

# CSM 900E

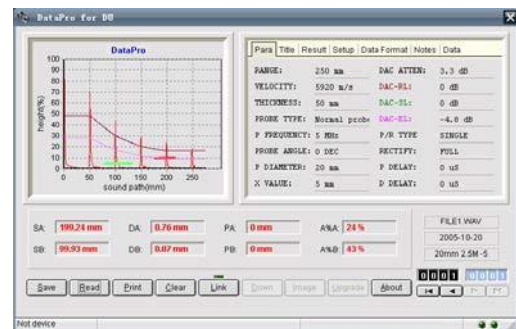
## Universal Ultrasonic Flaw Detector

### with LED Backlight High Bright Color Display



smooth response for immersion and critical weld testing. The quality, durability, dependability and ease of use remains on the CSM900E. From rugged field inspections to high resolution thin measurements, long acoustically clean materials, and immersion systems work, the CSM900E extends the range of applications that a portable instrument can perform.

Rugged CSM900E durability, 12 hours of battery use, easy keys operation, outstanding ultrasonic performance, and now “square wave pulser” and “color leg” combine to form a powerful portable ultrasonic inspection tool with powerful Lithium Ion battery pack.



The CSM900E combines the powerful advantages of digital design with the detailed dynamic echo information that was previously only possible with an analog display. The high resolution color LCD display, 150 Hz update rate, and “single shot” measurement technique produce a fast,

## Performance features

### Parameter Setups Files

Up to 512 files stored instrument parameter setups.

### A-Scan Files

Up to 512 files including operation parameters plus A-scan, the stored datasets can be easily previewed, recalled and exported to a computer for edit and printing.

### Thickness Files

Up to 10,000 thickness values stored in single thickness file.

<b>PC Communication</b>	Bi-directional RS232 or RS232-USB adaptor connected with PC.
<b>DAC/ TCG</b>	DAC or TCG with a maximum of 16 reference echoes, 4 other curves can be displayed with variable dB intervals. DAC curves can be varied with variable dB or variable range.
<b>AVG/DGS</b>	DGS curves can be displayed automatically, DGS curves can be varied with variable dB or variable range.
<b>Readings</b>	Up to selectable 26 readings (Sound path, projection distance, depth, echo height, and ERS.)
<b>B-Scan</b>	Selectable corrosion-featured B-scan and full-featured B-scan
<b>Square Wave Pulser</b>	Square wave pulsers allow optimum probe matching by adjusting pulse width and voltage. Difficult to penetrate metallic applications and especially non- metals inspection like composite materials are optimized. Pulse width is tunable up to 1000 ns in 10 ns steps. Pulser voltage is adjustable from 20 to 500 V in 10 V steps.
<b>Rectification</b>	Positive half-wave, negative half-wave, full-wave, RF
<b>Reject (suppression)</b>	0 to 90% linear
<b>Units</b>	Inch, millimeter, or microsecond selectable
<b>Languages</b>	Selectable English, Chinese
<b>Gate Monitors</b>	Two independent flaw gates controllable over entire sweep range
<b>Measurement Modes</b>	Zero-to-first, multi-echo with selectable flank or peak detection
<b>TTL Output</b>	Three independently assignable outputs, instantaneous, timed, latched with visual LED and audible horn alarms
<b>Alarm</b>	Selectable positive logic, negative logic, upper limit thickness or lower limit thickness alarm mode
<b>Curved surface correction</b>	Corrects sound path information when using an angle beam transducer to circumferentially inspect a curved surface for either tubular or bar inspections.
<b>Auto Calibration</b>	Measurement and setting of sound velocity and probe delay using two known calibration echoes (2-point calibration)
<b>Auto Gain</b>	Adjust automatically the system sensitivity to bring (increase or decrease) the measured echo to the suitable echo height. Echo height setting value from 10 % to 90 % of the screen height.
<b>Display Screen</b>	5.7 inch LED backlight TFT_LCD, display resolution 320 x 240 pixels, selectable 4 scheme colors and 8 A Scan colors.
<b>A-Scan Resolution</b>	Standard 200 x 220 pixels, or 100 x 220 pixels
<b>Display Update Rate</b>	150Hz

## Specifications

<b>Range</b>	1 to 10,000 mm at steel velocity, range selectable in fixed steps or continuously variable
<b>Material Velocity</b>	Continuously adjustable from 100 to 20,000 m/s, 33 selectable material velocities
<b>Display Delay</b>	-5 to 3400 $\mu$ s in steel (dependent on range)

<b>Probe Delay(Zero Offset)</b>	0 to 100 $\mu$ s
<b>Damping</b>	50, 75, 150, 500 ohms
<b>Gain</b>	0 to 110 dB adjustable in selectable steps 0.2, 0.5, 1, 2, 6, 12dB, user definable, and locked
<b>Pulse Repetition Frequency</b>	20 to 1K Hz
<b>Bandwidth</b>	0.2 to 20 MHz with 3 selectable broadbands
<b>A/D Sample Rate</b>	100MHz (Hardware Rate)
<b>Probe Connections</b>	BNC
<b>Power adapter</b>	9VDC, 110-220VAC
<b>Battery Power</b>	7.4V, 5200Ahr Lithium Ion Battery Pack
<b>Battery Life</b>	12 hours on Li-Ion Battery Pack
<b>Operating temperature</b>	-10 $\sim$ 60 $^{\circ}$ C
<b>Stored temperature</b>	-25 $\sim$ 70 $^{\circ}$ C
<b>Size</b>	230mm $\times$ 150mm $\times$ 45mm
<b>Weight</b>	1.0kg with Li-ion battery pack
<b>Horizontal Linearity Error</b>	$\leq$ 0.1%
<b>Vertical Linearity Error</b>	$\leq$ 3%
<b>Echoes Resolution</b>	$>$ 42dB
<b>Sensitivity Margin</b>	$>$ 65dB (200mm, $\Phi$ 2,flat bottom hole)
<b>Dynamic Range</b>	$>$ 36dB

## Standard Package

<b>Portable ultrasonic flaw detector</b>	1
<b>Straight-beam probe</b>	1
<b>Angle-beam probe</b>	1
<b>Probe cable</b>	2 ( Connected with straight-beam probe and angle-beam probe )
<b>AC adapter/charger</b>	1 ( Include AC power cable )
<b>PC software</b>	1 ( Include CD for DataPro software and RS232 serial PC cable )

## Recommended accessories

<b>RS232-USB adapter</b>	1 (Include CD for driver and USB cable)
<b>Battery Pack</b>	5200mAh Li-ion battery pack
<b>Calibration Block</b>	Supply according to customer requirements
<b>Probe</b>	Supply according to customer requirements