Индикативно предложение по проведени пазарни консултации №46004
с предмет "Доставка на апаратура за ултразвуков контрол"

от

Континуум Индустриални решения ООД,Ул. Тиха №1; 4004 Пловдив, България; 0888330643ЕИК № 203749537, ДДС№ BG 203749537,изготвил: Ж.Топич

№ по ред	Описание и технически характеристики на предлаганата апаратура	М.е.	К-во	Ед. цена без ДДС	Стойност без ДДС
Поция № 1 - Доставка на ултразвуков дефектоскоп					
1	ST10 , by SONOTEC,		1	11000	11000
	ИЛИ				
2	SW70, by SONOTEC		1	7800	7800
	приложено описание				
Обща стойност без ДДС, Лева					
Поция № 2 - Доставка на осезатели за ултразвуков контрол					
1	по спец.,by SONOTEC		3	4800	14400
2	по спец.		1	4800	4800
3	по спец.		1	4800	4800
4	по спец.		2	4800	9600
5	по спец.		2	4800	9600
6	по спец.		1	4800	4800
7	по спец.		1	4800	4800
8	по спец.		6	4800	28800
Обща стойност без ДДС, Лева					81600

Срок на доставка   12 седмици

Условие на доставка   DAP Kozlodui

Гаранционен срок 12месеца , Срок за отстраняване на дефекти през гаранционния период 30 дни
Съпроводителна документация при доставка   Опис

ULTRASONIC FLAW DETECTOR

SONOSCREEN ST10

FOR NONDESTRUCTIVE TESTING

MADE IN GERMANY

SONOTEC

SONOSCREEN ST10

Developed with the help of experienced material testing experts, the compact ultrasonic flaw detector unites high-spec performance with user-orientation. A clearly-structured menu quickly guides the tester through all of the steps required for test set-up. Efficiency is also boosted by the full-text menu labels and by the complete overview of all probe settings. This makes the SONOSCREEN ST10 an ideal tool for all standard ultrasound ispections, from weld seam testing, wall thickness measurement and sheet metal testing to the detection of invisible cracks, inclusions, cavities and discontinuities in metals, plastics, ceramics and composite materials.

ADVANTAGES AT A GLANCE

- Large, high-resolution 8" graphic display (174 x 104 mm), optimal readability even in direct sunlight

- Robust aluminum casing, IP 66 protected

- Clearly-structured menu and intuitive usability

- Configurable display with up to 10 measurement values

- Display of a measurement range up to 10 m in one A-scan

- Editable database for materials, probes and setups

- 400 V powerful square wave transmitter for higt material penetration

- 5 ns resolution over the entire measurement range (equivalent to 0.03 mm in 10 m steel)

- 2 GB internal memory for storing up to 60 000 A-scans plus device configuration

- Fast external data storage and transfer via USB flash drive

Fast setup and clear user orientation due to menu tree display and red menu path highlighting

INTUITIVE OPERATION

The SONOSCREEN ST10 offers a clearly structured menu system optimized to support the testing process plus intuitive device operation. This helps to increase testing reliability and to save valuable testing time. By turning and pressing the rotary knobs, you can browse quickly through the menu. The complete menu tree is displayed in full text and the selected menu path is highlighted in red.

The SONOSCREEN ST10 guides you step-by-step through the pre-test set-up. All parameters needing configuration are arranged logically one after the other. This ensures that all relevant parameters are set before testing begins.
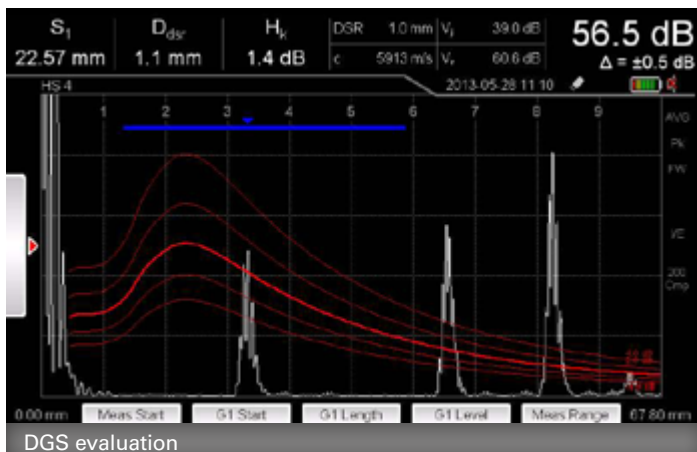
Useful database also helps to shorten the preparation time: the database already contains all SONOSCAN probes. Other probes are easy to add. The provided probe settings overview enables quick verification of the entered data.
Selected calibration blocks are also stored to enable

