Advanced Ultrasonic
Proceq Flaw Detector 100

Affordable high tech

- An essential tool for inspection, investigation and technique development
- Recognise more with a high pulser voltage
- Broad system bandwidth from 200 kHz to 20 mHz
- Including true top view and DGS flaw sizing technique
- All models have twin axis encoding

Excellent software and reporting

- Wizards and option specific help for fast configurations
- 3D scan plans assist in creating inspection procedures and analyzing the results
- Save and re-use settings
- Seamless connectivity between instrument and PC software
- Lateral wave removal functionality for TOFD

Rugged and compact

- Lightweight for single hand operation
- Robust IP 66 housing
- Protected connections: 2x USB, 1x Ethernet

Upgrade anytime, anywhere on-site

UT → TOFD

UT → PA 16:16

UT → PA 16:64

Special upgrade: Export raw data in CSV format
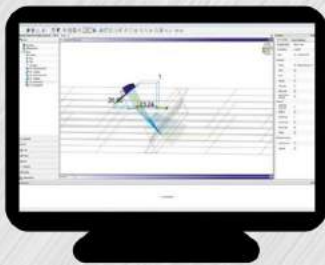
Click wheel for fast navigation

Grouped options for easy setup, measurement and analysis

Shortcut keys for easy access to common options

Context sensitive help and workflow based tabs provide an intuitive user interface

Customizable screen with selectable layouts

Proceq FD Link Software for Preparation and Reporting

✓ Create acquisition layout and new sheets / customize layouts
✓ Review data / add cursors / extraction box / extract views
✓ Add free hand measurements and create images for reports
✓ Show defect position with the 3D toolset and add annotations
✓ Produce, open and review a PDF report
✓ Export data from amplitude Top / C-Scan as a .csv file

Proceq's advanced ultrasonic flaw detector offers technicians an extremely comprehensive measurement solution. All popular flaw sizing techniques such as DGS/AVG, DAC, TGC and AWS are included. Thanks to the A, B, C, True Top and End scans imaging capabilities, users can address many applications:

- General component inspection
- Pipeline welds
- Complex geometries
- Forgings and castings
- Aircraft composites delamination
- Corrosion mapping inspection
- On-site thickness profiling

For efficient weld inspection, Proceq is offering both focused and unfocused PA scans.

OIL & GAS
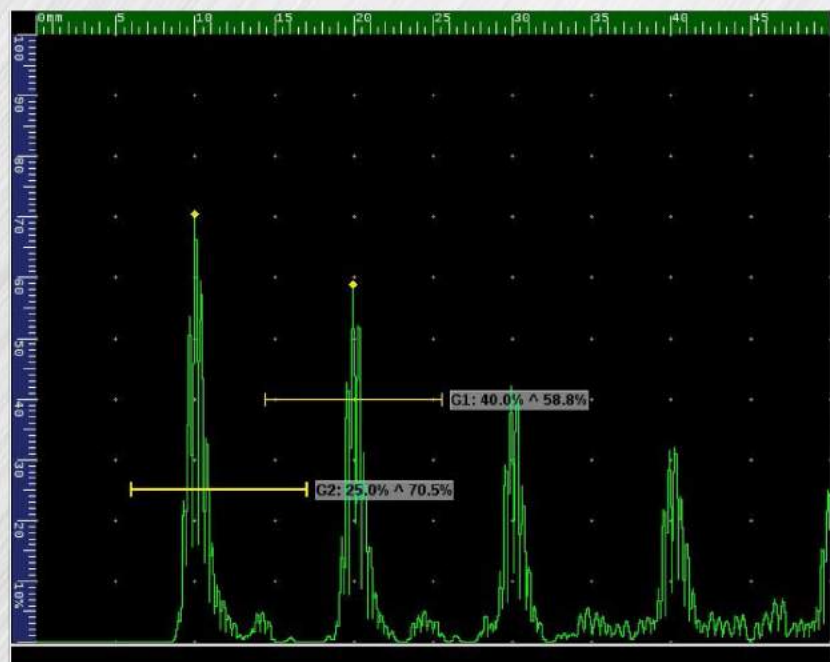
AEROSPACE

AUTOMOTIVE

RAILWAYS

MACHINED PARTS

TRAINING & RESEARCH

AND MANY MORE

proceq

Two channels allow to inspect parts of large thickness up to 100 mm in one pass. In most cases a pre-amplifier is not necessary. The main applications include:

