

FD700 Mini Flaw Detectors

Features

- Exceptional visibility in sunlight (AMOLED)
- colour VGA display (320x240 pixels)
- Sizing Toolkits: DAC, AWS, TCG, DGS
- Pulse Repetition Frequency: 8 to 333 Hz, adjustable
- Screen Refresh Rate: Adjustable 60 & 120 Hz
- Detection: Z-Cross, Flank & Peak
- Automatic: probe zero, probe recognition, and temperature compensation
- Measurement: Variety of modes to address a number of applications
- Large data storage with multiple formats: Alpha numeric grid and sequential with auto identifier
- Download to ElcoMaster® data management software



The hand-held FD700 flaw detector range combines state-of-the-art flaw detection with advanced material thickness capabilities.

The Elcometer FD700 Mini Flaw Detector is available in two models: FD700+ and FD700DL+.

Whether you are on-site or in the laboratory these gauges are the tool you need for all your flaw detecting needs.

The time corrected gain (TCG) feature automatically compensates for sound attenuation through a material, further increasing the performance of the gauge.

The FD700DL+ stores up to 8,000 readings with A/B-scan images in alpha numeric batches with full data logging via RS232 data output to ElcoMaster® data management software.

Tool kits include:

- TRIG enabling location of flaws in both surface distance and depth from the transducer.
- TCG (time corrected gain) increases gain as time increases, in order to achieve an overall level of sensitivity for the same flaw/reflector at different distances.
- DAC for the creation of DAC curves which are used to inform the operator of the size of any given flaw at any depth.
- AWS function provides automatic defect sizing in accordance with AWS D1.1 structural welding code.
- DGS/AVG allows automatic defect sizing from a single reference defect.

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Material Thickness Features

Model & Part Number	FD700+ & FD700DL+
Display Mode: Material thickness digits display B-Scan cross sectional display B-Scan with digits display Scan bar display Coating thickness display A-Scan display Flaw detection modes	<ul style="list-style-type: none"> • • • • • + Rectified, - Rectified, Full Waveform (RF) TRIG, DAC, AWS, TCG, Zero Crossing, Flank, Peak
Measurement Mode¹	PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT
Measurement Rate (Thickness Mode) Manual: Scan mode Scan bar display	4 readings per second 32 readings per second 6 readings per second
Measuring Range²	PE: 0.63 - 30480mm (0.025 - 1,200 inches) PETP: 0.63 - 30480mm (0.025 - 1,200 inches) EE: 1.27 - 102mm (0.050 - 4.000 inches) EEV: 1.27 - 25.4mm (0.050 - 1.000 inches) CT: 0.01 - 2.54mm (0.0005 - 0.100 inches) PECT: 0.63 - 30480mm (0.025 - 1,200 inches) PECT: 0.01 - 2.54mm (0.0005 - 0.100 inches)
Measurement Accuracy²	± 1% or ±0.1mm whichever is the greater
Measurement Resolution	0.01mm (0.001 inches)
Velocity Calibration Range	256 - 16,000m/s (0.0100 - 0.6300in/ms)
Additional Features: High speed scan mode Differential mode Limit alarm mode	<ul style="list-style-type: none"> • • •
B-Scan display speed	adjustable display speed
Calibration Setups	6 factory & 64 user-definable setups transferrable to and from a PC archive
Gates	3 fully adjustable gates: start, stop, width & threshold
Damping	adjustable; impedance matching for optimising transducer performance
Pulser Type	dual 200 volt square wave pulsers with adjustable pulse width (spike, thin, wide) and 50 volt cut/boost for greater penetration
Gain	manual, automatic gain control (AGC) with 110dB range with 0.2dB resolution
Timing	precision 25MHz TCXO with single shot 100MHz 8bit ultra low power 8 bit digitizer
Data Logging	<ul style="list-style-type: none"> • 8,000 with A/B-scan image & gauge settings • 210,000 - coating, material, min, max thickness • sequential and grid logging • Alpha numeric batch identification • OBSTRUCT indicates inaccessible locations
Calibration Options	single, two point, velocity & material type
Transducer Recognition	automatic
V-path / dual path error correction	automatic
Probe Zero	automatic

¹ PE: Pulse-Echo Mode, EE: Echo-Echo (ThruPaint™) Mode.

² Measuring range & accuracy depends on material, surface conditions and the transducer selected.

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Flaw Detection Features

Flaw Detection Mode Features	FD700+ & FD700DL+
Automatic Calibration:	Longitudinal (straight), or Shear (angle)
Probe Types:	Single Contact, Dual, Delay & Angle
Material Velocity Table:	Contains longitudinal and shear velocities for a variety of material types
TRIG	Trigonometric display of beam path, depth, surface distance, and curved surface correction. Used with angle beam transducers
DAC	Up to 8 points may be entered and used to digitally draw a DAC curve. Reference -2, -6, -10, (-6/-12), (-6/-14), (-2/-6/-10) dB. Amplitude displayed in %DAC, dB, or %FSH
AWS	Automatic defect sizing in accordance with AWS D1.1 structural welding code.
AVG/DGS	Automatic defect sizing using probe data. Stores up to 64 custom setups
TCG	Time corrected gain. 50 dB dynamic range, 20 dB per microsecond, up to 8 points for curve definition
Detection Modes	Zero Crossing, Flank and Peak
Display Freeze	Hold current waveform on screen
Peak Memory	Captures peak signal amplitude.
PRF	8 to 2000Hz in selectable steps (8, 16, 32, 66, 125, 250, 333, 1000, 2000Hz)
Pulse Width	40 to 400 ns. Selectable step options 40, 80 & 400 ns (labeled spike, thin & wide)
Frequency Bands	FD700+ & FD700DL+: Broadband 1.8 - 19 MHz (-3dB). FD700DL+: Three narrow bands at 2MHz, 5MHz, 10MHz
Horizontal Linearity	+/- 0.4% FSW
Vertical Linearity	+/- 1% FSH
Amplifier Linearity	+/- 1 dB
Amplitude Measurement	0 to 100% FSH, with 1% resolution
Delay	0 - 999in (25,375mm) at steel velocity
Display	1/4 VGA AMOLED colour display 57.6 x 43.2mm (2.27 x 1.78inches) viewable area
Display Refresh Rate	60 & 120Hz
Units (selectable)	mm or inches
Backlight	adjustable brightness
Repeatability / Stability Indicator	●
Battery Type	3 x AA alkaline
Battery Life (approximate)	12 hours
Low Battery Indicator	●
Battery Save Mode	auto
Operating Temperature	
Size (w x h x d)	63.5 x 165.0 x 31.5mm (2.5 x 6.5 x 1.24 inches)
Weight (including batteries)	397g (14oz)
Case Design	Aluminium case design with gasket sealed end caps, waterproof membrane keypad
Transducer Connector Type	LEMO
RS232 Interface	Bi-directional
Packing List	Elcometer NDT FD700+ or FD700DL+ gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries, ElcoMaster® software, transfer cable