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.
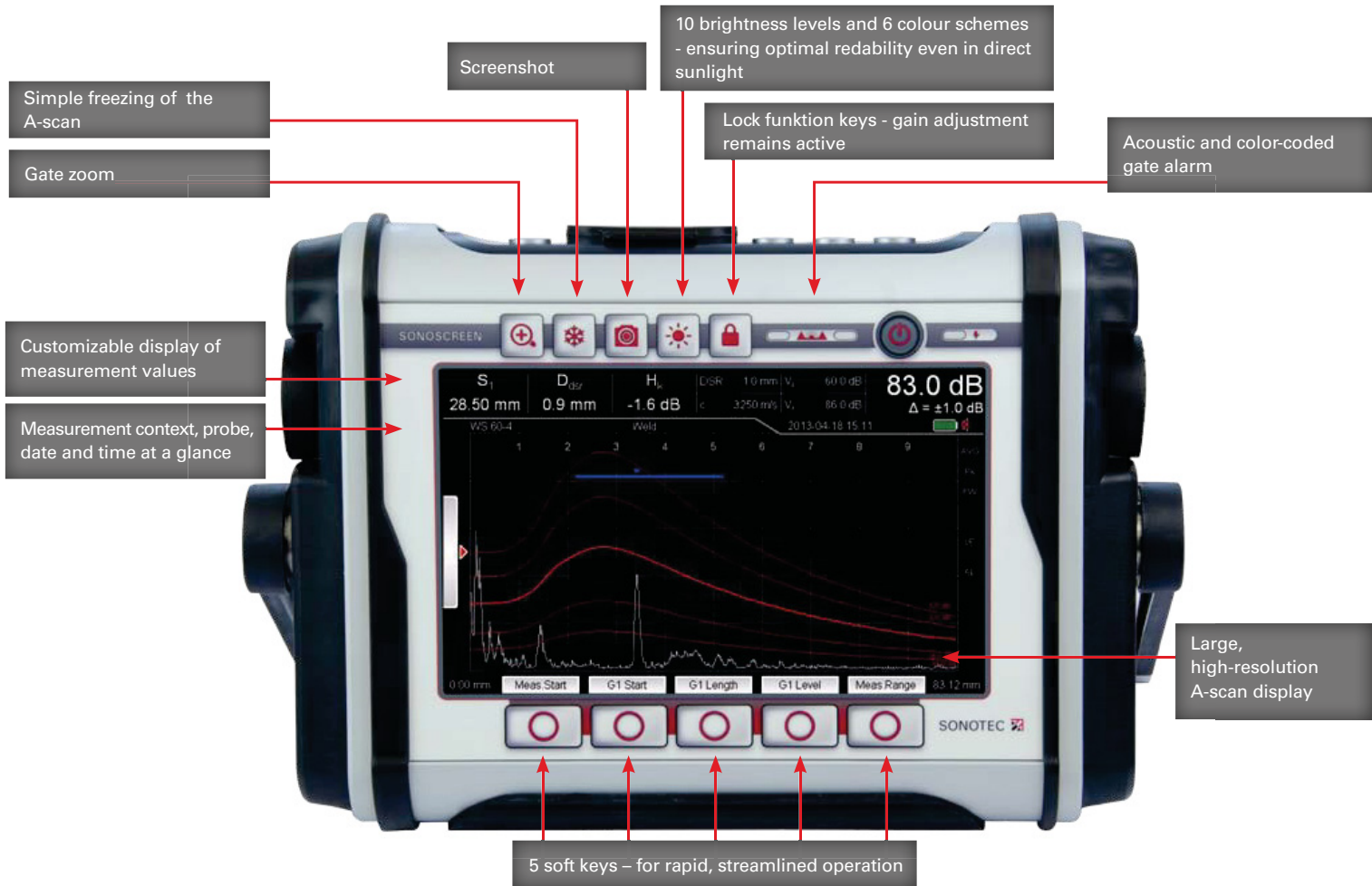
ADVANTAGES AT A GLANCE

- 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

All probe settings at a glance

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

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

Fast documentation of the test results with all parameters

USER-FRIENDLY – ERGONOMIC DESIGN – EXTREMELY ROBUST

Simple freezing of the A-scan

Gate zoom

Screenshot

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

Lock funktion keys - gain adjustment remains active

Acoustic and color-coded gate alarm

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.