- ✓ Quick inspection of axial and circumferential welds
- ✓ In-service defect monitoring
- ✓ Excellent defect sizing and characterisation
- ✓ Inspecting 6-350 mm thick components

On board lateral wave removal and lateral wave straightening tools improve the data quality and probability of detection.
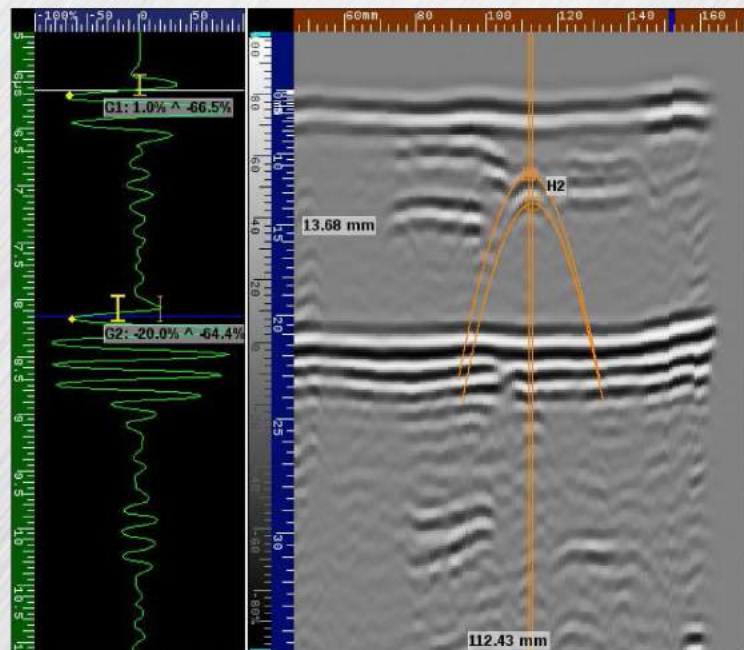
PA 16:16

The 16 active PA elements are suitable to create a sectoral scan to inspect:

- ✓ Pipeline butt welds
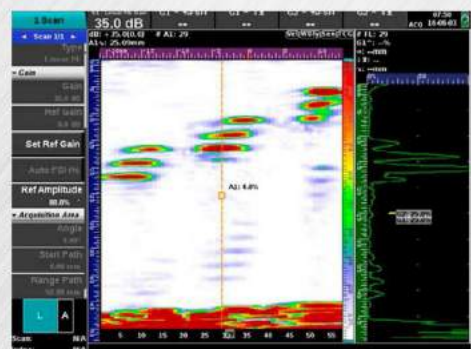- ✓ Complex geometries
- ✓ Bolts and fasteners

The sectoral scan can have up to three extracted A scans.

PA 16:64

The extra elements allow for rapid electronic scanning on the following components:

- ✓ Aircraft composites delamination
- ✓ Corrosion mapping inspection
- ✓ On-site thickness profiling
- ✓ Laboratory immersion scanning

Conventional, TOFD and Phased Array Probes

Our application experts work with specialized suppliers of probes and accessories to deliver a custom solution to meet your needs.

The Proceq Flaw Detector 100 is fully compatible with a very wide range of conventional and phased array probes. Proceq stocks the most common accessories for a quick delivery.

Supporting Accessories

We also supply adaptors so you can connect your existing probes or scanners.

