



## Sonic 1200S+ Flaw Detector

### FEATURES

- Lightweight, less than 4 lbs. (1.8 Kg)
- Single Li-Ion battery
- 8+ hour battery run time
- Variable repetition rate control
- 150/300 volt square wave pulser
- Dual flaw gates
- Peak Hold for angle beam inspection
- Angle Beam Trig Function for flaw location
- Angle beam curve correction
- Customer interchangeable displays:
  - Hi-Brite Electroluminescent
  - Monochrome Liquid Crystal
  - Color Liquid Crystal
- Thickness gauging: IP-1<sup>st</sup> or Echo to Echo
- Narrow band receiver tuning
- PowerLink™ Technology - automatic transducer recognition and instrument set-up
- VGA output
- Analog out option
- Windows-based FlawMaster™ Software

### ULTRASONIC FLAW DETECTOR

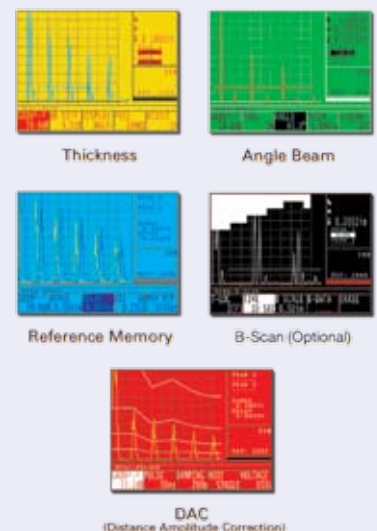
Weighing less than 4 lbs. (1.8 kg) with customer-interchangeable displays, the Sonic 1200S+ offers users outstanding ultrasonic resolution. The availability of a color LCD or monochrome LCD for indoor or bright outdoor conditions or a Hi-Brite Electroluminescent (EL) display for normal to dark conditions provides the ultimate in flexibility and convenience. Its rugged, well designed housing, uncomplicated front panel, SmartKnob™ and built in PowerLink™ technology, make it a truly revolutionary user-friendly hand held portable ultrasonic flaw detector.

The Sonic 1200S+ can operate on your choice of a single lithium ion battery or optional D-Cell battery pack. DAC, data logging, and numerous other options come standard on the Sonic 1200S+ with a storage limit of 5,000 measurements

and 100 A-scans. An RS-232 port provides bi-directional communication and print capability.

FlawMaster™ Windows-based software provides a user-friendly interface for communication between the Sonic 1200S+ and PCs. A-scans, instrument settings, thickness readings, and report contents are all available for review, archive, uploading, and downloading via a PC.

The High Resolution (HR) option was designed for applications requiring high resolution, such as thickness gauging of thin materials. Enhancements such as 15 MHz narrow band receiver setting and square wave pulser with width control to 15 ns and enhanced signal processing provide the HR option with the ability to measure down to 0.005 inches (0.127 mm) of steel.



# SONIC 1200S+ SPECIFICATIONS\*

## PULSER

**Type:** Square wave

**Pulse Width:** 30 to 1000 ns

**Pulse Voltage:** Selectable 300/150 volts

**Damping:** 25, 50, or 200 ohms

**Modes:** Selectable single (pulse echo), dual, or through transmission

## RECEIVER

**Frequency Band:** 0.3 to 20 MHz

**Tuning:** 1, 2.25, 5, 10, Wideband (0.3 - 20 MHz), Highpass (3 - 20 MHz)

**Gain Control:** 0 to 110 dB

**Control:** Continuous adjustment in selectable 0.1, 0.2, 0.5, 1.0, 2.0, 6.0, or 12 dB

**Linear Reject:** 0 to 80% full screen

**Modes:** RF, fullwave, half+, half-, fullwave filtered: 10, 5, and 2.25 MHz

## GATES

**Functions:** Dual flaw gates. Gate 1 time of flight, or amplitude detection, flaw alarm. Gate 2 amplitude detection, flaw alarm or time of flight for echo-to-echo mode.

**Indicator:** Flashing LEDs and horn

**Peak Amplitude:** Peak amplitude of gated signal in percent of screen height

**RF Gates:** Positive logic requires that a signal cycle of either polarity cross a gate level; negative logic requires that no signal cross a gate level.