rapid distance calibration. Device setup, probe and material databases can be stored on a USB flash drive and transferred to other SONOSCREEN units.

All probe settings at a glance

EVALUATION METHODS

- Optional DAC/TCG, DGS (AVG) and AWS D1.1

- DGS curves for single-element probes and sender/receiver probes

- DAC evaluation with TCG

- Single point modification of DAC curve

- Up to 4 additional freely-positionable curves can be displayed for DGS and DAC (in 0.5 dB steps)

- Amplitude evaluation according to AWS D1.1

- Comparison and envelope curve function

DGS evaluation

COMPLETE DOCUMENTATION

Test protocol		SONOTEC
Sonotec GmbH		
Tester: John Smith	Date: 2016-04-18	
girder T15-3	Test on: 2016-04-11 15:44:54	

Device Settings
Gain	44.0 dB
Measurement start	0 mm
Measurement range	75.9 mm
Voltage	190 V
Pulse width	125 ns
PRF	high
Rectification	full
Digital filter	off

Distance adjustment
Reference position 1	25 mm
Reference position 2	100 mm

Measurement object
Sound speed	3356 m/s
Sound attenuation (object)	10.0 dB/m
Thickness	12 mm
Diameter	flat

Measurement
Measurement mode	peak
Gate 1	I = 20.9 mm ↔ = 19 mm ↑ = 59 %
Gate 1 logic	positive
Gate 2	I = 23 mm ↔ = 7.11 mm ↑ = 46 %
Gate 2 logic	off
Noise suppression	0 %

Comment:

Probe
Probe name	WS 60-4
Delay time	9.827 µs
Delay sound speed	2700 m/s
Damping	50 Ω
Operation mode	pulse-echo
Nominal frequency	4 MHz
Effective diameter	9.8 mm
Dead range	shortened
Angle	60.0 °
X-measure	12 mm
Amplitude correction	0.0 dB

Sensitivity adjustment
Amplitude evaluation	AVG
Transfer correction	-1.5 dB
Sound attenuation (reference)	6.0 dB/m
Reference echo type	backwall
AVG curve	3 mm
Multi-curve display	off

Fast documentation of the test results with all parameters

USER-FRIENDLY – ERGONOMIC DESIGN – EXTREMELY ROBUST

Screenshot

10 brightness levels and 6 colour schemes - ensuring optimal redability even in direct sunlight

Simple freezing of the A-scan

Lock funktion keys - gain adjustment remains active

Acoustic and color-coded gate alarm

Gate zoom

Customizable display of measurement values

Measurement context, probe, date and time at a glance

Large, high-resolution A-scan display

5 soft keys – for rapid, streamlined operation

USB port

Probe connections, voltage supply, digital/analog output (optional)

Stable, multi-angle fold-out stand – also serves as carry handle

Rugged protective frame – ideal for tough testing environments

THE FULL PACKAGE

ULTRASONIC FLAW DETECTOR

+ DGS evaluation
+ DAC evaluation
+ TCG function
+ AWS evaluation
+ Charger
+ USB flash drive
+ Couplant
+ Transportation and storage case
+ Protective working case
+ Operating manual and calibration certificate

