

GE

Inspection Technologies

GE Phasor XS Portable Phased Array Ultrasonic

The GE Phasor XS brings the proven advantages of Phased Array technology to a new – and accessible – level. This portable and rugged device combines the value of Phased Array with a code-compliant conventional UT flaw detector. It is simple to use, easy to learn and specially designed with practical, relevant features.

When used in Phased Array mode, the operator can electronically control multiple beams from one probe. The precise beam control including angle, focus and size, 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. When compared to conventional Ultrasonic inspection, the productivity and cost savings from the Phasor XS are easily measured.



GE imagination at work



Productivity gains

When the inspection requires a different angle with conventional ultrasonic testing, the operator must change his probe and re-visualize the integration of the new information. A different time base and sensitivity level is represented. Although this is not a problem for the skilled operator, it takes time. Through the power of Phasor XS, these inefficiencies are drastically minimized.

Real time color imaging from the Phasor XS supplies an integrated cross-sectional visualization of the part originating from multiple angles. A single A-Scan can also be selected for display in combination with the image. With a single probe, you can achieve more than ever before – and in less time!

Overall, the Phasor XS provides:

- Improved area coverage, faster results
- More information from one scan of the part
- Better recorded result from the generation of an image
- One probe replicates the capabilities of many conventional UT probes and wedges
- Time and cost savings from reduced hours evaluating indications with multiple angles

Measurable time savings!

Some weld inspections require a complete scan with three separate angles. Using the Phasor XS can result in a time savings of two thirds!

Test quality improvements

Defect orientation is a prediction made in the development of a test procedure and an inspection angle is chosen based on this prediction. Beam spread is chosen purposely broad to account for some level of error in the prediction, so essentially it is a compromise.

With the Phasor XS, electronic control of the beam allows test procedures to be developed that will yield higher Probability of Detection (POD), in the same inspection time, by allowing the choice of an ideal beam over the full inspection area. The quality of the scan is improved and the Phasor XS' full-color, real time sector display with selectable A-Scan supplies the standard accepted method for instant and reliable sizing.

