

GE  
Sensing & Inspection Technologies

# Phasor XS™

Portable Phased Array  
Ultrasonic Flaw Detector

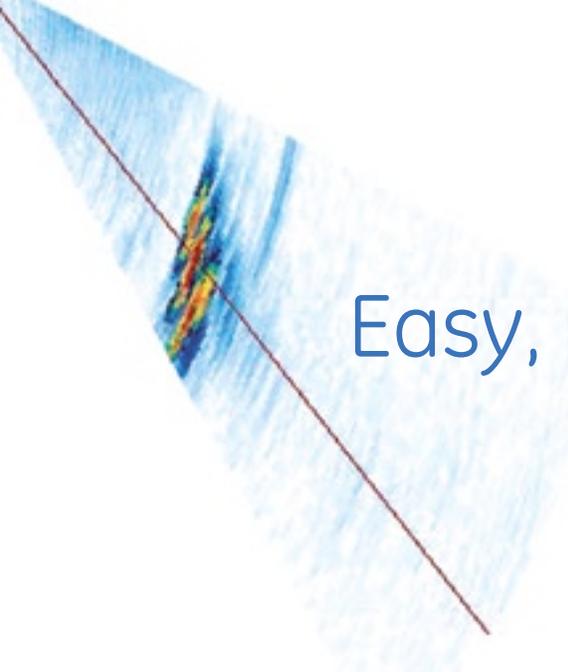


Combining the power of Phased Array with the comfort of conventional flaw detection at an accessible price.

The GE Phasor XS is your companion for improving everyday inspections.



imagination at work



# Easy, portable and affordable

When used in Phased Array mode, the operator simply programs the transducer for multiple angles and focal depths without changing probes or wedges. Sector Scan with precise beam control results in improved probability of detection (POD) and sizing. With one scan from one contact location, greater area is covered and comprehensive data can be viewed in real-time on a full-color sector display. Compared to conventional ultrasonic inspection, the productivity and cost savings of the Phasor XS make it an easy decision for the NDT professional.

Transitioning from conventional to Phased Array-based flaw detection is now easy. The Phasor XS weighs less than 4 kgs and has the same look, feel and rugged design as the popular USN 60.

In fact, the Phasor XS can be operated as a conventional flaw detector. Simple menu-driven operation of basic Phased Array controls puts the technology within reach of the Level II field inspector. Data is easily captured and interpreted. The cost of training is minimized.

## Sector Scan Capability

Sector Scan capability in the Phased Array mode significantly improves probability of detection while gaining productivity by scanning a larger volume in a single scan. Phasor XS supports up to 64 element physical probes and is capable firing up to 16 elements for beam forming. The easy to use on-board delay law calculator makes it simple and fast to program the transducer.

## Advanced Measurement Tools

Phasor XS supports a full complement of measurement tools. Two sets of cursors allow for signal sizing and true depth measurement while horizontal location measurement is also possible. User-friendly color schemes make measurement simple and quick.

## User-friendly Interface

The Phasor XS features a 6.5" VGA display with a best-in-class 60 Hz data refresh rate and a choice of selectable screen options that allow optimum viewing even in the most difficult field conditions. Several options are available including unique views such as Video Reverse which allows users to align the sector view with the probe. Selectable A-Scans can also be viewed along with the Sector Scan.





## Rapid Reporting

JPEG images, sector scans or other views can be stored with a single key press as part of the unique Freeze Mode and downloaded in image-ready format to an SD TM solid-state memory card for fast documentation or report generation.

## Multiple Phased Array Transducer Options

GE Sensing & Inspection Technologies manufactures a wide variety of Phased Array transducers that are applicable to Phasor XS. Phased Array transducers with Dialog feature recognize physical connection and automatically download transducer information to Phasor XS.



A catalog of both conventional and Phased Array transducers is available at: [www.gesensinginspection.com](http://www.gesensinginspection.com)

## Feature Summary

- Ultra-portable Phased Array at less than 3.8 kgs (8.2 lbs)
- Industry standard code-compliant flaw detector
- Electronically controlled and selectable beam angles, focus and size
- Simultaneous inspection with multiple beams from a single location
- Simple operation allows for easy transition from conventional UT to Phased Array inspection
- Field-proven rugged packaging to withstand heavy on-site use
- Full-color, real-time sector display with selectable A-Scan
- Full-screen display and snap-shot image storage of sector images, A-Scans, B-Scans, measurement and on-screen set-up parameters
- JPEG image reporting and data-set transfer via SD memory card
- On-board delay law calculator
- Push-button control for ease-of-use and operation within a sealed bag for anti-contamination

Product code	Frequency MHz	Elements							Cable Length	
		Count	Aperture		Elevation		Pitch		m	ft
			mm <sup>2</sup>	inch <sup>2</sup>	mm	inch	mm	inch		
L8U84	2	8	8 x 9	.31 x .35	9	.35	1	.039	2	6.5
L8U96	4	16	8 x 9	.31 x .35	9	.35	0.5	.020	2	6.5
EUN75	5	32	16 x 10	.63 x .39	10	.39	0.5	.020	2	6.5
L99HK	5	16	16 x 10	.63 x .39	10	.39	1	.039	2	6.5
L99KO	2.25	16	16 x 13	.63 x .51	13	.51	1	.039	2	6.5
L99LQ	2.25	16	24 x 19	.94 x .75	19	.75	1.5	.059	2	6.5
L99JM	5	64	64 x 10	2.5 x .39	10	.39	1	.039	2	6.5

List of standard transducers as of product launch.