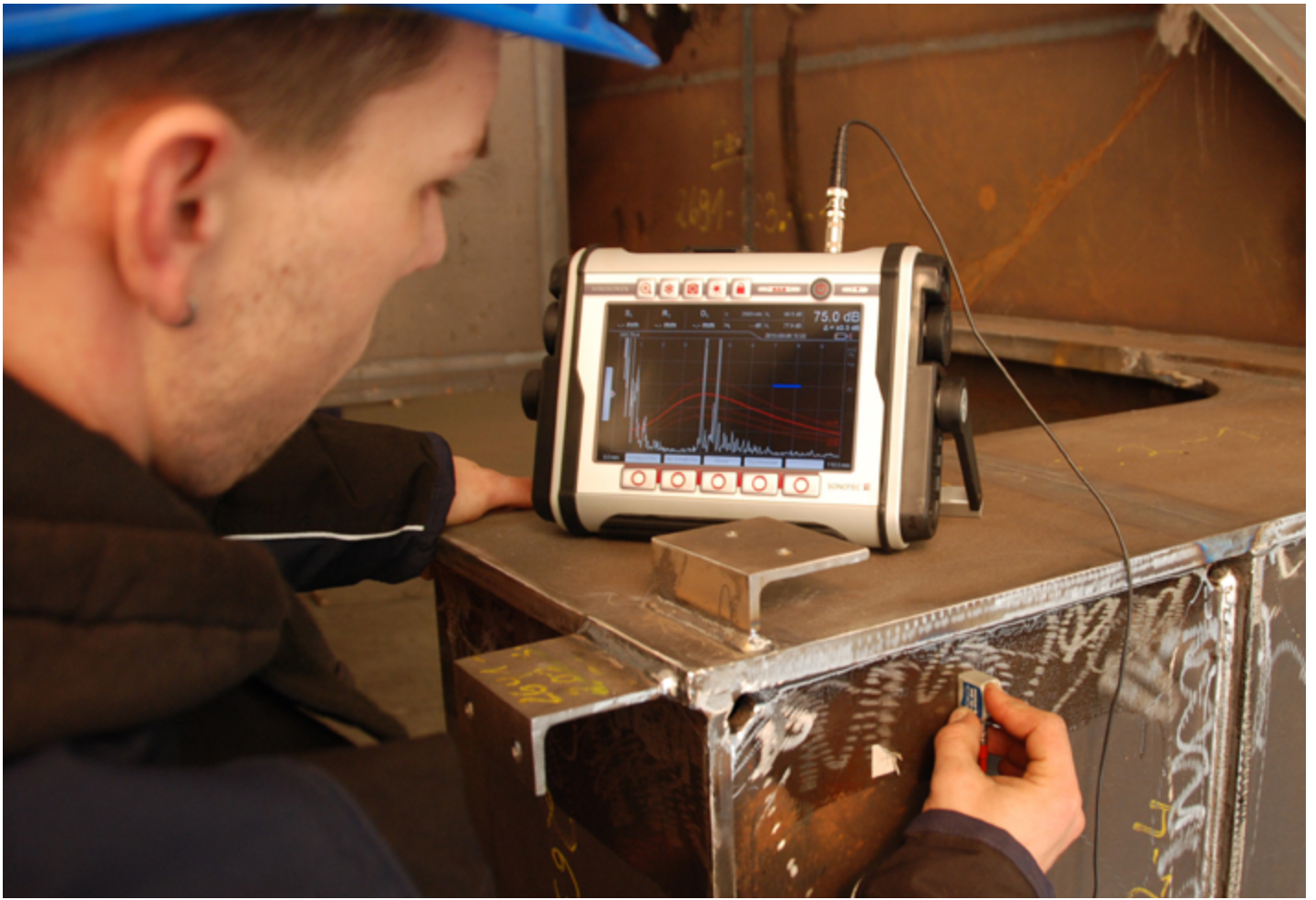# SONOSCAN ULTRASONIC PROBES

We offer an extensive range of different SONOSCAN probes. Simply choose the probe that matches your application from our product range.

ANGLE BEAM PROBES – in a range of sizes, angles and frequencies

STRAIGHT BEAM PROBES – pulse-echo and dual element probes detect even the smallest flaws

Key applications

- Weld seam testing
- Casting and forging inspection
- Sheet metal testing
- Shaft and axle testing
- Plastic and composite testing
- Wall thickness measurement