Simple change over

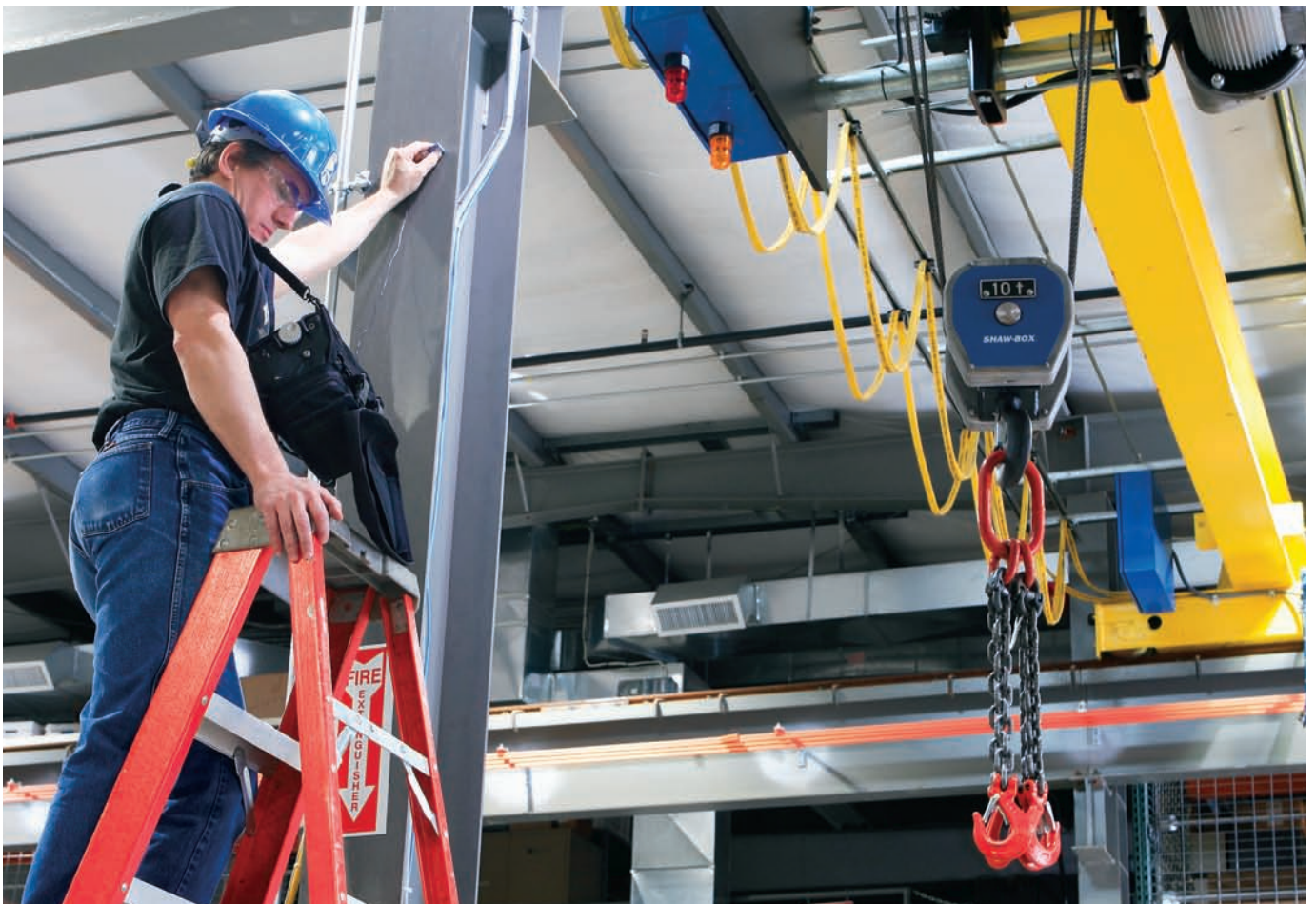
Building Phased Array capabilities into a successful proven operating platform ensures the transition to Phased Array inspection will be cost effective. Phasor XS' simple menu driven operation of basic Phased Array controls puts the technology within reach of the Level II field inspector. Data is easily interpreted and the cost of training is minimal.

Standard Features

An on board data set memory is combined with removable storage via an SD card for documentation and setup storage. This ensures your operators will be working with consistent setups to get brilliant results that you can see later on the screen or computer.

The unique Sector Freeze mode allows review and storage of all the A-Scans behind the image. Select your beam of interest from all of the shots for separate display and improve your sizing with focal and angle control.

- Combined Phased Array and code compliant Conventional UT flaw detector
- Truly portable Phased Array – less than 4 kg (7 lbs)
- Electronically controlled and selectable beam angles, focus and size
- Simultaneous inspection with multiple beams from a single location
- Full color, real time sector display with a selectable ASCAN
- Fullscreen Bscan plus Display reverse and flip
- Rugged packaging to withstand heavy onsite use
- Snap shot image storage of sector images and ASCANS
- Dialog probes 16/64
- Delay law calculator
- Push button control for operation in a bag
- Simple operating scheme
- Image transfer via SD card



Technical Specifications

Display Size Resolution	6.5" VGA (640*480 pixel) color TFT, 60Hz refresh rate
Battery Type	Custom Li-Ion battery pack (3S6P configuration)
Battery Life	4 hours minimum
Battery Charging	External charger that connects directly to the battery pack
External Power Supply	Universal input (85 – 265V / 50 – 60 Hz)
Units of Measure	inch and mm
SD Card Memory	Sealed compartment

