

SITESCAN D+ SERIES

LIGHTWEIGHT DIGITAL ULTRASONIC FLAW DETECTORS



THE SITESCAN D+ SERIES

Quality, performance and reliability repackaged.

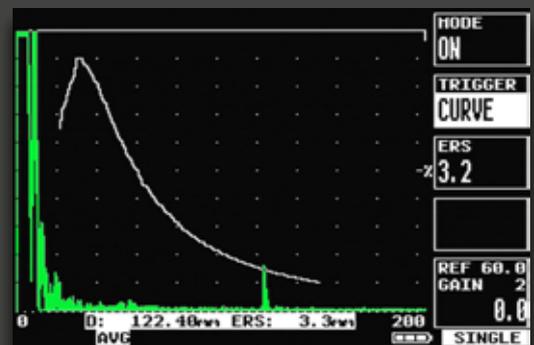
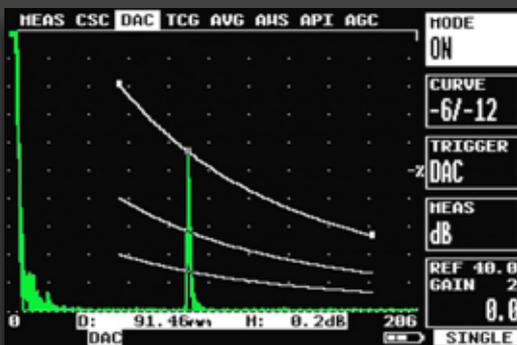
For over 20 years the SITESCAN name has meant highly reliable, technician focussed flaw detectors and the new range continues this tradition. The SITESCAN D+ delivers high performance and advanced features, yet our engineer's experience in user interface design has ensured it is easy and quick to use. The acknowledged ease of use of previous generation SITESCANS has been enhanced with the menu navigation scroll-wheel, providing easy access to functions. The menu structure has been designed to guide the user through their task with operation quickly becoming second nature.

The SITESCAN D-10+ has a broad band amplifier compatible with a wide range of transducers whilst the D-20+ model has several narrow bands for improved performance. The "analogue feel" from the high quality broadband amplifier shows all the detail required to identify defect types such as holes or cracks, and sufficient resolution for identifying small signals. Typical applications are weld inspection, corrosion testing, small castings, forgings and delamination checking.



Lightweight Ergonomics

The SITESCAN D+ Series represents a new generation of portable digital flaw detectors. Its ground breaking ergonomic design has been evolved to make it comfortable for day-long use. A large screen display has not been sacrificed to achieve compact dimensions giving the SITESCAN D+ series one of the highest display to size ratios of any field instrument.



Flaw Sizing (DGS/AVG, AWS, API) Optional

Optional advanced flaw sizing techniques include DAC, AVG, API 5UE and AWS standards; ensuring accurate and rapid sizing and reporting of indications.

DAC

Up to 10 points can be used to construct a digital DAC curve, with selectable JIS/ASME and EN1714 curves. Selected DAC curve acts as a monitor gate for alarm outputs. Gate 1 can be used to measure defect height as either % DAC, DAC+dB or %Full Screen Height.

AVG

AVG/DGS software can be configured for any transducer and gives accurate sizing of flaws with direct readout of Equivalent Reflector Size. The visible ERS curve can be adjusted to display the desired acceptance level and used to trigger the alarm and measurement reading.

High Visibility Display

For any flaw detector the display is a crucial element. The SITESCAN D+ series has large colour transfective TFT display as standard, providing high visibility at any light level. The choice of colours for menus and waveform display enhance clarity, with the LCD simulation mode giving direct sunlight readability. The TFT does not suffer the typical black out problems or temperature limitations of LCD giving full weather capability. The Full Screen mode maximizes the A-scan area to improve readability further whilst testing and its fast response and peak capture functionality ensure any indication is clearly displayed, even if it only appears for one cycle of the PRF.



