

PTS

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UT METHOD

UT devices and accessories



www.ptsndt.com

UT thickness gauges (USA)



Theory - common thickness gauges

Ultrasonic thickness gauges use ultrasound for measurement - mechanical vibration of physical environment like audible sound. In contrast with audible sound frequency of ultrasound is situated out of hearing range. Measuring of thickness with the help of ultrasound is possible only because of its feature to expand quite easily in solid materials.

Ultrasound is formed in a probe which gets applied to the surface of tested material. Ultrasound is not being emitted constantly but in short impulses. Impulse expands in material, gets reflected from the opposite surface or, as a variant, from internal flaw, and returns to the probe which transforms it into electric signal for processing by gauge.

These gauges are suitable for thickness measuring of such materials as steel, cast iron, aluminium, copper, brass, zinc, glass, polyethylene, PVC, grey cast iron, ductile iron and other materials.

Danatronics ECHO 9



ECHO 9 is the most advanced UT thickness gauge from Danatronics company. It offers wide (3.5") high resolution, sunlight readable, colour display. Functions include live A-Scan, echo-echo for measuring through coatings, B-Scan, datalogger with up to 32GB memory SD card and possibility of export to Microsoft Excel. ECHO 9 is available in 4 models - **ECHO 9**, **ECHO 9DL**, **ECHO 9W** and **ECHO 9DLW**. This gauge is the world's first which offers vibrating alarm for operating in loud environment and also has built-in temperature correction which adapts expansion speed to the higher temperature.

- simultaneous display of colour A-Scan and thickness
- useful upgradeable software (for function extension)
- Fast/Min and Fast/Max display of minimum, maximum values or both simultaneously at actual thickness at frequency 25 Hz
- compatible with wide range of single element and dual Danatronics transducers
- multilanguage menu (**including Czech**)
- casing **IP67**, **warranty 36 months**

ECHO 9W contains all functions of ECHO 9, plus colour live A-scan (without datalogger) where user can adjust range, gain, blank and rectification. ECHO 9W also provides individual calibration of sound expansion velocity and has an option to display thickness of coating and thickness of the base material simultaneously.

ECHO 9DL has extra function of "unlimited" data recording (datalogger) with following export to Excel, B-scan (2 GB micro SD memory card and supports cards up to 32 GB). Software Data XL for export of logged data to Excel.

ECHO 9DLW combines all functions of previous models, "unlimited" data recording at external memory card (datalogger), plastic transport case (PC-09), 28g of couplant gel (C-02G), rechargeable Li-Ion battery, user manual and DKS537 transducer (5MHz; diameter 9.52mm), Echo-Echo, B-Scan, rubber frame with integrated eyelets for mounting of neck strap, recharging adapter with USB cable and software data XL for data export to Excel.

Danatronics UPG-07

UPG-07DLCW is a handheld ultrasonic **precise thickness gauge with resolution of 0.001mm (thousandth of millimeter)** and intended for nondestructive measuring of most of materials with the widest range of thicknesses. In case of measuring of steel straps, thickness of fiberglass on boats, titanium tips of golf sticks, plastic bottles or just rubber tyres...

- high quality device
- B-scan , Echo-Echo (**measuring through coating**)
- gauge memory is 50 000 values
- setting of alarm, possibility to adjust gain
- possibility to upgrade the gauge at any time by purchase of activation code
- graphic LCD screen
- **Czech menu**
- **warranty 36 months**



UPG-07

Danatronics EHC-03 / EHC-09 / EHC-09 Color Wave

Danatronics EHC series are corrosion thickness gauges with resolution of 0.01mm.

- high quality device
- B-scan , Echo-Echo (measuring through coating)
- gauge memory is 50 000 values
- setting of alarm, possibility to adjust gain
- possibility to upgrade the gauge at any time by purchase of activation code
- graphic LCD screen
- **Czech menu**
- **warranty 36 months**



EHC-09

SIUI CTS-30 A, B, C

SIUI CTS-30x thickness gauges are professional, portable ultrasonic thickness gauges which are easy to use and have reasonable price.

All three models have high sensitivity and large capacity memory with possibility of storage of measured data and their following transfer to PC. Basic model CTS-30A can be connected with just one type of probe (TG5-10L). CTS-30B model has extra function of fast measuring FAST SCAN, 2 points calibration and function of manual gain, can operate with a wide range of probes. The most advanced model CTS-30C has also one extra function **measuring through coating (Echo-Echo)**.

These compact gauges are equipped with large, backlit, easy to read display and have light weight. Another advance is possibility to mount the gauge on wrist. The gauge is suitable for inspection of material decline as a result of corrosion and in places where standard gauges are difficult to use for measuring thickness.