	Conventional Channel	Phased Array Channels
Number of Cycles Focal laws	1	128 (max)
Pulse repetition Frequency	15 to 2000Hz	15 to 7680Hz
Pulser Type	Spike	Bipolar Squarewave
Pulser Voltage	300V (max)	+/-25V to +/-75V
Pulser Energy	Low, High	n/a
Pulser Rise Time	<15ns	Not Specified
Damping	50, 500 and 1000	n/a
Dual Mode	Off and On	n/a
Receiver Input Capacitance	<50pF	
Maximum Input Voltage	40Vp-p	
Bandwidth/ Amplifier bandpass	0.3 to 15MHz(-3dB points)	0.5 to 10MHz
Direct Documentation format	JPEG	JPEG
Probe Connections	00 Lemo/ BNC Adaptor Supplied	Custom Supplied
Physical Probe	n/a	1 to 64
Virtual Probe	n/a	1 to 16
Number of Cycles	1	1 to 128
Pulser Width (1/2 cycle)	n/a	40 to 500ns
Pulser Delay	n/a	0 to 10,24us
Receiver Delay	n/a	0 to 10,24us
Receiver Input Resistance	1000ohm (dual mode)	220ohm
Analog Gain	0 to 110.0dB	0 to 40.0dB
Digital Gain	n/a	0 to 50.0dB
Frequency Select	2.25MHz, 5MHz, LP and HP	2.25MHz, 5MHz, LP and HP
Rectification	PosHW, NegHW and Fullwave	PosHW, NegHW and Fullwave
Measurement Resolution	5nsec	5nsec
Displayed Readings	A%A, A%B, SA/, SA^, SB/, SB^	A%A, A%B, SA/, SA^, SB/, SB^
VGA output	Yes	Yes
SD Card Memory	Yes	Yes
RS 232 interface	Yes	Yes
Auto Timebase Calibration	Yes	No
Reject	0 to 80%	0 to 80%
TCG	16 points (max) - 6dB/usec	16 pints (max) - 6dB/usec
Sound Velocity	.0393 - .5905"/us(1000 - 15000m/s)	.0393 - .5905"/us(1000 - 15000m/s)
Range	5m @ steel shear velocity	1m @ steel shear velocity
Weight	7.5lbs (with batteries)	7.5lbs (with batteries)
Size	11.1"W x 6.75"H x 6.25"D (282 x 171 x 159mm)	11.1"W x 6.75"H x 6.25"D (282 x 171 x 159mm)
Display Delay	2.5m @ steel shear velocity	1m @ steel shear velocity
Gates	A, B	A, B, JF
Gate Threshold	5% to 95%	5% to 95%
Gate Start	[0.1mm to 2m]	0.1mm to 1m
Gate Width	[0.1mm to 2m]	0.1mm to 1m
Gate Modes	Off, Pos, Neg[Off, Coincidence, Anticoincidence]	
TOF Modes	Flank, Peak	Flank, Peak
Scan type	n/a	Linear or Sector
Data visualization refresh rate	60Hz	60Hz
Available views	Ascan	Ascan only, Image only, Ascan + Image
Dialog Languages	English, Spanish, German, French, Chinese, Japanese	English, Spanish, German, French, Chinese, Japanese

Environmental Tests	
	Per Mil-Std-810F
Cold Storage	-20C for 72 hrs, 502.4 Procedure I
Cold Operation	0C for 16 hrs, 502.4 Procedure II
Heat Storage	+70C for 48 hrs, 501.4 Procedure I
Heat Operation	+55C for 16 hrs, 501.4 Procedure II
Damp Heat / Humidity (storage)	10 Cycles: 10hrs at +65C down to +30C, 10 hrs at +30C up to +65C, Transition within 2 hrs, 507.4
Temperature Shock	3 Cycles: 4 hrs at -20C up to +70C, 4 hrs at +70C, Transitions within 5 minutes, 503.4 Procedure II
Vibration	514.5-5 Procedure I, Annex C, Figure 6, General exposure: 1hr 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.

Environmental Sealing Tests	
IP54 / IEC529 ... Dust Proof / dripping water proof as per IEC 529 specifications for IP54 classification	
Environmental	
op temp	
Low battery indication	
Amplitude variation expected over battery life	
Graticule	
Architectural suppression	
Linearity on timebase	
Pulser, Voltage p to p, rise time, duration, fall time, Reverberation amplitude, frequency spectrum plot	
Amplifier and attenuator	

GE Inspection Technologies. The evolution of NDT.

When it comes to technology-driven, non-destructive testing (NDT) solutions, GE Inspection Technologies has been setting the global standard. Our ultrasonic products epitomize our expertise in pioneering and developing proven technologies that offer real, tangible benefits for industries from aerospace to automotive.

