



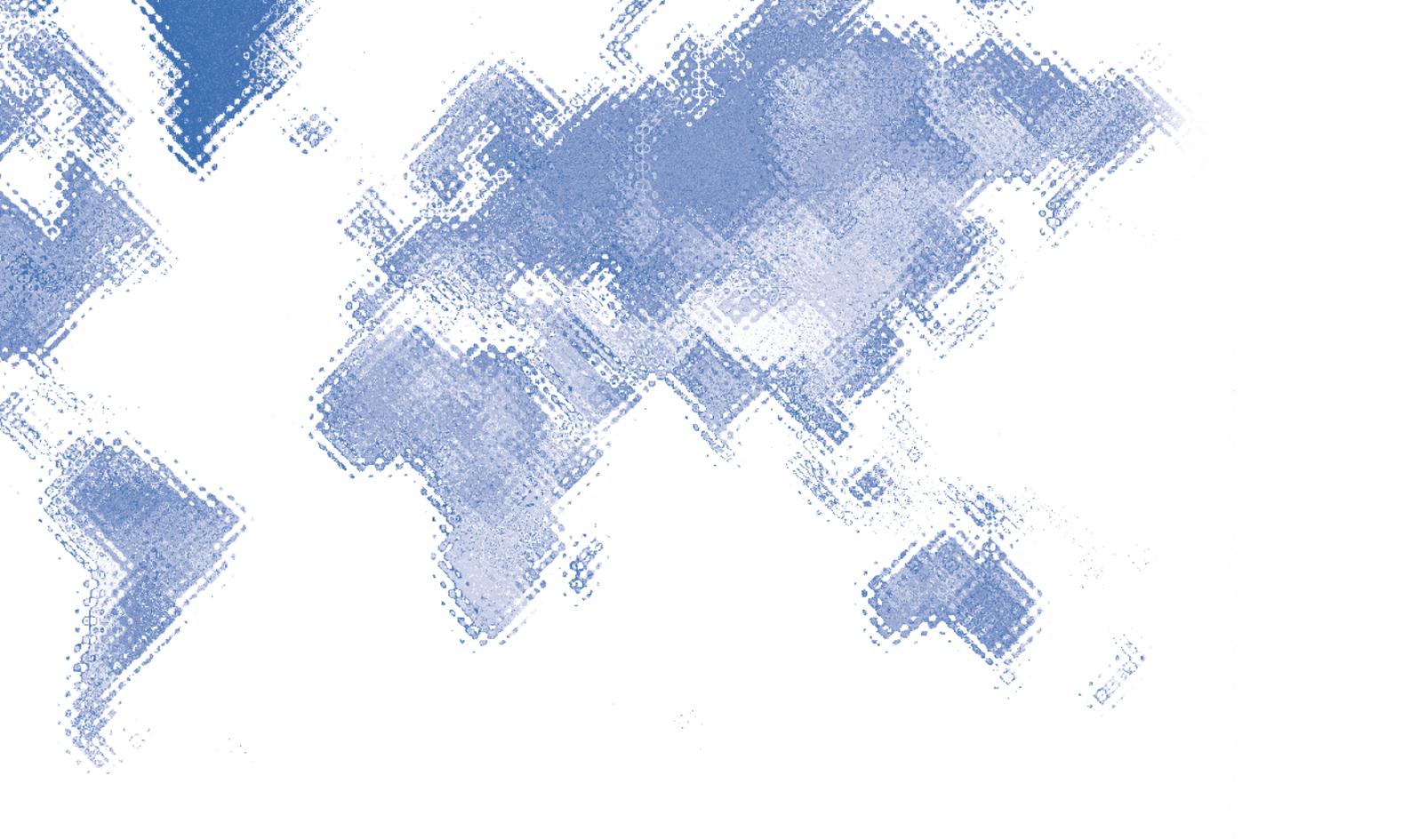
Phasor XS™

Portable Phased Array
Ultrasonic Flaw Detector



GE imagination at work

A global leader in
technology-driven
inspection solutions
that deliver productivity,
quality and safety to
our customers



Industry Focus with Broad Experience

No matter what your inspection or testing challenge is, we can help.

