ACOUSTIC
CONTROL
SYSTEMS

ACS-SOLUTIONS GMBH
SCIENCE PARK 2, 66123 SAARBRÜCKEN, GERMANY
PHONE: +49 (0) 681-96592270 | FAX: +49 (0) 681-96592280
WWW.ACS-INTERNATIONAL.COM | INFO@ACS-INTERNATIONAL.COM

ULTRASONIC FLAW DETECTOR

A1214 EXPERT

- WELD JOINTS INSPECTION
- LOCATING CORROSION, CRACKS, INTERNAL STRATIFICATIONS AND OTHER FLAWS
- LOCATING AND SIZING UP FLAWS (DISCONTINUITIES AND INHOMOGENEITIES) IN METAL AND PLASTIC OBJECTS
- THICKNESS MEASUREMENT

A1214 EXPERT SPAECIAL FEATURES

The an ultrasonic flaw detector offering all up-to-date functions with built-in signal amplitude correction types: DGS-diagrams, Digital TCG, and DAC-curves.

Shockproof case of IP65 ingress protection rating.

Anti-slipping rubberized coating of the instrument's electronic unit case.

Easy instrument setup and high efficiency inspection.

User-friendly interface with «quick access» keys.

User-friendly interface with shortcut keys for quick access to control functions.

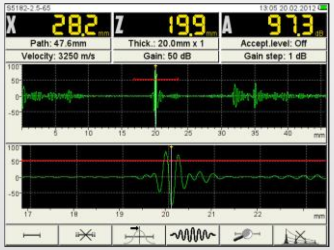
At any operation mode the lower part of the screen features an icon menu to access set up and functions quickly.

Automatic detection of the signal level and locations of the flaws when operating with the monitor level (three-level gate).

Voice comments can be added to the saved results by means of the freehand Bluetooth set.

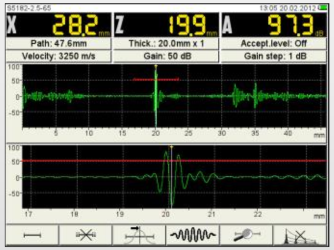
GENERAL FEATURES

RF type signals



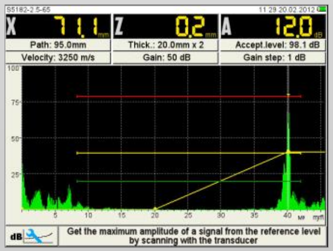
The signal can be represented in undetected form - RF type signals (radio-signal) in real time, making it possible to examine signal phases in details, to perform testing with a lot of structural noises and to distinguish signals from nearby reflectors.

DGS-diagrams



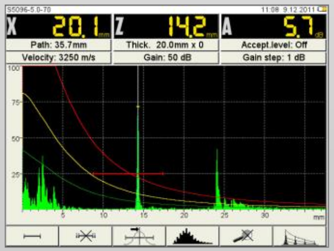
DGS-diagrams for single-crystal transducers show three curves, representing the acceptance, reporting and examination levels. The equivalent area of discontinuity is evaluated automatically. With feature you avoid manual evaluations of flaw area to increase the testing efficiency significantly.

Digital TCG



Digital TCG allows to modify the signal, basing on an arbitrary function set up by 32 node points. Mode points are set up, modified and deleted at a special TCG editing mode. Setup of TCG is performed to get pulses of equal height from equal reflectors providing correct sizing of flaws through the whole thickness of the object of inspection.

DAC-curves

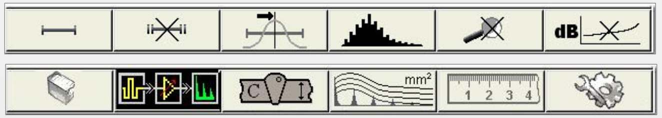


DAC-curves show three curves, representing the acceptance, reporting and examination levels. This allows you correctly estimate the validity of the detected defects, according to the current normative and methods of ultrasonic testing.

INTUITIVE USER INTERFACE OF SETTING UP AND OPERATING THE DEVICE

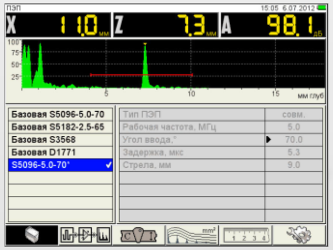
Quick access to control functions

At any operation mode the lower part of the screen features an icon menu to access set up and functions quickly.



Energy – independent memory for 2000 display images (A-Scans with settings of inspection)

At the MENU mode the signal and its description is shown at the upper part of the display allowing to adjust settings of inspection on-the-fly.



Large library of configurations (100 variants)

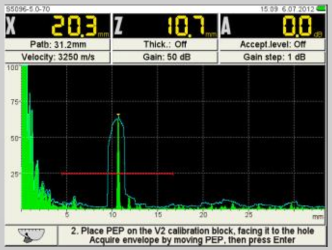
The device can be customized for various situations and objects in a lab, and on-site the operator can just select the right configuration from the menu. All settings are saved in the nonvolatile memory.