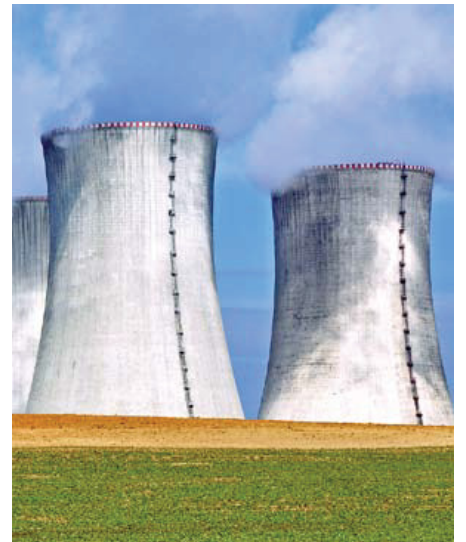**ANGLE BEAM PROBES** – in a range of sizes, angles and frequencies

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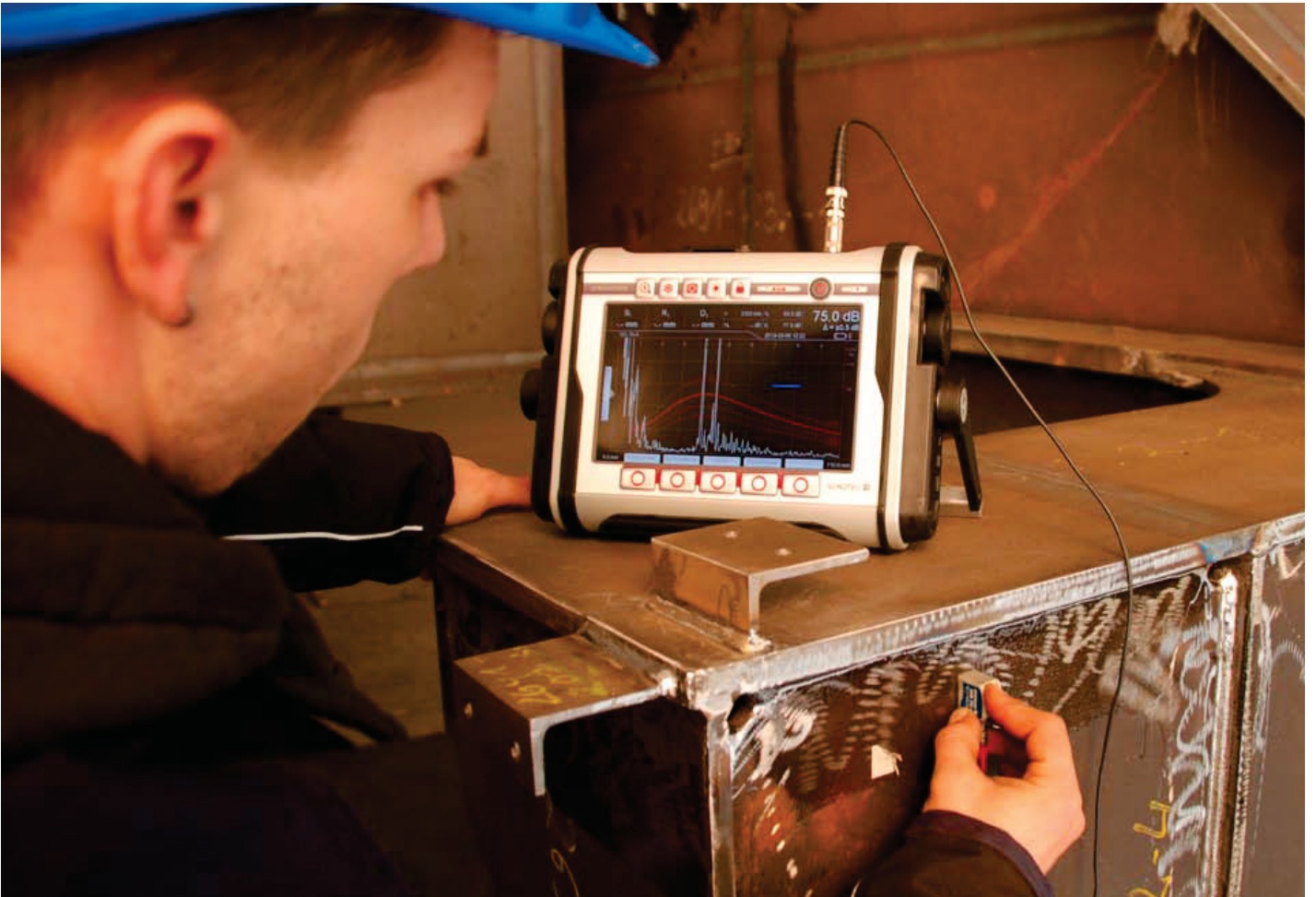
Key applications

- 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 (min. 100 Hz; max. 10 kHz)

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

FAST SERVICE & PROFESSIONAL SUPPORT