TECHNICAL DATA SONOSCREEN ST10

GENERAL DATA

Dimensions (W x H x D)	310 x 206 x 77 mm
Weight	2900 g
Temperature ranges	**Storage temperature::** –20 to +60 °C **Operating temperature:** –20 to +60 °C
Battery operation	Internal Li-Ion battery Operating time: up to 13 hours
Mains/ Charging operation	Via external power supply with wide range input (100 to 240 V, 1.07 A)
Connectors	**2 probe connectors:** LEMO 1S **Switching output/Analog output*:** LEMO 1S **Power supply:** LEMO 1S 2 USB connectors
Protection type	IP66
Menu languages	English, German, Chinese, Russian, Spanish, Italian, Japanese, Turkish, Polish, Czech, Finnish (others upon request)
Operating mode	Pulse-Echo, Transmit-Receive, Through-Transmission
Measurement unit	Inch (in) or millimeter (mm)
Measurement range	10 to 10 000 mm (up to 20 000 mm with pulse shift of max. 10 000 mm)
Sound velocity	Adjustable from 500 to 15 000 m/s, in steps of 1 m/s or fixed preset values
Measurement resolution	0.001 mm within the measurement range up to 10 000 mm (depending on sound velocity)
Amplitude evaluation	DGS*, DAC* (incl. TCG) or AWS D1.1*
Standards	DIN EN 12668-1, ASTM E1324

SCREEN

Screen type	8" color display in 16:9 format; WVGA 800 x 480 pixels
Dimensions	174 x 104 mm
Lighting/ Colour options	Adjustment of brightness and color to lighting conditions; 10 levels of brightness

DISPLAY

A-scan dimension	**Size:** 156 x 76 mm; **Resolution:** 720 x 350 pixels
A-scan mode	Normal, comparative curve or envelope
Measurement values	Up to 10 fields, customizable
Information/Settings	Probe; Measurement context; Date and time; Adjusted gain and increment; Current device settings and measurement status; Registration of USB flash drive; Color-coded charge status display, Mains supply

TRANSMITTER

Pulse shape	Rectangular, unidirectional
Polarity	Negative
Voltage	50 to 400 V, adjustable in steps of 10 V
Pulse width	Automatic, or 20 to 1000 ns, in steps of 5 ns
Pulse frequency	Automatic or manual (low, medium, high, maximum)

RECEIVER

Amplifier	**Dynamic range:** 0 to 110 dB **Increment:** 0; 0.5; 1; 2; 6; 12 dB
Rectification	Full-wave; positive/negative half-wave; RF
Reject	0 to 80 % of screen height
Amplitude measurement	0 to 125 % of screen height
Digital filters	0.5; 1; 2; 2.25; 4; 5; 10; 15; 1 to 5; 5 to 10; 10 to 15; 1 to 20; 0.5 to 20 MHz

ADJUSTMENT

Measurement range	0.5 to 10 000 mm (steel)
Distance adjustment/ Probe calibration	Automatic 2-point adjustment: calculation of sound velocity and probe delay by use of two adjustment echoes

GATES

Measuring gates	2 independent gates; Color bars (gate 1: blue, gate 2: green); Position and width adjustable over the full measurement range; Response threshold adjustable from 10 to 90 % of screen height in steps of 1 %
Functionality	Alarm in case signal exceeds or falls below the threshold value; Acoustic and visual signal (LED; color of signal corresponds to the color of gate); 2 switching outputs* (1 output per gate); 1 analog output* (sound path in % inside the gate or amplitude in % of screen height)
Zoom	Magnification of gate area over the full gate width

DATA STORAGE

Storage capacity	**Internal:** 2 GB, for up to 60 000 A-scans incl. device setup; **External:** USB flash drive
Storage options	**Internal and/or external:** Screen shot incl. all parameters, A-scan, measurement context, date and time; Setup: with all device and probe settings; Material database and Probe database
Report Generator	Software* to create test protocols including screenshots

SONOTEC preserves the right to change technical specifications without further notice. (Rev. 4.2 / 2019-04-11) *Optional