## TIME BASE

**Range:** 0.048 to 296 inches (1.23 to 7511 mm) of steel (0.418 to 2560  $\mu$ s)

**Delay:** -1.16 to 185 inches (-29 to 4.694 mm) of steel (-10 to 1600  $\mu$ s)

**Velocity:** 0.025 to 0.600 in/ $\mu$ s (635 to 15240 m/s) Horiz. Linearity +/- 1% of full screen

**Pulse Rate:** Selectable maximum; 50 Hz steps, 50 to 3450 Hz, limited by range and pulser settings

## THICKNESS

**Range:** 0.005 inches (0.127 mm) up to the maximum display range setting

**Modes:** IP - Gate 1, IF to Gate 2, Gate 1 to Gate 2

**Trigger Modes:** Peak or edge

**Trig. Functions:** Angle beam calculations, curved surface correction

**Angle:** 0° - 90° in 0.1° increments

## DISPLAY FEATURES

**Signal:** Hollow or filled

**Screen Freeze:** On command, currently displayed signal is frozen.

**Waveform Recall:** Select and display stored waveform

**Peak Hold:** Displays peak amplitude with active signals under peak signal

**A-scan Storage:** Up to 100 A-scan waveforms may be stored for future playback or printout

**A-scan Security:** Read-only selection prevents accidental erasure of A-scans

**Update Rate:** 60 Hz

## ADDITIONAL FEATURES

**VGA Output**

**RS-232:** DB-9P connectors

**PowerLink™:** Automatic transducer recognition and application setups. Transducer identification on printouts

**Program Storage:** Up to 200 test setups (additional 100 setups with A-scan storage)

**Clock, Calendar:** Time and date information is stored and printed with each waveform.

**Languages:** Selectable - English, Spanish, French, and German

**Software:** Windows-based FlawMaster™

## GENERAL

**Dimensions:** 9.5" L x 5.5" W x 3.5" D (241 mm x 140 mm x 89 mm)

**Weight:** 3.8 lbs (1.7 kg)

**Display:** Customer-interchangeable QVGA (320 x 240 pixels) monochrome backlit liquid crystal display (LCD), color LCD or Hi-Brite EL display

**Operating Temperature:** -4° to 140° F (-20° to 60° C)

**Storage Temperature:** -40° to 176° F (-40° to 80° C)

## POWER

**DC:** One Li-Ion battery, optional external D-Cell battery pack

**AC:** 90 264 volt, 50-60 Hz mains

**Battery Operating Time:** 10+ hours

**Humidity:** Safe operation in exposure to Class 3 temperature/humidity environments (5 to 95%)

**Classification:** Based on Class 2 specifications from the MIL-PRF-28800F

**Altitude:** Maximum operating and non-operating altitude - 15,000 ft. (4600 m)

**Hazardous Area Operation:** Safe operation in explosive atmosphere as defined by Class I, Division 2, Group D, as found in the National Fire Association Code (NFPA 70), Section 500, and tested using MIL-STD-810E, Method 511.3, Procedure 1

## DAC

**Type:** Segmented, 25 selected points

**Gain:** 40 dB, total of gain and DAC limited to 110 dB maximum

**Display:** Multiple curves showing compensation: 1 curve at signal level (0 dB), 3 curves at +6 dB, 0 and -6 dB levels, 4 curves at +6 dB, 0, -6 dB and -14 dB levels, DAC compensated echoes only, 1 curve with DAC compensated echoes

**Reference Memory:** Recall waveform displayed simultaneously with active signal

**Data Logging:** Up to 5000 readings

## HIGH RESOLUTION (HR) OPTION

**Sonic 1200HR+:** Thickness measurementsto 0.005 inches (0.127 mm), thickness resolution to +/- 0.0002 inches (0.005 mm), accuracy to +/- 0.001 inches (0.0254 mm), 0.048 to 296 inch (1.22 mm to 7.5 m) screen range, 15 MHz narrow band amplifier, RF or video thickness gauging, variable rep rate control, square wave pulser control down to 15 ns

# OLYMPUS

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