the fastest growing manufacturer of thickness gauges in the market. We are dedicated to high-tech thickness measurement technology to solve various thickness measurement problems. UM-4 is a new generation thickness gauge launched by YUSHI INSTRUMENTS. The breakthrough technology provides a better performance thickness gauge for the same budget. It greatly improves the performance of the previous ultrasonic thickness gauges with better measurement stability and repeatability. It is widely used in the wall thickness measurement of the pipelines, pressure vessels and storage tanks in petrochemical, electric power, shipbuilding and manufacturing industries.

The industry's first economical all-digital thickness gauge

The all-digital thickness gauges need to convert the analog ultrasonic signal into a digital signal, then the digital signal is processed, and finally a high-performance thickness measurement capability is obtained. The function of A-scan snapshot, zero-crossing measurement technology, and high resolution of the UM-4 series are all based on the all-digital technology.

Innovative A-scan snapshot function, Marking the entry of economical thickness gauges into the all-digital era

UM-4 Series provide the function of A-scan waveform display firstly in the same class products. Ultrasound is no longer an invisible and intangible abstract concept. The user can see the ultrasonic signal waveform directly on the screen to verify the correct of the thickness reading, analyze the cause of the problem, and help the user find a solution to the problem.



Break through zero-crossing measurement technology

Based on all-digital technology, by using the zero-crossing measurement technology, the measured value is not influenced by echo amplitude, attenuation coefficient of material, the height of the gain and gate etc. It has high measurement stability and reliability.

Clear and bright color LCD display

Can be read clearly in dim, strong sunlight or from very bad angles. It has a fairly good viewing angle performance, and the four axial aspects can also achieve a viewing angle close to 180 degrees.

Larger memory, more convenient storage function

100,000 thickness values can be stored, which is 20 to 200 times in the same class products;

Use the grid storage files first in the domestic, 15 thickness values can be displayed on the screen, and its position in the grid can be displayed at the same time for users to browse the stored thickness data conveniently.

USB 2.0 Full Speed interface;

Powerful DataView data statistics and management software;

001	A	B	C
01	0.202	0.202	
02	0.201	0.232	
03	0.206	0.205	
04	0.203	0.229	
05	0.212		
RETURN		SAVE	CLEAR

With through Coating Function
Removing paint/coating is not required

We first launched the UM-1D thickness gauge with through coating technology in domestic before, and now UM-4D and UM-4DL also have this widely acclaimed function. This function is achieved by measuring two consecutive bottom echoes of the substrate.

There are more advantages in this mode:

1. Zero point calibration is not required ;
2. High stability, the measured value is not affected by the probe pressure, coupling layer thickness and dust stains on the workpiece surface ;
3. Zero drift ;

Really achieve 0.01mm resolution of the ultrasonic thickness gauge in the same class products

The display resolution of general ultrasonic thickness gauges is usually 0.01mm, but the actual resolution is difficult to achieve 0.01mm. The timer counter in the circuit of ordinary thickness gauge is generally below 30MHz, and the actual hardware resolution can barely achieve 0.1mm.

The method of taking the average of the results simulates the display effect of 0.01mm change. This does not effectively improve the actual resolution, but caused the phenomenon of unstable display. The UM-4 series ultrasonic thickness gauges adopt breakthrough all-digital technology and special algorithm, its actual resolution can achieve 0.01mm. The experiment have proved that it can easily distinguish two test blocks with a thickness difference of only 0.01mm.

Faster measurement update rate

Update rate 4Hz, 8Hz, 16Hz adjustable;
 Select 4Hz for common applications, the high update rate can be selected for quick scanning.

Easy operation

UM-4 is an extremely simple instrument to operate, the user can use it without any training. Use soft keys and with the single - level menus and provide a multi-language interface.



More practical functions

- Gain: Adjustable low, medium, high ;
- Alarm mode: The reading flashes and color changes when in alarm status ;
- Difference /Reduction rate: Difference mode displays the difference between the measured value and the preset value ; Reduction rate is to calculate and display the percentage of thickness reduced after the material is thinned; Typical application is to measure metal materials that have become thinner due to bending. Max./Min. Capture: The measured value, max.& min thickness value can be displayed on the same screen.



White color means good coupling

DIFF/RR% Mode

Max. /Min. Mode Red color means alarming

UM-4 Series Technical Specifications

Feature	UM-4	UM-4D	UM-4DL	Data Logger Option
Color Display	✓	✓	✓	
A-Scan Snapshot	✓	✓	✓	
Max./Min Capture	✓	✓	✓	
DIFF/RR%	✓	✓	✓	
Thru-Paint	X	✓	✓	
Data Memory	X	X	✓	✓
DataView Software	X	X	✓	✓

T Technical parameter

Display	2.4 inch (320×240 dot matrix) Color LCD screen display
Operating Principle	Pulse echo and echo echo with dual element transducers
Measuring Range	0.6mm to 508mm (0.025" to 20.00"), depending on the probe, material and surface condition
Measuring Resolution	0.01mm, 0.1mm (0.001", 0.01") Selectable in the entire measurement range
Units	Inch or Millimeter
Gain	Ajustable Low, Medium or High
Display Mode	Normal, Minimum / Maximum capture, DIFF/RR%
V-Path Correction	Automatic, Compensate the nonlinearity of dual element probes
Update Rate	Selectable 4Hz, 8Hz, 16Hz
Material Velocity Range	500 to 9999m/s (0.0197 to 0.3937in/us)
Languages	Selectable Chinese, English, Japanese, French, German
Alarm Setting	Minimum and Maximum alarms. Dynamic waveform color change on alarm
Power supply	Two 1.5V AA batteries, 24 hours standby time
Shut-off	Selectable automatic shutdown after 5, 10, 20 minutes of inactivity, or shutdown manually only
Operating Temperature	-10°C to +50°C, Up to -20°C with special requirements
Size	153mm X 76mm X 37mm (H X W X D)
Weight	280g including batteries

Data Logger Option Features

Capacity	400 files, 100,000 readings
File Structure	Grid file
Rows X Columns	21 X 12
Communication Port	USB 2.0 (Full Speed) port
Software	DataView software

UM-4 Series Probe Specifications

Model	PT08	TC510	TC550	ZT12	PT06	PT04	GT12
Type	Standard	Standard Configuration	Composite Crystal	Cast Iron	Small Tube	Fingertip	High-Temp
Frequency	5MHz	5MHz	5MHz	2MHz	7.5MHz	10MHz	5MHz
Contact Diameter	11mm	13.5mm	13.5mm	17mm	8.7mm	7.0mm	15mm
Measuring Range	0.8-100.0mm	1.2-200.0mm	1.0-200.0mm	4.0-508.0mm	0.8-30.0mm	0.7-12.0mm	4.0-80.0mm
Temperature Range	-10~60°C	-10~70°C	-10~70°C	-10~70°C	-10~70°C	-10~70°C	-20~480°C