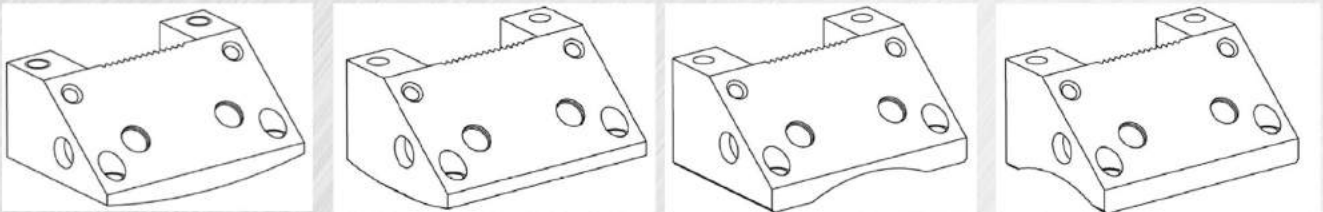**Adaptors**

Calibration Blocks

Scanners / Encoders

Customized Wedges

The phased array probe is typically a standard solution. However, the wedge performs the difficult task of coupling to the test object to efficiently transfer sound. For that reason, Proceq offers you a rapid custom wedge solution. A Proceq expert will support you with the design, please call us for assistance.

Hardware

Housing	• Dimensions (HxWxD) 205 mm x 300 mm x 90 mm (8.1 inch x 11.8 inch x 3.5 inch) • Weight (with battery) 3.5 kg (7.7 lb)
Display	• 8.4" 800 x 600 pixel resolution • Display Colours 260k (65535 colours for scan palettes) • Display type TFT LCD, 450 Cd/m2, with 2% reflectivity
Data Storage	• Storage device: USB, in-built solid state hard disk (4 GB) • Data file size: 3 GB
Input and Output	• I/O Ports: 2 USB, 1 mini USB and 1 Ethernet port • Video out: Via VNC encoder: 1 or 2 axis quadrature • Digital inputs 2 input lines (5 V TTL) • Digital outputs 4 output lines (5 V TTL, 20 mA) for alarm or other external control • Power output 5 V • 350 mA current limited
Battery and Power Supply	• Battery type intelligent Li-ion • Number of batteries 1 • Battery life typical: 7 hours in UT mode, 6 hours in PA mode
Environmental Specifications	• IP rating: Designed to meet IP66, • Operating temperature -10° C to 45° C (14° F to 113° F) Storage temperature -25° C to 60° C (-13° F to 140° F)

Ultrasound

		Conventional UT/TOFD	Phased Array (PA)
General	Connectors	4 x Lemo 1 or BNC	IPEX
	Number of Focal Laws	n/a	128
	Configuration	2 Channel	16:16 or 16:64
	Test Mode	Pulse Echo, Transmit Receive and TOFD	Pulse Echo, Transmit/Receive
Pulsers	Pulse Voltage	-100 V to -450 V (in steps of 10 V)	-25 V to -75 V (in steps of 5 V)
	Pulse Width	Adjustable: Spike to 2000 ns (2.5 ns resolution)	Adjustable: Spike to 1000 ns (2.5 ns resolution)
	Pulse Shape	Negative square wave (with ActiveEdge)	
	Output impedance	5 Ω	<10 Ω
Receivers	Gain	100 dB (0.1 dB steps) Analogue gain	0 to 76 dB (0.1 dB steps) Analogue gain
	Input Impedance	1 kΩ (pitch and catch)	200 Ω
	System Bandwidth	200 kHz to 22 MHz (-3 dB)	200 kHz to 14 MHz
Data acquisition	Scan Type	A-Scan & TOFD	S-Scan or L-Scan
	Number of scans	Up to 2	1 (with up to 3 extracted A-Scans)
	Digitizing Frequency	50 MHz, 100 MHz, 200 MHz	65 MHz
	PRF	1 Hz to 1500 Hz	1 Hz to 5000 Hz
	Max A-Scan Length	8192 samples	4096 samples
Data processing	Focussing Type	n/a	Natural, constant depth, constant path, constant offset
	Rectifier	Full wave, positive, negative, none (RF)	
	Filtering	Analogue filters 4 (automatic or manual) Digital filters 10 (automatic or manual)	Analogue filters 3 (automatic) Digital filters 10 (automatic or manual)
Data visualisation	Cursor Types	Cartesian, hyperbolic (TOFD)	Cartesian, extraction box, angular
	Measurements	Path length, depth, surface distance, DAC, AWS, DGS	Path length, depth, surface distance, DAC, AWS
	Views	A, B, C scan, Merged & TOFD	A, B, C, L, S scan, Merged plus true top & end
	Number of layouts	18	35
TCG DAC	Number of points	16	16
	Maximum Slope	60 dB/µs	50 dB/µs
Alarms	Number of Alarms (LED)	2 (sync on all gates & DACs)	
	Measurements (A Scan)	Peak & flank (FSH, dB, depth, beam path length, surface distance), echo-to-echo, floating gates (reference from IFT)	
Software	Languages	English, German, French, Spanish, Russian, Chinese, Hungarian, Italian, Portuguese, Japanese, Slovak	
	Special features	IFT, .csv data output, analysis software	
	Report generation	Pdf with embedded pdf reader	