PocketMIKE



- measuring range: 1~250mm
- resolution: 0.1mm / 0.01mm
- memory: no
- measuring through coating: no

PTS DC-4000



- measuring range: 0.65~650mm
- resolution: 0.01mm
- memory: yes
- measuring through coating: yes

TM-8812



- measuring range: 1.5~200mm
- resolution: 0.1mm
- memory: no
- measuring through coating: no

TM-8818



- measuring range: 0.9~400mm
- resolution: 0.01mm
- memory: no
- measuring through coating: no

UT FLAW DETECTOR CTS



SIUI CTS is an universal ultrasonic flaw detector for a very attractive price.

It features wide range of usage possibilities, compact size, light weight, low energy consumption and easy control. SIUI CTS is presented by 4 models: **CTS-9005**, **CTS-9006**, **CTS-9009** a **CTS-9009plus**.



- maximum sampling rate 240MHz
- measurement resolution 0.1 mm
- operating frequency range: 0.5~10MHz, detection sensitivity minimum 65dB
- PRF 20 ~ 500Hz 10 steps adjustable
- 5,7 " colour TFT LCD display (320 x 240) with wide viewing angle, high brightness and resolution provides very clear image
- AGC (Auto Gain Control)- function of automatic setting of echo intensification in the gate, the display size can be adjusted by user
- AVG curves – function depicts 3 curves of different equivalent values according to the adjusted parameter of the spare flaws FBH or the flat bottom echo
- DAC curves
- measuring of the flaw height using the edge-peak echo method
- B-Scan
- RF (Radio Frequency) display of echo – suitable for thick wall parts
- selection from 3 colour schemes of the display for the best ability to be sunlight readable
- up to 7 minutes of dynamic record A-depiction and option of reverse browsing up to 1500 snapshots
- memory for 500 measurements or settings of the gauge and probe, unlimitedly expandable by USB flash card
- power supply 9~12 V (external source), 6~8.4 V (Li-ion battery)
- operating time up to 8h
- operating temperatures -10~40°C
- overall dimensions 152x240x52mm
- weight 1150g including battery

UT ACCESSORIES

Couplant gel VG-T

Couplant gel VG-T is intended for acoustic contact between a probe and tested material in ultrasonic testing method.



Couplant gel VGT Fyr

Couplant medium containing inhibitors. UV fluorescent.



Couplant gel Ankoril

Couplant medium containing inhibitors. Can be dissolved in water 2:1.



UT Probe Cables

Wide range of probe cables used in UT method is available in stock.



Overview of commonly used connectors



Standard cables

order code	name	description	equivalent	length [m]	picture
UTOS01110	cable SL-M	LEMO-00 - Microdot	CL 331	1.8	
UTOS01101	cable dSL-dSL	Dual LEMO-00 (double plug)- LEMO-00 (double plug)	DA 231	1.8	
UTOS01130	cable dSL-2SL	Dual LEMO-00 (double plug) - LEMO-00	DA 233	1.8	
UTOS01165	cable dSL-2Ms	Dual LEMO-00 (double plug) - Microdot	DA 235	1.5	
UTOS01105	cable SL-LL	LEMO-00 - LEMO-1	MPKL 2	1.8	
UTOS01106	cable M-LL	Microdot - LEMO-1	MPKM 2	1.8	
UTOS01107	cable LL-LL	LEMO-1 - LEMO-1		1.8	
UTOS01108	cable dSL-2LL	Dual LEMO-00 (double plug) - LEMO-1	SEKG 2	1.8	
UTOS01115	cable 2SL-2LL	Dual LEMO-00 - LEMO-1	SEKL 2	1.8	
UTOS01122	cable 2M-2LL	Dual Microdot - LEMO-1	SEKM 2	1.8	
UTOS01167	cable 2Ms-2LL	Dual 1x Microdot small & 1x Microdot Large - LEMO-1	SEKN 2	1.5	
UTOS01111	cable BNC-BNC	BNC - BNC		1.8	
UTOS01112	cable BNC-LL	BNC - LEMO-1		1.8	
UTOS01114	cable BNC-SL	BNC - LEMO-00		1.8	
UTOS01104	cable SL-SL	LEMO-00 - LEMO-00	MPKLL 2	1.8	
UTOS01105	cable SL-LL	LEMO-00 - LEMO-1	MPK 2	1.8	
UTOS01105_90	cable LL-SL 90°	LEMO-1 - LEMO-00 90°		1.8	
UTOS01104_90	cable SL-SL 90°	LEMO-00 - LEMO-00 90°		1.8	
UTOS01106_90	cable LL-M 90°	LEMO-1 - Microdot 90°		1.8	
UTOS01117	cable 2BNC-2M (PVC)	Dual BNC - Microdot/ 1,8 m/ OEM		1.8	
UTOS01133	cable 2BNC-2SL	Dual BNC - LEMO-00/ 1,8 m/ OEM		1.8	
UTOS02038	cable 2SL-2M	Dual LEMO-00 - Microdot/ 1,8 m/ OEM		1.8	
UTOS01123	cable 2SL-2SL	Dual LEMO-00 - LEMO-00		1.8	

UT Test Blocks

We supply wide range of test blocks for UT method.

