

ULTRASONIC FLAW DETECTOR & THICKNESS GAUGE

ExScan UT




OKOndt GROUP 

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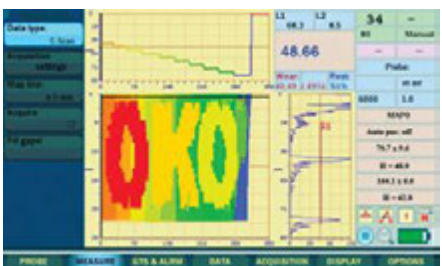
<p>PURPOSE</p> <p>“UT” SOFTWARE VERSION</p>	<ul style="list-style-type: none"> Manual ultrasonic testing defects such as discontinuities and inhomogeneities of material of finished items, semi-finished products and welded (soldered) joints. Measuring the defects depth and coordinates. Assessing the sound velocity in different materials. Measurement of the equivalent defect sizes. Measurement of the ratio of echo signals amplitudes.
<p>“THICKNESS GAUGE +” SOFTWARE VERSION</p>	<ul style="list-style-type: none"> Measurement of the products thickness at one-sided access to them. Saving of thickness measurement results to structured multidimensional files. Building of thickness B-Scans and C-Scans. Measurements on thickness B-Scans and C-Scans.

<p>APPLICATION</p>	<ul style="list-style-type: none"> Testing of a variety of parts and equipment in the Aerospace and Automotive Industries. Weld testing in the Power Generation and Petrochemical Industries. Precise measurement of thickness in the Automotive Industry. Forgings testing. Corrosion measurement in the Power Generation and Petrochemical Industries.
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<p>MAIN MODES AND OPTIONS</p> <p>“UT” SOFTWARE VERSION</p>	<ul style="list-style-type: none"> Automatic algorithms of various probes calibration (straight-beam, angle-beam, Rayleigh-wave). Mode of automatic building of DGS diagrams simultaneously for three different equivalent diameters. DAC: building DAC curves according to EN1712, EN1713, EN1714, ASTM E164, ASME, ASME III, JIS23060, GB4730, GB11345. TCG: 110 dB dynamic range. Mode of Automatic Gain Control (AGC). Acoustic coupling control. Peak hold mode (useful while products testing with bad input conditions). Mode of high-accuracy thickness measurement using measurement marker; “Legs marking” mode (applied during welded joints testing); 	<ul style="list-style-type: none"> “Estimate” mode - automatic fixation of the “best” signal. Two independent measurement gates with three alarm levels. Pulsar modes: spike pulser, square wave pulser. Different rectification modes - radio frequency (RF), positive or negative halfwave, full-wave. Fast data transfer to PC via USB using USB Flash. 
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<p>“THICKNESS GAUGE +” SOFTWARE VERSION</p>	<ul style="list-style-type: none"> Automatic algorithms of straight beam probes calibration (single and dual element). Mode of probe zero express calibration of straight beam dual element probes “exposed to air”. Measurement mode by zero crossing of the first negative half-wave of the echo-signal. Acoustic coupling control. Building the thickness B-Scans and C-Scans bound to the scanning coordinate (in case of scanning device usage). Alarm zones highlights mode according to the 	<p>set values of minimum and maximum allowed thickness of the test object.</p> <ul style="list-style-type: none"> Saving the thickness measurement results in multidimensional files on the basis of user defined templates. Creation of database of measurement results and used probes. Fast data transfer to PC via USB using USB Flash. Result display: A-Scan, B-Scan, C-Scan. Synchronization: internal (time), Encoder (availability to connect up to 2 encoders).
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ExScan UT ADVANTAGES

- **ERGONOMICS**
 - **MULTIFUNCTIONALITY**
 - **INDIVIDUAL DELIVERY SET**
 - **PROTECTION LEVEL AND OPERATING CONDITIONS**
- Optimal dimensions and display format of 800 x 480 pixel resolution ensures qualitative data separation and its perception and does not cause excessive eyestrain to NDT inspector.
 - Carrying out the flaw detection, thickness gauging, sound velocity assessment in different materials.
 - By agreement with the Customer the flaw detector can be completed with different probes,
 - Flaw detector is resistant to ionizing radiation impact and is meant for operation in increased humidity conditions.
 - Convenient case and small device weight allow to use the flaw detector in enclosed spaces and hard to reach areas.
 - All main instruments settings are accessible with keypad shortcuts and "Quick Access Menu".
 - Operation with all probe types.
 - calibration blocks and software for operation in different industrial sectors.
 - Flaw detector case protection level - IP65.
 - Operation temperature range is from minus 30 to plus 50 °C.