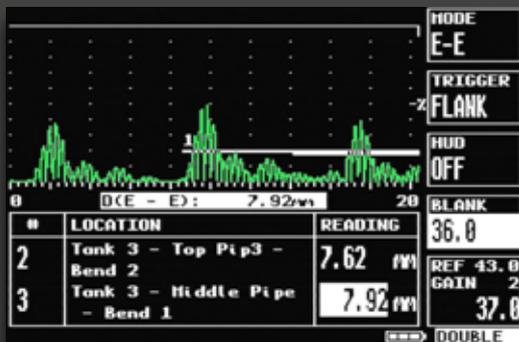
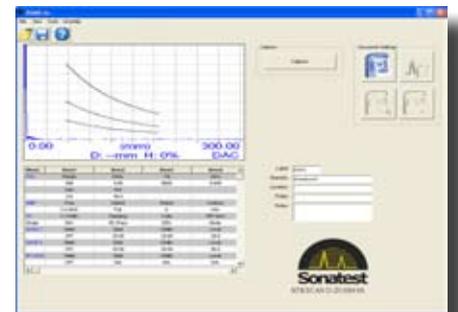
Robust and Adaptable

Sonatest's reputation for robust design and proven reliability is an important aspect of flaw detector ownership. Down time is expensive and should be minimized to ensure maximum productivity. The SITESCAN D+ Series is constructed to high standards using engineered polymers and sealed to IP67, and is designed to incorporate many features to make site work easier. The integrated pipe stand is adjustable to give easy positioning, whilst the standard camera mount fixing on the back opens up a wide variety of useful accessories such as magnetic hooks, tripod mounts and body harnesses. The SITESCAN D+ units can be easily attached to pipe work, metal plates or hung from the nearest fixing, giving the user both hands free for scanning.



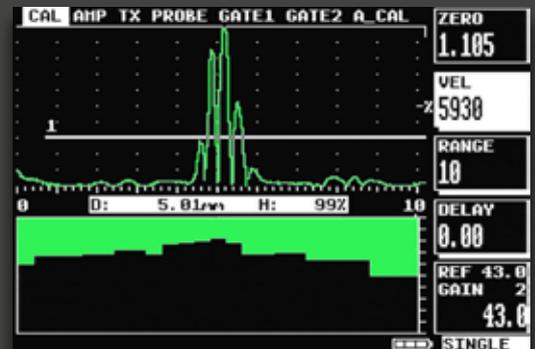
SDMS Lite (Data Management Software)

This Windows based data management tool interfaces the SITESCAN D+ series to a PC. The Lite version comes as standard, with the capability to capture the displayed A-scan and transfer it Microsoft Word. This is useful for producing application notes or reporting indications. The optional full version uploads and downloads panel settings and A-scans, which can also be transferred into Microsoft Word for customised reporting. Thickness readings can be transferred into Excel for more advanced analysis such as charts for B & C-scans.



Advanced Thickness Logging

Thickness measurement is a major application of the SITESCAN D+ series and good data logging tools are essential to productivity. As standard, SITESCAN has the capability to store readings in a 2 or 3 dimensional grid format, or download test sequence files from asset management software. In addition to the basic thickness reading, the user can store the A-Scan and user defined notes, or with the B-Scan option, a full B-Scan image. Reviewing readings is easy using the scroll wheel and the USB connection enables fast transfer of data.



B-Scan

The optional B-scan display function shows the cross section of the material based on its wall thickness. The B-scan has selected update rates from 3 to 10 times per second, and can be stored with the thickness readings and transferred to the PC via SDMS.

Navigation

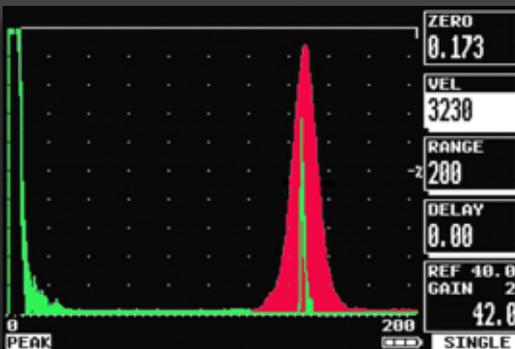
The Sitescan D+ series uses a 3rd generation innovative rotary control wheel for fast, single handed menu selection and setting changes. The tactile, durable keypad uses new technology to increase resistance to water, along with mechanical switches for enhanced lifetime. Simply slide your thumb or finger around the unique scroll-wheel to quickly access menu items, or change parameters. The scroll wheel offers the advantages of a rotary knob, but has no moving parts to become damaged, or blocked by couplants.