At GE Inspection Technologies, we are proud to continue the long legacy of leadership and innovation that we inherit as a member of the GE family of companies. Founded by Thomas Edison in 1878 as the Edison Electric Co., GE is known around the world for its excellence, innovation and imagination. Its rich heritage includes the development of non-destructive testing (NDT) and inspection technologies.

Our focus at GE Inspection Technologies covers a broad range of industries and applications. So, whether it's simple or highly complex, we are the world's proven, reliable resource for NDT. We are setting best practices today and are constantly exploring the next generation of NDT solutions, all in an effort to keep our customers at the front edge of quality, safety and inspection productivity.

Phased Array ultrasonic inspection made easy, portable and affordable

The Phasor XS brings the proven advantages of Phased Array imaging to a new - and accessible - level. This portable and rugged device combines the productivity advantages of Phased Array with a code-compliant conventional ultrasonic flaw detector. Combined with GE Phased Array transducers, the Phasor XS can solve your most demanding inspection applications in less time at an affordable price.

The Phasor XS weighs less than 4 kg and has the same look, feel and rugged design as the popular USN 60. Simple menu-driven operation of basic Phased Array controls puts the technology within reach of the Level II field inspector. Data is easily captured, interpreted and archived. The cost of training is minimized.

Feature Summary

- Ultra-portable, battery-powered Phased Array at less than 3.8 kilograms (8.4 lbs)
- Industry standard code-compliant ultrasonic 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 image displays true depth of indications, combined with selectable A-Scan
- High visibility 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

Improve Inspection Productivity

Operator-controllable electronic inspection angles and active area eliminates the need for multiple angle transducers & inspections – significantly decreasing test time.



Critical Inspection Capabilities



Improved Probability of Detection (POD)

When used in Phased Array mode, the Sector Scan capability of the Phasor XS significantly improves probability of detection while gaining productivity by scanning a larger volume in a single scan. The operator simply programs the transducer for multiple angles and focal depths without changing transducers or wedges. With one scan from one contact location, greater area is covered and comprehensive data can be viewed in real-time on the full-color display. Phasor XS supports up to 64 element physical transducers and is capable of 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

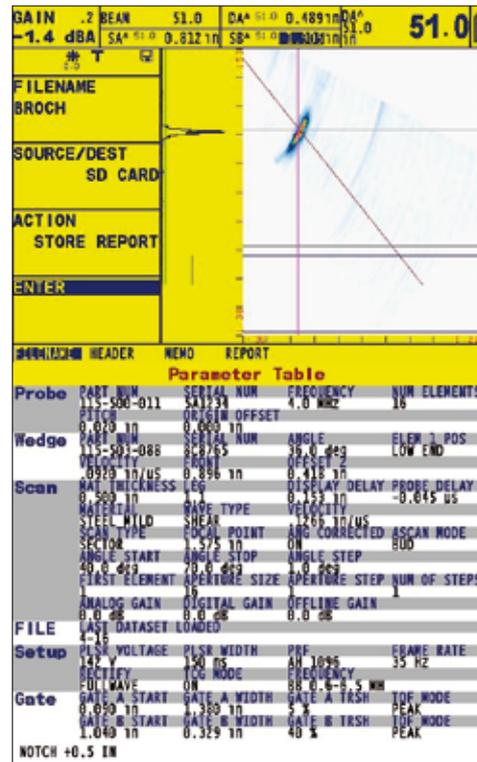
Phasor XS supports a full complement of measurement tools. Two sets of cursors allow for signal sizing and true depth measurement while horizontal location measurement is also possible. User-friendly color schemes make measurement simple and quick.

User-friendly Interface

The Phasor XS features a 16.5 cm (6.5") diagonal 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 transducer. Selectable A-Scans can also be viewed along with the Sector Scan.

Rapid Reporting

JPEG images of 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™ solid-state memory card for fast documentation, e-mailing and report generation.



Bright, high-contrast images are easier to view and interpret. Test parameter data is saved and stored with the image file.

General inspection applications

- Welds
- Forgings
- Castings
- Plates
- Bars
- Tubular goods
- Bridges, rail and structures
- Large-area scanning

Explore new inspection territory
with Phasor XS.