ExScan UT SPECIFICATIONS

Characteristics and Features	GENERAL and "UT" VERSION	Characteristics and Features	General and "UT" VERSION
DISPLAY		ALARM	
• Size	4.5"	• Number of gates	2
• Resolution	800 x 480	• Number of levels	3
CONNECTORS		FLAWS EVALUATION	
• Probe connectors	2 x BNC or 2 x LEMO-1 or 2 x LEMO-00	• AWS	+
• Analog output	Alarm	• DGS (AVG)	+
• USB ¹	Type A	• DAC	+
• LAN	+	• DAC: Number of points	128
PULSER		• DAC codes	ASME & ASME III, EN 1712, EN 1713, EN1714, JIS Z3060, GB11345, GB 4730
• Types	Spike + Square Wave (SWP)	• Custom DAC curves	up to 6
• Voltage (SWP)	50 V, 100 V, 150 V, 200 V, 250 V, 300 V, 400 V	• DAC 20-80	+
• Energy (SWP)	20 ns to 1000 ns with 10 ns step Manual & Auto modes	• DAC-TCG	+
• Voltage (Spike)	Low: 50 V, High: 300 V	MEMORY	
• Damping	+	• Setups	+
• PRF modes	Comfort, Low, Medium, High, Manual	• Datasets (with A-Scans)	+
• PRF	from 15 to 6000 Hz	• Capacity	2 GB (up to 64 GB)
• Phantoms control	3 modes	PC SOFTWARE	
RECEIVER		OTHER FEATURES	
• Range (at steel longitudinal wave)	8000 mm (314 in)	• Coupling control	+
• Gain	0 to 110 dB, with 0.1 dB step	• AGC	Independent for both gates
• Max signal input	20 V p-p	• Quick calibration	+
• Bandwidth	0.2 MHz - 27 MHz	• Quick estimate (Best signal catch)	+
• Filters	0.2-27 MHz, 0.2-10 MHz, 2.0-21.5 MHz, 8.0-26.5 MHz, 0.5-4 MHz, 0.2-1.2 MHz, 1.5-8.5 MHz, 5-15 MHz, 0.4 MHz, 0.5 MHz, 1 MHz, 1.25 MHz, 2 MHz, 2.25 MHz, 2.5 MHz, 3.5 MHz, 4 MHz, 5 MHz, 7.5 MHz, 10 MHz, 15 MHz, 20 MHz	• Auto XX% (50% or 80%)	+
• Filters set choice	+	• Reference gain	+
• Rectification	RF, FW, Pos. HW, Neg. HW	• Peak hold (collect, peak memory)	+
• TCG (TVG)	110 dB; 110 dB/ μ s slope	• Signals compare	+
• Signal Average	OFF / 2x / 4x / 8x / 16x / 32x / 64x	• Smart zoom	+
• Reject (cutoff)	0-80% FSH	• Choice of menu systems	Full, Simple 1, Simple 2
MEASUREMENT		• Keyboard backlight	+
• Number of gates	2	• Smart (Context) keyboard backlight	+
• Number of cursors	2	• Number of keyboard shortcuts ²	41
• Modes	1, 2, C1, C2, 1-2, 1-C1, 1-C2, 2-C1, 2-C2, C1-C2	PHYSICAL	
• TOF Modes	Peak, Edge (Flank)	• Dimensions	241 x 112 x 134 mm
• Amplitude measurement	up to 220% FSH	• Weight incl. battery	0.95 kg
• Units	mm / in / us	• Operating temp. range	-30 °C to 50 °C (-22 °F to 122 °F)
• Output fields	5	• Dust & water protection	IP65
		• Battery life	8 h
		• Replaceable battery	+

Characteristics and Features "THICKNESS GAUGE +" VERSION

PULSER	
• Type	Square Wave (SWP)
• Autoft of the pulser parameters to the chosen probe	Voltage, Energy, Damping
• Measurement frequency (readings refresh rate)	1 to 100 Hz
• PRF mode	Auto (Calculated from set readings refresh rate, accounting for averaging rate)
RECEIVER	
• Range (at steel longitudinal wave)	8 000 mm (314 in)
• AGC	Individual to reach at 2 gates
• AGC Modes	OFF / Edge / Peak
• AGC Max Gain Modes	High, Medium, Low, Manual, Off
• Auto filters choice (according to the probe type)	+
MEASUREMENT	
• Sound velocities range	250 to 16000 m/s (.01 to .629 in/ μ s)
• Measurement range	0.4 to 16 000 mm (.016 to 629 in)
• Readings resolution	0.01 / 0.1 / 1 mm (0.001 / 0.01 / 0.1 in)
• Number of gates	2
• Modes	1, 1-2
• TOF Modes	Edge, Edge Zero Crossing
• Units	_mm/in
• Min & Max capture mode	+
• Differential mode	+
• % of wear mode	+
• Temperature compensation	+
• Acquisition of a:	
– Thickness B-Scan	+
– Thickness C-Scan	+
• Measurements on the previously acquired:	
– Thickness B-Scan	+
– Thickness C-Scan	+

Characteristics and Features "THICKNESS GAUGE +" VERSION

ALARM & DISPLAY	
• Alarm types	Min, Max, Min&Max
• Coupling loss alarm	+
• Last reading (in coupling loss)	+
• A-Scan	+
• Cursor (Defect Line)	+
• Thickness B-Scan	+
• Thickness C-Scan	+
• Multidimensional files: Browsing	+
• Multidimensional files: File Statistics	+
• Multidimensional files Meas. Site Statistics	+
CALIBRATION	
• 1-point	+
• 2-points	+
• Zeroing in the air	+
• Zeroing on a built-in block	+
MEMORY	
• Setups	+
• Multidimensional structured files	1-3 dim
• Number of readings per file	Up to 100 000
• Number of files format	6
• Data attachments	Comments, A-Scans, Thickness B-Scans, Thickness C-Scans, Microgrids
• Capacity	2 GB (up to 64 GB)
PC SOFTWARE	
OTHER FEATURES	
• Keyboard backlight	+
• Smart (Context) keyboard backlight	+
• Smart zoom	+
• Number of keyboard shortcuts ²	29

¹ USB Type A (aka Host or Master) allows to connect external devices (Flash-Stick, Mouse, etc).

² Number of instrument functions one can access with a couple of button presses.