Direct Access Keys

From Sonatest's experience of flaw detector design we know users want direct access to the essential parameters of gate adjustment and gain control. These are positioned close to the scroll wheel, so it is easy to switch between gain, gates and the menu with one hand. There are also direct keys for freezing the scan and switching to full screen mode.

User Buttons

The Sitescan D+ series has unique User Keys that can be assigned directly to menu items or actions. The system works in the same way as the preset radio buttons in your car. Highlight the menu item you want and hold the User button for a few seconds, to assign the key. Using the four keys operators can define their own direct access functions based on the application. The keys can also be assigned actions, such as one press storing of A-scans and auto 80% adjustment of echoes.



Active Peak

The Active Peak function shows the echo dynamic envelope along with the live A-Scan. This is particularly useful for defect classification in applications such as weld inspections. The peak signal can also be "held" as a reference to show the natural reflectors of a part, helping to distinguish defect indications.

Using Persistence causes the Active Peak to decay automatically, allowing for faster scanning and detection.

CAL	ENABLED	UNITS	METRIC
AHP	ENABLED	CLICK	OFF
TX	ENABLED	ALARM	MUTE
PROBE	ENABLED	MENUS	EDIT
GATE1	ENABLED	REF 60.0	
GATE2	ENABLED	GAIN 2	0.0
A_CAL	ENABLED	SINGLE	
HEAS	ENABLED		
CSC	DISABLED		
DAC	ENABLED		
AVG	ENABLED		
AGC	ENABLED		
PANEL	ENABLED		
A-LOG	ENABLED		

Customisable Menu

The user can configure the menu to only show those functions required, this enables the Sitescan to adapt to the application and level of user. For example, when thickness checking the DAC and AVG functions can be disabled.

SITESCAN D+ SERIES Specifications D-10+ and D-20+

(specifications are subject to change)

Test Range	5mm (0.2in) up to 5,000 mm (200 in.) in steel. Variable in sequence 10mm or 1mm.
Velocity	1000 - 9999 m/s.
Probe Zero	0 to 999.999 μ s.
Delay	0-5,000m at steel velocity in 0.05 steps (0-200 in 0.002 in. steps)
Gain	0 to 110dB in 0.5, 1, 2, 6, 10, 14 and 20dB steps.
Test Modes	Pulse echo and transmit/receive.
Gate	Start & Width adjustable over full range. Amplitude 0-100%, 0.5% steps visual and audible alarms. Positive triggering.
Measurement Modes	
Depth	Depth and amplitude of first signal in gate.
Echo-Echo	Echo-to-Echo distance measurement; (single gate). Flank to Flank, Automatic Gate 2 positioning.
Trig	Trigonometric display of beam path, depth and surface distance. Calculation of skip depth and curved surface compensation, X- offset for transducer.
T-Min	Holds minimum thickness in depth mode.
Pulsar Voltage	Spike - 200 Volt peak amplitude, rise/fall time <10ns into 50 ohm. Fixed 20nS spike width.
P.R.F	Selectable 35 to 500 Hz, in 5Hz steps.
Display	Colour Transflective TFT: Display area 116.16 x 87.2 mm (4.57 x 3.43 in). A-Scan Area 610 x 400 pixels max sunlight viewable.
Screen Update Rate	50 or 60Hz.
Rectification	Full wave, positive, negative, RF.
Frequency Bands	Broadband 1.0 - 15MHz - 3dB.
Vertical Linearity	Vertical = 1% Full Screen Height (FSH).
Amplifier Linearity	\pm 0.1dB.
Horizontal Linearity	0.33% Full Screen Width (FSW).
Reject	50%. (LED warning light when selected).
Units	Metric (mm) or inch (in).
A-Scan Memory	5,000 waveforms.
Panel Memory	100 stores for calibration settings.
Thickness Logging	Storage for 100,000 thickness readings configured either by Block/Location/Number mode or alphanumeric pre-program- mable worksheets. Readings can be exported to MS Excel using optional SDMS software.
Thickness Logging with A-Scan	5,000 A-Scans and Thickness readings.
Auto-Cal	Automatic calibration with two echoes.
Display Freeze	Holds current waveform on screen.
Active Peak Memory	For echo-dynamic pattern capture.
Persistence	Decaying echo-dynamic capture
Online Help	Instant Operator guidance on functions accessed from direct keys.
Language Support	Six user selectable languages from: English, German, French, Spanish, Dutch, Italian, Russian, Polish, Czech, Chinese.