A Phased Array UT solution that's always on site and on target

Inspections in the Oil & Gas and Petroleum industries seldom take place in convenient locations. The field inspector is often up on scaffolding or at a remote location next to pipelines or offshore installations. The Phasor XS is a truly portable Phased Array product from GE Inspection Technologies that will improve probability of defect detection in the most demanding of conditions. Better decisions come from benchmarked improvements in detecting and sizing defects, and the simplicity of the Phasor XS puts this advanced capability within the reach of the everyday operator.

Greater productivity

Most weld inspection operations require 3 different angles to comply with industry standards. The controllable beam in the Phasor XS allows the angle focus and active area to be varied electronically without the need to connect and reconnect transducers. This makes most weld inspections with the Phasor XS significantly faster than with conventional flaw detectors.

Flexible operation

With a single click, the Phasor XS changes from Phased Array mode into a code-compliant conventional detection mode. There is no lost time and the operator can use traditional UT transducers, giving maximum flexibility.

Typical oil & gas inspection applications

- Piping
- Tanks
- Welds
- Girth welds
- Nozzles and flanges
- Heavy-wall pressure vessels

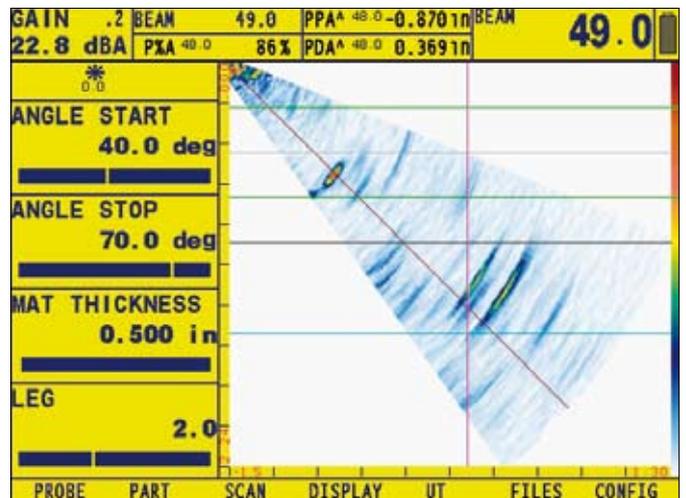


Phasor XS is light-weight and easy to transport from jobsite to jobsite.

Advanced applications

The Phasor XS has a powerful 150 volt peak-to-peak square-wave pulser and is capable of using a wide variety of advanced Phased Array transducers. As a result, the Phasor XS can tackle complex applications such as flange corrosion and heavy wall flaw detection that, until now, could only be effectively performed by expensive and complicated Phased Array instruments.

A Phasor XS image is worth a thousand A-Scans. The integrated cross-sectional image makes it easier to determine the size and orientation of detected flaws.



Phasor's imaging capability is ideal for flange ID corrosion/crack detection and sizing.

Phasor XS, a new power
in UT flaw testing.

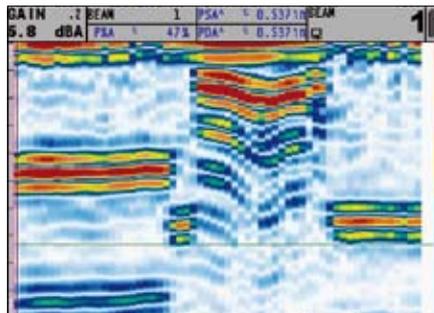


The portable Phased Array that decreases downtime

The Phasor XS, GE Inspection Technologies' first portable Phased Array UT detector, is so compact and light-weight that in addition to letting your inspectors work faster, it also gives them easy access to areas that have previously been off-limits. Once on site, the angle focus and active area of the array's controlled beam allow it to cover a larger area and eliminate the need to connect and reconnect transducers to achieve a full inspection.

Higher POD (Probability of Detection) rates than conventional flaw detectors

The Phasor XS allows new test procedures with far higher POD rates. With the Phasor XS you get a full-color, real-time sector display with selectable A-Scan for



Laminar defects in metallic or composite materials are easily viewed in the Phased-Array mode.