FAST SERVICE & PROFESSIONAL SUPPORT

CERTIFICATION ACCORDING TO EN OR ASTM STANDARD

COMPACT DESIGN AND POWERFUL PERFORMANCE

ALUMINUM HOUSING WITH IP67 PROTECTION CLASS

SONO-ID FOR WIRELESS PROBE RECOGNITION

SONOGRID CORROSION MANAGEMENT SOFTWARE

ADVANCED A-/B-SCAN WALL THICKNESS GAGE

SONOWALL 70

FOR ULTRASONIC NONDESTRUCTIVE TESTING

MADE IN GERMANY

SONOTEC
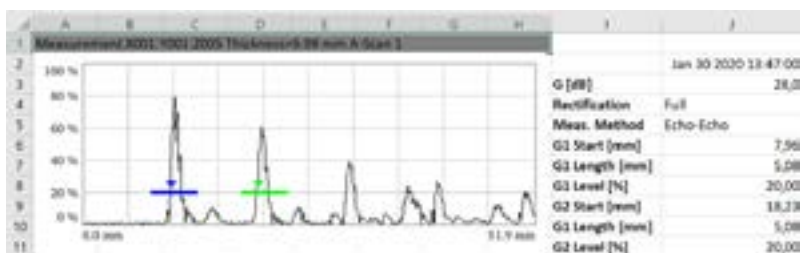ULTRASONIC SOLUTIONS

SONOGRID CORROSION MANAGEMENT SOFTWARE

- ¬ Colour coded linear, 2D and 3D matrix creation including micro grids
- ¬ Grid copy function with possibility to edit its parameters
- ¬ Easy data collection of measurement values and attachments
- ¬ Live comparison function and corrosion rate estimation
- ¬ Customizable test report in XLSX format and optional SQLite database
- ¬ Device setup list for all collected measurement points
- ¬ Unlimited text length for comments

Efficient and reliable data collection with colour coded grid visualization

Direct data export and reporting with MS-Excel including linked A-scans, B-scans, comments, setups, etc.

BEST IN CLASS PERFORMANCE

Custom
function softkey

2x LEMO-00 for
connecting probes
from all manufacturers

SONO-ID for wireless
probe recognition
and setup transfer

Optional
heavy duty case and
working harness for
hands-free operation

High resolution anti-glare
5" graphic display
(800 x 480 px),
colour scheme selectable

Setup, probe, material
and calibration block
database

Customizable display of
measurement values

Rotary knob and 4
soft keys – for rapid,
streamlined operation
and easy access to all
functions in left- and
right-handed usage

SONO
((•))
ID

Largest A-scan
presentation in its class:
4,7" diagonal

Optimal readability even
in direct sunlight

Robust aluminum
housing
IP67 certified

Powerful 400V pulser
for highest penetration
capabilities

Short cut function for
fast access to all relevant
settings

Drop tested according to
EN 60068-2-31 (2008);
20 Drops

Mini USB port | microSD | Power supply

SONOWALL 70

42.0 dB

0.0   T/R - TSSi | 5.00 MHz   51.6
                 No Wedge   20.50 mm

10.00 mm

5.00 mm

Echo-Echo | ZeroCr+

Th [mm]   S₁ [mm]   c [m/s]
10.00   10.30   5970

SONOTEC

POWERFUL SOFTWARE FUNCTIONS

¬ A and B-scan
¬ Single and dual element probe operation
¬ Single-echo and echo-echo mode
¬ Automatic gate, range and gain control
¬ Differential wall loss
¬ V-path error correction
¬ Through-coat measurement
¬ Basic and expert mode (password protected)
¬ Temperature compensation
¬ Multi-layer measurement
¬ Sound speed measurement
¬ Dual element probe zeroing in air*[1]

VIDEO TUTORIALS

Watch our SONOWALL 70 video tutorials and get to know more about its broad functions:

Calibrations

https://www.youtube.com/SONOTECGmbH

FLAW DETECTION MODE LITE

The SONOWALL 70 features basic flaw detection capabilities including:

¬ Trigonometric calculations
¬ The use of angle beam probes
¬ AVG / DGS
¬ DAC with TCG
¬ AWS D1.1
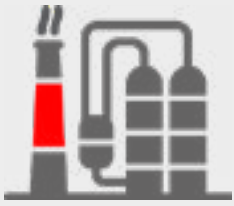¬ Backwall echo attenuation

ACCESSORIES

Useful range of accessories

¬ Handstrap for ergonomic single hand operation
¬ Desktop stand - ideal for inside use and calibrations
¬ 4-point working harness for longterm operation (optional)
¬ Transport & storage case including space for accessories
¬ Heavy Duty protection case for harsh environments (optional)
¬ Calibration blocks, cables and probes (optional)