# Technical Specifications

Physical Specifications	
Internal Memory	Set-up files
Removable Memory	On 512 MB SD Card for report and set-up files
Documentation Format	JPEG ~80 KB/image
Weight	3.8 kg (8.2 lbs) with battery
Dimensions	282 mm W x 171 mm H x 159 mm D (11.1 in. W x 6.8 in. H x 6.3 in. D)
Battery	Custom Li Ion battery pack - 356P configuration
Battery Life	6 hrs minimum
Battery Charging	External charger
External Power Supply	Universal input 85 to 260 V AC / 50 to 60 Hz
Probe Connectors	Conventional - 00 lemo/BNC adapters provided - Phased Array - Custom ZIF
VGA Output	Yes
Dialog Languages	Chinese, English, French, German, Italian, Japanese, and Spanish
Display Size	165 mm (6.5 in.) diagonal
Display Resolution	VGA color TFT 640H x 480V pixel

Conventional / Phased Array Channel Specifications		
	Conventional	Phased Array
Pulser	Spike	Bi-Polar Square Wave
Pulse Repetition Frequency	15 to 2000 Hz	15 to 7680 Hz
Pulser Voltage	300 V max	± 25 V to ± 75 V (1 V steps)
Pulser Energy	Low or High (selectable)	
Pulser Rise Time	< 15 nsec	< 15 nsec
Damping	50 or 1000 Ohms (selectable)	
Mode of operation	single, dual	single
Receiver Input Capacitance	< 50 pF	
Receiver Input Resistance	1000 Ohms in dual mode	220 Ohms
Maximum Input Voltage	40 V peak-to-peak	200 mV peak-to-peak
Bandwidth/Amplifier Bandpass	0.3 to 15 MHz @ -3dB	0.6 to 6.5 MHz @ -3dB
Filter Selection	1.0, 2.0, 2.25, 4.0, 5.0, 10 and 13 MHz + BB	2.0, 3.0, 4.0, 5.0 MHz, Low Pass 4 MHz, High Pass 5 MHz and Broadband (0.6 to 6.5 MHz)
Rectification	Pos HW, Neg HW, FW, and RF	Pos HW, Neg HW, FW and RF
Analog Gain	0 to 110 dB	0 to 40 dB
Digital Gain		15.8 to 39.9 dB (depending on aper- ture size)
Focal Laws		User selectable - 128 max
Physical Probe		1 to 64
Virtual Probe		1 to 16
Number of Cycles		1 to 128
Pulser Width @ 1/2 Cycle		20 to 500 nsec
Pulser Delay		0 to 10,24 μ-sec
Receiver Delay		0 to 10,24 μ-sec
Acoustic Velocity	1000 to 16000 m/s 0.0393 to 0.5905 in./μ-sec	1000 to 16000 m/s 0.0393 to 0.5905 in./μ-sec
Minimum Range (steel long)	0 - 14 mm (0.55 inch)	0 - 7.6 mm (0.3 inch)
(steel shear)	0 - 7.5 mm (0.3 inch)	0 - 4.2 mm (0.17 inch)
Maximum Range (steel long)	0 - 14060 mm (553 inch)	0 - 1073 mm (42 inch)
(steel shear)	0 - 7626 mm (300 inch)	0 - 1073 mm (42 inch)
Display Delay	2.5 m (98.5 inch)	1 m (39.4 inch)
Auto Timebase Calibration	Yes	
Reject	0 to 80%	0 to 80%
TCG	15 points @ 6 dB/μ-sec	15 points @ 6 dB/μ-sec
Gates	A and B	A, B and IF
Gate Threshold	5 to 95%	5 to 95%
Gate Start	0 mm - full range	0 mm - full range
Gate Width	1 mm - full range	1 mm - full range
Gate Logic	Off, Positive, and Negative (Off, Coincidence, and Anticoincidence)	Off, Positive, and Negative (Off, Coincidence, and Anticoincidence)
TOF Modes	Flank/Peak	Flank/Peak
Scan Type		Linear and Sector
Available Views	A-Scan	A-Scan, B-Scan and Sector
Displayed Readings	Amplitude, Sound Path, and Trig	Beam, Amplitude, Sound Path, Trig for displayed and for all beams
Measurement Resolution	5 nsec	5 nsec
Displayed Units of Measurements	mm or inch (selectable)	mm or inch (selectable)

Environmental Tests	
Per Mil-Std-810F	
Cold Storage	-20°C for 72 hrs, 502.4 Procedure I
Cold Operation	0°C for 16 hrs, 502.4 Procedure II
Heat Storage	+70°C for 48 hrs, 501.4 Procedure I
Heat Operation	+50°C for 16 hrs, 501.4 Procedure II
Damp Heat / Humidity (storage)	10 Cycles: 10 hrs at +65°C down to +30°C, 10 hrs at +30°C up to +65°C, transitions within 2 hrs, 507.4
Temperature Shock	3 Cycles: 4 hrs at -20°C up to +70°C, 4 hrs at +70°C, transitions within 5 mins. 503.4 Procedure II
Vibration	514.5-5 Procedure I, Annex C, Figure 6, general exposure: 1 hr each axis
Shock	6 cycles each axis, 15g, 11ms half sine, 516.5 Procedure I
Loose Cargo	514.5 Procedure II
Transit Drop (packaged for shipment)	516.5 Procedure IV, 26 drops
IP54 / IEC529 ... dust proof / dripping water proof as per IEC 529 specifications for IP54 classification	

Specifications subject to change without notice.



[www.gesensinginspection.com](http://www.gesensinginspection.com)

GEIT-20047EN (11/09)