

UDT-20

Portable ultrasonic thickness gauge



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- Powerful
- Light and portable
- Ergonomic design
- High reliability
- High measurement accuracy
- Usability

Ultrasonic thickness gauge UDT-20

General information

Highly accurate ultrasonic thickness gauge with A- and B-scans. Real signals on the screen make it possible to evade typical errors in thickness measurement using ultrasonic testing and improve measurement accuracy.

This thickness gauge implements various capabilities of thickness inspection - high-precision measurement of the time for passing through the "zero" ("zero-cross") or between "echo-echo" signals, measurement of the thickness under coatings, etc. With the thickness gauge UDT-20, it is possible to use any ultrasonic transducers with frequency from 0, 5 to 15 MHz, both "single element" and "dual element" types.



Specifications

Measurement range

0,3 - 500 mm

Calibration range

min.: 0 - 7.2 mm

max.: 0 - 500 mm (steel)

Discreteness

0.001 - 0.01 - 0.1

Measurement accuracy

0,01 mm

AGC (Automatic Gain Control)

up to 30 dB

Delay

0 - 168 us

Gain

92 dB, in increments 0.5 dB

TCG

0.1 - 10 dB/us

Frequency range

0.5 - 20 MHz (-6 dB)

Display

TFT; 43 x 58 mm; 240 x 320 pixels

Memory

100 sensor settings

250 testing results with A-scan,

250 testing results with B-scan,

100 measurement files up to 50x50 values

Power supply

built-in Li-Po battery

Battery life

no less than 12 hours

External power supply

220 V AC / 5 V DC

Operation temperature range

from -25 to +55 °C

Dimensions (H x W x L)

148 mm x 64 mm x 25 mm

Weight

180 g

Ultrasonic thickness gauge UDT-20

Delivery set

UDT-20 main unit with built-in Li-Pol battery

PC Software

Transport bag

Protective bag with blind and belts

Power supply 5 V / 220 V

1 x 2Lemo00 — 2Lemo00 cable

2 x transducers

UDT-20 menu structure



1. Move through the menu items;
2. Select a parameter;
3. Adjust the parameter value;
4. Activate the selected parameter;
5. On/Off;
6. Settings.

Connectors

1. USB-C connector
2. Receiver
3. Pulser

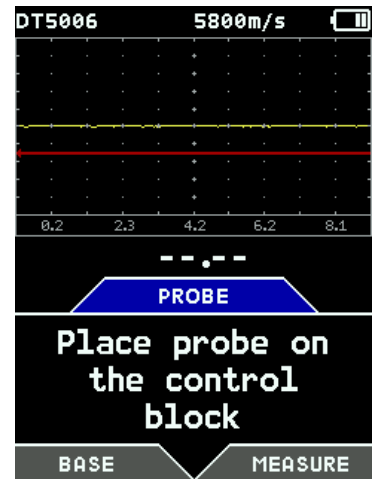


Ease of operation and reliability

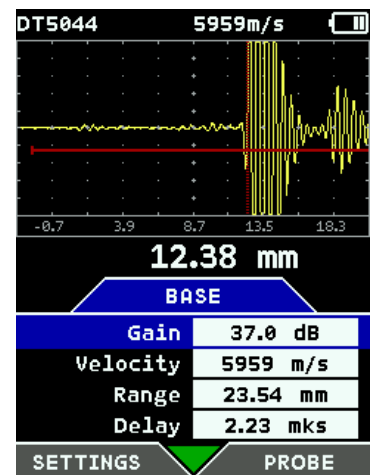
This thickness gauge combines the latest achievements in analog and digital electronics, usability, ergonomic design and high reliability.

Specifics

- high-contrast and easy-to-read at any angle frost-resistant TFT display;
- powerful Li-Pol battery with up to 12 hours battery life;
- protective bag for field operation;
- transducer database that allows user to load all the necessary settings with a single button;
- built-in USB Type-C interface;
- two independent monitor gates;
- TCG;
- AGC;
- large memory of settings and testing reports.