USB	For connection to PC & printer.
Video	Composite video (PAL & NTSC)
Transducer Sockets	BNC or LEMO1 (factory option)
Battery	Lithium Ion 14.4V. Minimum 9.5 hours use, typically 12 hours, maximum 18 hrs indication of battery charge. Recharge time 3 hours. Battery can be charged separately.
Charger	100-240 VAC, 50-60 Hz.
Environmental	Meets IP67
Temperature	Operating -10°C to 55°C (14°F - 131°F).
Size	H172mm x W238mm x D70mm (6.77in x 9.37in x 2.75in).
Weight	1.7kg (2.4lbs) with battery.
Warranty	1 year.
Calibration Standard	EN12668.

Sitescan D-20+ Additional Specification (Sitescan D-20 only)

Frequency Bands	1 MHz, 2.25 MHz, 5 MHz. Wide (1-20 MHz).
Square Wave Pulsar	Optimised for each band (spike on wide).
TCG	Time Corrected Gain 40dB dynamic range, 30dB per microsecond, up to 10 points for curve definition.

Sitescan D-10+ & D-20+ Options (Available in all variants)

DAC Option Up to 10 points may be entered and used to digitally draw a
DAC curve; reference -2, -6, -10, -12, -14 dB curves can be
selected for JIS, ASME and EN 1714 codes.

DAC plus AVG/DGS Automatic Defect Sizing using probe data.

DAC plus AWS & API

AWS	Automatic Defect Sizing in accordance with AWS D1.1 Structural Welding.
API	Automatic Defect sizing in accordance with API 5UE.

DAC plus DGS, AWS & API (functionality as above)

GATE 2 Optional second gate allows Gate-to-Gate measurement
mode.

B-Scan Displays profile of thickness. Selectable rates of 3, 5, 10
updates per second.

Standard D+ Series Kit

Sitescan D-10+ or D-20+.
Battery, Charger, Mains Cable.
User Guide.
Carry Bag.
SDMS Lite & USB cable.
Display Window Cover.
Couplant.

Application Packs

All kits include the Site Pack option, transducers, cables and test blocks.

D-10+ Weld Test Kit-EU
D-10+ Weld Test Kit -US
D-10+ Weld Test Kit-Universal
D-20+ Weld Test Kit-EU
D-20+ Weld Test Kit-US
D-20+ Weld Test Kit-Universal
D-10+ Thickness Testing Kit - EU
D-10+ Thickness Testing Kit - US

Site Pack

Rugged Shipping Case
Hanging Brackets and Hooks

Accessories

Support Stands Pack
Body Harness



SITESCAN D+ Series Accessories

Site Pack

Rugged Shipping Case.

Airplane carry on size:

488 mm x 386 mm x 229 mm.

19.2 in x 15.2 in x 9.0 in.

Centre of gravity bracket (magnetic hook supplied).

Webbing bracket.

Magnetic bracket.

Webbing / two Karabiners strap hook.



Support Stands Pack

An articulated arm and fitting with 3 bases:

Vacuum

Magnetic

Clamp



Body Harness

This unique body harness gives the end user the opportunity to work hands-free with the Sitescan D+ series units. The patented harness design has been developed considering both function and good carrying ergonomics and is very lightweight.

The wide shoulder plate, with body centred positioning, will make the carrying of the Sitescan D+ unit a joy for the user. The harness itself is very stable but can be supplemented with a waist strap if the work task involves a lot of movement and is easy to take off and store. This body harness is ideal for extended periods of use and the front plate is adjustable to fit all back lengths. The mount plate can be locked in place with a ball and socket joint to present the instrument in an ideal position for use, whilst distributing the load across the body, avoiding fatigue and strain to wrists and arms.



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