The material for production of test blocks is tested before further processing. The rough samples are heat processed and tested for their acoustic features. All testing blocks are provided with a certificate and placed in a suitable case.

Commonly used test blocks for UT method

order code	name	type	description	complies with the standard	material dimensions [mm]
UTOS03002	V1	A2 (BS)	I.I.W. Testing block. For calibration of angle and direct probes. Verification of refraction angle, point of output, sensitivity and distinctive abilities. Adjustment of the time base range and sensitivity calibration.	B.S. 2704 DIN 54120 IIW (International Institute of Welding) EN 12223	steel 25x100x300
UTOS03001		(BS)	Small calibrating test block for verification of angle probes qualities, time base range and thickening on spot. The diameter of the drill hole 1.5mm or 5mm.	BS 2704 IOW (Institute of Welding) EN 27963	steel 12.5x43x75
UTOS03001_20_5	V2/20	A4 (BS)	In general similar to the V2. The bigger thickness of the test block minimalizes the influence of the bounces from side walls. Drill hole diameter 1.5mm or 5mm.	BS 2704 EN 27963	steel 20x43x75
MTPT0205_VV	LSW		Step test block for adjusting the time base of the direct probes and for measuring of the wall thickness. 8 steps from 1mm to 8mm.	Accuracy range +0.000mm- -0.040mm	steel 8x15x120

V1



V2/20



Special test blocks for UT method

Additionally we offer other UT test blocks which are usually not available in stock. You can check them at our web-pages using QR code.

Names of test blocks: V1/50, BCB, A6, RTB, LSW/M, CSW, MU, TBR 2 125 (3), TBR 2 125 (5), A5 Blank Type B, A5 Blank Type C, ESI-BCB N-A5, 50 RAD



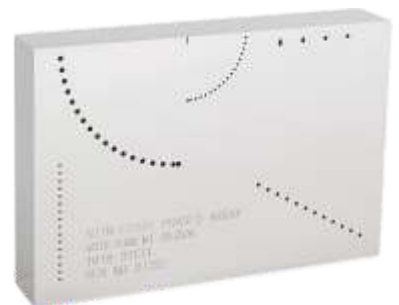
Phased array test blocks

Are test blocks for verification and setting of phased array gauges. The test block are provided in 2 versions A and B.

type A



type B



Ultrasonic probes PTS

Ultrasonic probes PTS for ultrasonic flaw detectors and thickness gauges feature excellent sensitivity, accuracy and reasonable price.

These probes are compatible with UT gauges of the main world manufacturers.



probe type	description	equivalent	MHz	converter [mm]	angle	focus	connector
	UL645	miniature angle probe		5	6x6	45°	microdot
	UL660	miniature angle probe		5	6x6	60°	microdot
	UL670	miniature angle probe		5	6x6	70°	microdot
	UM2Z45	small angle probe	MWB45-2	2	8x9	45°	lemo00
	UM2Z60	small angle probe	MWB60-2	2	8x9	60°	lemo00
	UM2Z70	small angle probe	MWB70-2	2	8x9	70°	lemo00
	UM4Z45	small angle probe	MWB45-4	4	8x9	45°	lemo00
	UM4Z60	small angle probe	MWB60-4	4	8x9	60°	lemo00
	UM4Z70	small angle probe	MWB70-4	4	8x9	70°	lemo00
	US2Z45	medium angle probe	SWB45-2	2	14x14	45°	lemo00
	US2Z60	medium angle probe	SWB60-2	2	14x14	60°	lemo00
	US2Z70	medium angle probe	SWB70-2	2	14x14	70°	lemo00
	US4Z45	medium angle probe	SWB45-2	4	14x14	45°	lemo00
	US4Z60	medium angle probe	SWB60-4	4	14x14	60°	lemo00
	US4Z70	medium angle probe	SWB70-4	4	14x14	70°	lemo00
	UV2Z45	large angle probe	WB45-2	2	20x22	45°	lemo01
	UV2Z60	large angle probe	WB60-2	2	20x22	60°	lemo01
	UV2Z70	large angle probe	WB70-2	2	20x22	70°	lemo01
	UV4Z45	large angle probe	WB45-4	4	20x22	45°	lemo01
	UV4Z60	large angle probe	WB60-4	4	20x22	60°	lemo01
	UV4Z70	large angle probe	WB70-4	4	20x22	70°	lemo01
	PJ212	direct probe	MB2S	2	12		lemo00
	PJ412	direct probe	MB4S	4	12		lemo00
	PJ124	direct probe	B1S	1	24		lemo01
	PJ224	direct probe	B2S	2	24		lemo01
	PJ424	direct probe	B4S	4	24		lemo01
	PD212	direct dual probe	MSEB2	2	12	12	2xlemo00
	PD412	direct dual probe	MSEB4	4	12	12	2xlemo00
	PD224	direct dual probe	SEB2	2	24	24	2xlemo00
	PD424	direct dual probe	SEB4	4	24	24	2xlemo00

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