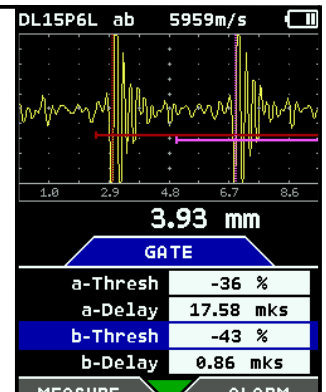
Transducer probe calibration



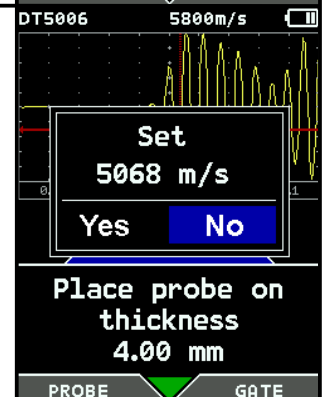
Gain adjustment

UDT-20 specifics

Highly accurate “zero-cross” measurement, two independent gates and the latest low-noise receiver enable precision measurements with combined transducers in “echo-echo” mode, including under various coatings.



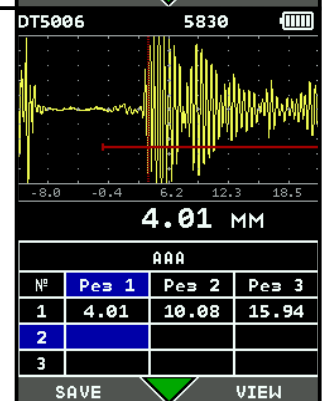
In the setting mode, the whole range of capabilities is available for adjusting the gain of the receiving path, AGC, TCG, pulser and receiver parameters, probe delay calibration and sound velocity.



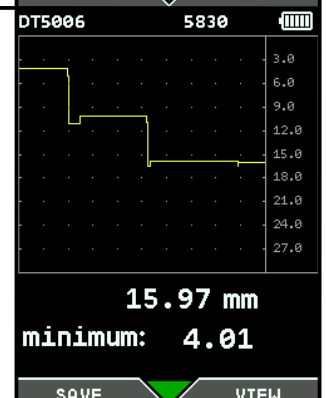
The "DIGIT" mode allows the user to remove unnecessary information from the screen, turning a technically advanced device into an easy-to-use control tool.



In the "TABLE" mode, the user can create any tabular matrix for the inspection of large-sized standard products by layout control points.



The B-scan protocol displays the real profile of the product with the locking of the minimum signal for the entire time of high power.



General technical specifications

Measurement range

0,3 - 500 mm

Display range

min.: 0 - 7.2 mm

max.: 0 - 500 mm (steel)

Data display resolution

0.001 - 0.01 - 0.1

Allowed coating thickness between the probe surface and the test object

up to 10 mm in "echo-echo" mode

UT speed range

1000 - 9999 m/s

AGC (Automatic Gain Control)

up to 30 dB

Display delay

0 - 168 μ s

Gain

92 dB, in increments 0.5 dB

TCG (Time Corrected Gain)

0.1 - 10 dB/ μ s

Frequency range

0.5 - 20 MHz (-6 dB)

Visualization

A-scan, B-scan, digital values

Monitor gate

two independent gates

Alarm System

luminous and sonorous

Time interval measurement

0 - echo;

echo - echo

Max. number of measurements per sec.

200

Transducers

single element transducer;

dual element probe/transducer

Probe calibration

by built-in sample or by any sample specified by the operator

Sound velocity calibration

according to the thickness specified by the operator

Measurement modes

scan mode, "freeze" mode

Non-original transducers usage

any ultrasonic transducers can be used if their parameters were previously saved by PC software

Measurement at an unknown sound velocity

calibration according to several samples (2 - 10)

Display

TFT with adjustable brightness and color set

43 x 58 mm; 240 x 320 pixels

Color sets

standard color, luminescent, monochrome

(for working in bright sunlight)

Brightness

5 - 100%, in increments 1%

Display lights auto-off

30 sec., 60 sec., 120 sec., off

Auto-off

3 min., 5 min., 10 min., off

Date/time setting

yes

Memory

100 probe settings

250 testing results with A-scan;

250 testing results with B-scan;

100 measurement files up to 50x50 values

Interface

USB Type-C

Language

Russian, English

Transducer connectors

2 x Lemo 00

Power supply

built-in Li-Po battery

Battery life

not less than 12 hours

External power supply

220 V AC / 5 V DC

Operation temperature range

from -25 to +55 °C

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