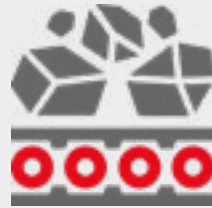*[1]: for SONSOCAN and most third party probes

Corrosion and erosion measurement, e.g. oil and gas industry

Quality control of forgings and castings, e.g. heavy industry

Inspection of steel constructions, e.g. shipbuilding industry

Abrasion testing of conveyor belts, e.g. mining industry

MATERIALS: METALS | GFRP & CFRP | PLASTICS | RUBBER ETC.

SONOSCAN PROBES

We offer a large selection of SONOSCAN standard single element and dual element probes as well as SONO-ID probes for wireless probe detection.

SONOTEC also specializes in customized transducers - send us your application!

STANDARD PROBES FOR WALL THICKNESS GAGING

TYPE		FREQUENCY	ELEMENT SIZE	MEASUREMENT RANGE
PL1	Single element probe	1 MHz	Ø 24 mm	20 to 5000 mm
PL2	Single element probe	2 MHz	Ø 24 mm	15 to 2000 mm
PS2	Single element probe	2 MHz	Ø 10 mm	6 to 1000 mm
TS2	Dual element probe	2 MHz	Ø 11/2 mm	5 to 800 mm
TL2	Dual element probe	2 MHz	7 x 18 mm	10 to 1500 mm
PS4	Single element probe	4 MHz	Ø 10 mm	4 to 600 mm
TS4	Dual element probe	4 MHz	3.5 x 10 mm	2 to 500 mm
TS5	Dual element probe	5 MHz	Ø 9/2 mm	1 to 400 mm
TS5 P	Probe with pipe adapter	5 MHz	Ø 9/2 mm	3 to 200 mm
TS5 H	High temperature probe	5 MHz	Ø 8/2 mm	3 to 200 mm
TXS7.5	Dual element probe	7.5 MHz	Ø 5/2 mm	0.8 to 50 mm
PXS10	Single element probe	10 MHz	Ø 6 mm	0.6 to 100 mm
PXS15	Single element probe	15 MHz	Ø 5 mm	0.6 to 25 mm

Standards	DIN EN 12668-1, ASTM E 1324, ASTM E 317, DIN EN 15317 (optional)
Operating temperature	-20 to +60 °C
Screen	5" TFT Screen, 800 x 480 Pixel, 60 Hz
Measurement methods	Single-Echo, Echo-Echo
Size (W x H x D)	195 x 115 x 40 mm
Weight	990 g
Housing	Aluminum
Protection class	IP67
Battery	Li-Ion, up to 12 hours operation
Wireless probe recognition	For selected SONOSCAN Probes with SONO-ID
Internal memory	8 GB
External memory	MicroSD card up to max. 128 GB
Reporting	Data logger | CSV Screenshots | JPEG, PNG SONOGRID | XLSX, SQLite database (optional)
Password protection	For expert mode (access to all settings and basic mode configuration)
Transmitter	
Bandwidth	0.5 to 15 MHz
Pulse	Negative rectangle (single pulse)
Pulse width	20 to 500 ns, in 5-ns-steps
Voltage	0 to 400 V, in 10-V-steps
Damping	50 Ohm; 400 Ohm
Receiver	
Dynamic range	Up to 110 dB
Amplifier bandwidth	0.2 to 20 MHz
Digital filters	1/2/4/5/7.5/10/15/0.5-20 MHz (EN 12688-1 certified)
Averaging	2x, 4x, 8x
Input impedance	500 Ohm (in T/R-mode)
Probe compatibility	Single and dual element (manufacturer independent)
Resolution	Up to 0.001 mm
Scan	100 MSps @ 12 Bit
Gates	2 independant gates (including automatic positioning) Gate 3+4 only available in multilayer mode
Measurement range	Up to 10 000 mm (20 000 mm with screen shift)
Probe connection	2x LEMO 00 (IP67)

FAST SERVICE & PROFESSIONAL SUPPORT

SONOTEC
Certified according to ISO 9001