Typical electric power inspection applications

- Welds
- Pressure vessels
- Piping
- Turbine blades
- Rotors
- Composites

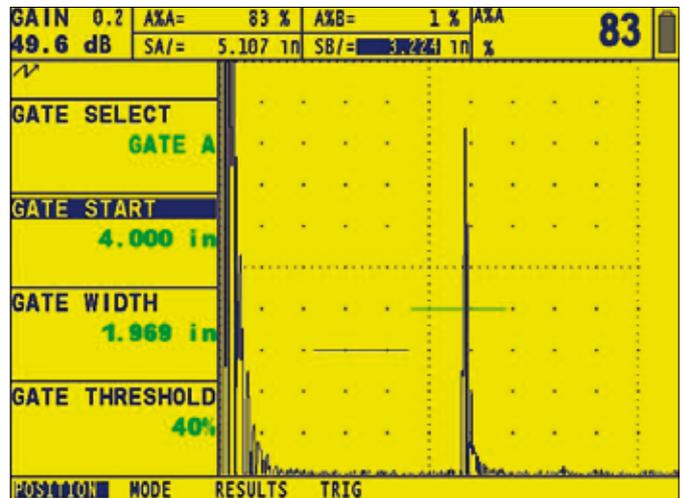


The portable, rugged and battery-operated Phasor XS is designed to be used in the most demanding circumstances including bagging for nuclear anti-contamination.

instant and accurate evaluation. In an industry where every second of downtime is crucial, the speed and accuracy of the Phasor XS is an invaluable asset.

Light-weight, compact and truly portable

The Phasor XS is no larger than a conventional UT flaw detector and, at just 3.8 kilograms (8.4 lbs), it is very easy to handle. Accessing and testing awkward or hazardous areas can be carried out with the improved speed and efficiency.



Bright, large, high-contrast A-Scans are one button push away from the sector scan view.

Aerospace

Phasor XS gives your
inspection teams wings.

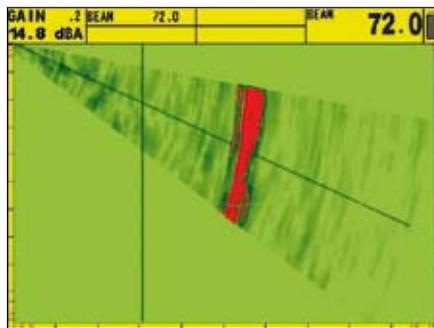


A quick and flexible Phased Array solution that's very reliable

The Phasor XS offers the aerospace industry a compact, portable and effective Phased Array UT solution. We've leveraged GE's expertise as a major player in the aerospace industry to deliver our first portable Phased Array product. This allows advanced inspections to be carried out in the field with greater speed and accuracy than ever before.

Easy interpretation means rapid decisions

For inspection procedures which typically require three scans, Phased Array imaging from the multiple beams of the Phasor XS provide integrated cross-sectional visualization which is very easy to interpret. Its full-color, real-time sector display has a selectable A-Scan which allows accurate



Scribe line cracking is easier to locate and quantify with Phasor XS.



On-wing, wide-area scanning with arrays ensure complete inspection coverage of aluminum and composite structures.



The Phasor XS allows your inspector to work faster and produce more reliable results.

evaluation on the spot, giving you the kind of performance previously available only from a more costly and complicated computer platform.

Portable Phased Array - a practical solution

Because the Phasor XS weighs a mere 3.8 kilograms (8.4 lbs), it is not only an extremely convenient and flexible tool, it is also ideally suited to the aerospace industry where weight and portability are crucial issues in on-wing inspections. In addition, the Phasor XS is a combined detector which means you get both Phased Array and a code-compliant conventional detector in one lightweight package.

Typical aerospace inspection applications

- Scribe line
- Welds
- Landing gear
- Composite structures (delamination and disbond)

Transportation

Phasor XS will help drive
your inspection costs down.