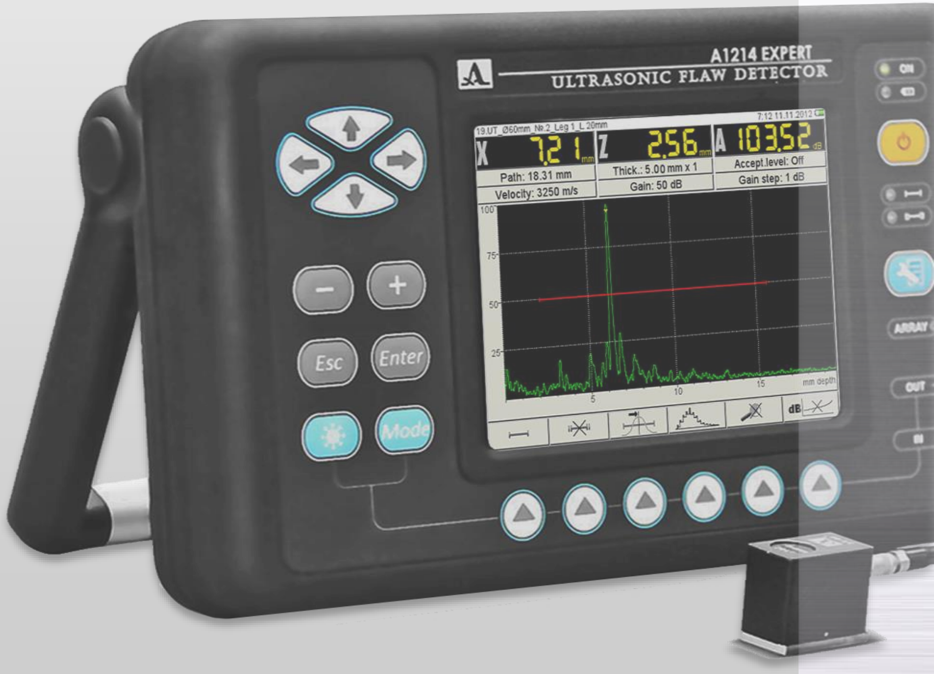
Voice comments can be added to saved imaged with the help of freehand Bluetooth set

Within 20 seconds the user is able to record the necessary information about the test object with a reference to a frame of saved A-Scan.

Automatic calibration of the angle beam

Automatic procedure of angle correction and delay time in the wedge in case of transducer wearing.





SPECIFICATIONS

Operating frequencies of transducers	0.5 to 15.0 MHz
Deviation of operating frequencies from nominal	±10%
Material ultrasound velocity setting range	500 to 14 999 m/s
Adjustable pulse repetition frequency (PRF)	25, 50, 250, 500, 1 000 Hz
Energy settings	20 V, 100 V, 200 V
Gain regulation range	0 to 100 dB (1.0 step)
Excitation pulse, periods	0.5 to 5.0 (0.5 step)
Measurement range of the time intervals at frequency 2.5 MHz	0 to 1 900 µs
Limits of permissible absolute measurement errors of the time intervals, where $T_{meas.}$ – measured value of time interval	$\pm(0.1 + 0.0001 \cdot T_{meas.})$ µs
Rectification	Full-wave, RF
Refracted angle	0° to 90° in 0.5° increments
Test modes	Pulse Echo, Dual, or Through Transmission
Measurement units	Millimeters
Sweep scale which determine the signal display parameter	mm, mm depth, µs
Discreteness of the readings	0.01, 0.1, 1.0
Level of the Cut-off removes the noise signals from the screen	On/Off 1 to 100%, (1.0 step)
Measurement gates	Gate 1, Gate 2, Gate 2 – Gate 1

Measurement range of the depth of the flaw location (steel) with straight beam transducers	S3568 2.5A0D10CL: 7.0 to 6 000 mm D1771 4.0A0D12CL: 2.0 to 3 000 mm
Limits of permissible absolute measurement error with the straight beam, where H is the measured depth	$\pm(0.02 \cdot H + 1.00)$ mm
Measurement ranges of the flaw locations (steel) with angle beam transducers	S5182 2.5A65D12CS: 2.0 to 1300 mm S5096 5.0A70D6CS: 2.0 to 500 mm
Limits of permissible absolute measurement errors with angle beam, where H is the measured depth and L is the measured length over the surface to the flaw	$\pm(0.03 \cdot H + 1.00)$ mm $\pm(0.03 \cdot L + 1.00)$ mm
Dynamic TGS range, not less than	20 dB
Features	Digital TCG (32-point interpolation), DGS-diagrams and DAC-curves
Display type	Color TFT
Display resolution	640 x 480 pixels
Overall dimensions	260 mm x 166 mm x 80 mm
Weight with battery	1.8 kg
Power supply source	11.1 V lithium-ion battery
Battery life, not less than	18.0 hours
Mean time between failures	18 000 hours
Average service life, min.	5 years
Operating temperature range	-30 to +55° C, 95% relative humidity

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DELIVERY KIT

- A1214 EXPERT – flaw detector electronic unit
- Detachable frost proof Li-on battery
- D1771 4.0A0D12CL transducer
- S3568 2.5A0D10CL transducer
- S5182 2.5A65D12CS transducer
- S5096 5.0A70D6CS transducer
- LEMO 00 - LEMO 00 double cable 1.2 m
- LEMO 00 - LEMO 00 single cable 1.2 m
- Net adapter for 220 V – 15 V.
- USB A-Micro B cable
- V2/25 calibrating block
- Soft cover
- Ultrasonic couplant, bottle 0.1 kg
- Ruggedized carrying case
- Calibration certificate

Warranty certificate: 24 months for A1214 EXPERT – flaw detector electronic unit

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