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Main Units

Instruments

792 10 000	Proceq Flaw Detector 100 (Lemo)
792 20 000	Proceq Flaw Detector 100 (BNC)

The units contain Conventional Ultrasonics (UT), interface triggering (IFT), twin axis encoding, antiglare screen protector, robust carry case with space for two smaller boxes for accessories, carry strap, USB stick and Proceq FD Viewer software

Software upgrades

792 50 001	Software Upgrade to TOFD
792 50 002	Software Upgrade to PA 16:16
792 50 003	Software Upgrade to TOFD and PA 16:64
793 50 007	Software Upgrade CSV output
792 50 008	Software Upgrade Proceq FD Link Software

Software upgrades after purchase of the main unit

792 50 004	Software Upgrade to TOFD (after purchase)
792 50 005	Software Upgrade to PA 16:16 (after purchase)
792 50 006	Software Upgrade to PA 16:64 (after purchase)

Accessories

792 30 011	Battery Pack
792 30 010	Battery Charger
792 30 022	Anti Glare Screenprotector

Measurement Accessories

Conventional weld inspection

792 91 200	PSLM1025 2.25 Single Crystal Transducer 3/4"
792 91 201	PSS 2.25 MHz 5/8" AWS Probe
792 91 202	SNW6245 45 Deg Snail Wedge
792 91 203	SNW6260 60 Deg Snail Wedge
792 91 204	SNW6270 70 Deg Snail Wedge
792 90 101	GE MWB 45-4 EN
792 90 102	GE MWB 60-4 EN
792 90 103	GE MWB 70-4 EN
792 90 104	GE MSEB 4-0° EN
792 31 050	Single Transducer Cable Lemo 1: Lemo 00 2 m
792 31 051	Twin Transducer Cable Lemo 1: Lemo 00 2 m

Phased Array inspection

792 91 157	X2PE5.0M16E0.6PIX250 PA Probe
792 91 158	X2-SB56-N45S Wedge
792 90 272	X3PE5.0M64E0.6PIX250 PA Probe
792 90 273	X3 SB57 N0L Wedge

Adaptors

792 90 652	Encoder Y Cable
792 90 751	IPEX to GE Phasor PA Probe Adaptor
792 90 653	Omniscan Encoder Adaptor

Service and Warranty Information

Proceq is committed to providing complete support for each testing instrument by means of our global service and support facilities. Furthermore, each instrument is backed by the standard Proceq 2-year warranty.

Standard warranty
- Electronic portion of the instrument: 24 months
- Mechanical portion of the instrument: 6 months
- Supporting accessories: 6 months

Extended warranty
When acquiring a new instrument, max. 3 additional warranty years including yearly calibration can be purchased for the electronic portion of the instrument. The additional warranty must be requested at time of purchase or within 90 days of purchase.