Portable Phased Array helps you to maintain your inspection timetable

With the relentless and often conflicting quest for both higher quality and lower costs, fast and accurate testing is essential. Flaw inspection in the railway and automotive industries has many facets. That's why the Phasor XS, GE Inspection Technologies' first truly portable Phased Array UT flaw detector was designed to be an extremely versatile and flexible tool. Its light weight makes it ideal for remote locations and its full-color real-time sector display has a selectable A-Scan for instant and accurate evaluation.

Easy operation with less training

Although the Phasor XS is an entry-level Phased Array inspection solution, it does not lack sophistication. It is built on a successful and familiar operating platform. This, as well as its menu-driven operation, means that its advanced technology is easily accessible to trained inspectors. The full-color display of its ultrasonic data makes interpretation of the scan result simpler, quicker and more accurate.



Specially designed transducers allow wheel inspections to be carried out faster, still providing more reliable results.

Long battery life for operation in remote locations

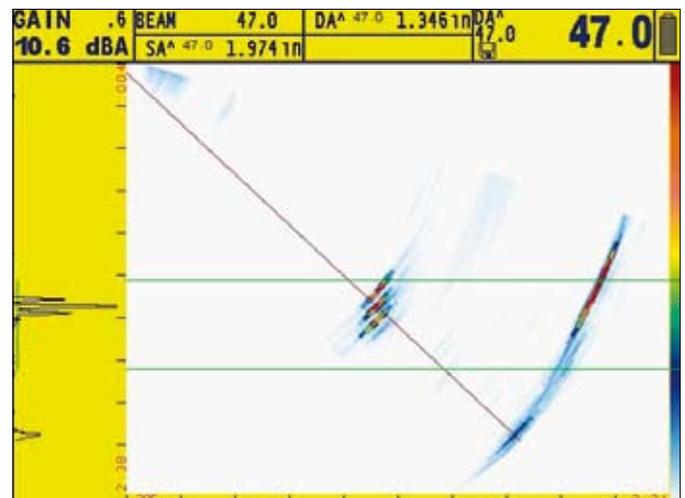
Bridge, rail or wheel flaw inspection is often in areas far from mains electricity supply. The Phasor XS has a long 6-hour battery life which allows inspectors to do a full day's work on one charge. And because of its rapid inspection speed, each day can be a very productive one.

Support of standards and internal specifications

The Phasor XS can switch to conventional UT quickly so that inspectors can use any standard transducer, to evaluate detected flaws (locating and sizing) to any specified standard or test instruction.

Typical transportation inspection applications

- Rails
- Welds
- Spot welds
- Axles
- Shafts
- Spindles
- Brake discs
- Joints



Sector scan view, along with A-Scan signals, show exceptional spatial resolution of closely-spaced defects.

GE Phasor XS Phased Array Transducers, Wedges & Delay Lines



GE 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.ge.com/phasorxs

Small and mid-sized Phased Arrays for both angle- and straight- beam applications:

- Replaceable wedges for angle-beam or delay lines for straight-beam inspections
- Typical Applications: **Oil & Gas** - Pipeline girth welds, tanks, general weld inspection
 - Electric Power** - General weld inspection, pressure vessels and piping, turbine blades, rotors
 - Aerospace** - Weld inspection, landing gear, scribe line
 - Transportation** - Axles, shafts, spindles, brake discs, wheels, spot welds
 - General** - Welds, forgings, castings, tubular goods, bridges and structures

Small and mid-sized Phased Array Transducers								
Product Code	Aperture mm (")	Freq. (MHz)	Element Count	Pitch mm (")	Elevation mm (")	Cable Length m (')	Shear Wave Wedge 30° to 70°	Straight Beam Delay Line 20 mm (0.79")
115-500-012	8x9 (0.31x0.35)	2	8	1.0 (0.04)	9 (0.35)	2 (6.5)	118-350-024	118-350-036
115-500-013	8x9 (0.31x0.35)	4	16	0.5 (0.02)	9 (0.35)	2 (6.5)	118-350-024	118-350-036
115-500-014	16x10 (0.63x0.39)	5	32	0.5 (0.02)	10 (0.39)	2 (6.5)	118-350-025	118-350-037
115-500-015	16x10 (0.63x0.39)	5	16	1.0 (0.04)	10 (0.39)	2 (6.5)	118-350-025	118-350-037
115-500-017	16x13 (0.63x0.51)	2.25	16	1.0 (0.04)	13 (0.51)	2 (6.5)	118-350-027	118-350-039
115-500-018	24x19 (0.94x0.75)	2.25	16	1.5 (0.06)	19 (0.75)	2 (6.5)	118-350-028	118-350-040

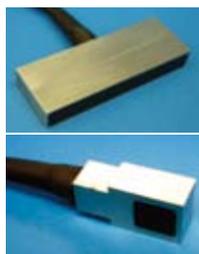
Phased Array for scanning and wide-area coverage; immersion or delay line:

- Typical Applications: **Oil & Gas** - Piping, tanks
 - Electric Power** - Pressure vessels, piping
 - Aerospace** - Weld inspection, landing gear
 - Transportation** - Composite delamination or disbond, plates
 - General** - Large-area scanning, plate, bar, tubular goods, in-line thickness measurement

Wide-area Phased Array Transducers								
Product Code	Aperture mm (")	Freq. (MHz)	Element Count	Pitch mm (")	Elevation mm (")	Cable Length m (')	Shear Wave Wedge 30° to 70°	Straight Beam Delay Line 20 mm (0.79")
115-500-016	64x10 (2.5x0.39)	5	64	1.0 (0.04)	10 (0.39)	2 (6.5)	118-350-026	118-350-038
115-000-406	81x8 (3.2x0.32)	5	64	1.3 (0.05)	8 (0.32)	2 (6.5)	None	Internal Delay 11.4 mm (0.45")

Custom Phased Array transducers and accessories:

If you cannot find what you need in our standard product line, we will quote custom transducers designed specifically for your application. Our global Application Centers have years of experience designing and delivering a wide range of Phased Array transducers and wedges for hundreds of applications.



Custom Phased Array Transducers			
Freq. (MHz)	Element Count	Pitch - mm (")	Elevation - mm (")
1.0	16, 32, 64, 128	1 to 3 (0.04 to 0.12)	10 to 25 (0.39 to 0.98)
1.5	16, 32, 64, 128	0.8 to 3 (0.03 to 0.12)	10 to 25 (0.39 to 0.98)
2.25	16, 32, 64, 128	0.5 to 2 (0.02 to 0.08)	6 to 20 (0.24 to 0.79)
3.5	16, 32, 64, 128	0.5 to 2 (0.02 to 0.08)	6 to 20 (0.24 to 0.79)
5.0	16, 32, 64, 128	0.3 to 1.5 (0.01 to 0.06)	6 to 20 (0.24 to 0.79)
7.5	16, 32, 64, 128	0.3 to 1 (0.01 to 0.04)	6 to 16 (0.24 to 0.63)
10.0	16, 32, 64, 128	0.3 to 1 (0.01 to 0.04)	6 to 13 (0.24 to 0.51)



Application Centers

Help and advice available all around the world

We have 11 Application Centers strategically sited around the world which provide our customers with personalized problem solving and custom transducer designs for the toughest applications. We offer advice and assistance to many different industry segments.

- Highly skilled, experienced and dedicated team
- Covering a wide range of NDT disciplines
- Solving inspection application problems quickly
- Providing industry-specific expertise for unique problems
- Designing and manufacturing custom-made transducers for most applications

Product Services

Maximizing uptime and maintaining optimum performance

We provide our customers with a full range of product support which covers practically any eventuality from simple repair to training and software updates. A world-class standard of service and our financial stability means that you can count on us to be there when needed.

- Field service, repair and calibration
- Parts fulfilment services
- Training programs
- Technical phone support
- Remote monitoring and diagnostics
- Software and hardware upgrades
- Rental, lease and finance solutions



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www.ge.com/phasorxs



GE Inspection Technologies: productivity through inspection solutions

GE Inspection Technologies provides technology-driven inspection solutions that deliver productivity, quality and safety. We design, manufacture and service Ultrasonic, Remote Visual, Radiographic and Eddy Current equipment and systems. Offering specialized solutions that will help you improve productivity in your applications in the Aerospace, Power Generation, Oil & Gas, Automotive or Metals Industries.

Visit www.ge.com/inspectiontechnologies for more information.