The Leader in Eddy Current Testing Performance

GridStation® 8200 with Modular Probe Electronics

Oil & Gas, Petrochemical  Aerospace & Defense

Nondestructive Testing (NDT), In-Line Inspection (ILI) and Structural Health Monitoring (SHM)

Developer of the Revolutionary MWM®-Array Eddy Current Technology
JENTEK’S INNOVATIVE PRODUCTS

Eddy Current Testing (ET) Instruments
Supports MWM®, MWM®-Array Sensors and IDED® Sensors

The GridStation® 8200 (GS-8200) is a lightweight (~10 lbs), extremely high-quality impedance instrument, running JENTEK’s novel GridStation® Software on a Microsoft Windows™ operating system. The GS-8200 is currently offered in configurable 19- and 39-channel parallel architecture versions.

Sensors and Probe Electronics
Inductive/Eddy Current Testing (MWM & MWM-Array) and Capacitive (IDEDs)

The first priority in design of JENTEK’s quasistatic sensors is the predictability of the sensor response using physics-based, rapid models. This predictable response is essential to enable use of Grid, Lattice and HyperLattice® databases for defect detection and material condition assessment.

GridStation® Software
Measurement Grid, Lattice & HyperLattice® Databases (for Multivariate Inverse Methods)

GridStation® Software uses Measurement Grid, Lattice as well as Hyperlattice databases to convert impedance measurements into electrical properties and layer thicknesses, generating images used to detect defects and assess condition. Grid, Lattice and Hyperlattice databases have 2, 3 and 4 or higher dimensions, respectively, and are precomputed using physics-based models of the sensor and multilayered material under test.

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1 The historical meaning of the MWM acronym is Meandering Winding Magnetometer; however MWMs and MWM-Arrays no longer use meandering drives. IDED still stands for Interdigitated Electrode Dielectrometer, and IDEDs still use interdigitated constructs.
Corrosion Imaging (Scanning)

Capabilities:
- Corrosion imaging (internal and external wall loss) through coatings and thick insulation
- Fast throughput, portability, minimal scanner complexity, extremely reproducible results
- Digital data, inherent self-diagnostics, automated decision support and reporting

Applications: Pipelines (internal and external), aircraft, composite/metal joints, pressure vessels, and power plants.

Corrosion Imaging for Pipelines and Pressure Vessels

PIG-IT™
In-Line Inspection tool being developed by JENTEK

External Wall Loss

Wall thickness image
Pitting corrosion imaging

Discrimination between first and second layer corrosion, gaps between layers and near surface corrosion
Crack Detection (Scanning)

Capabilities: Surface and buried cracks, cracks under coatings, crack sizing, cracks at edges.
Applications: Aircraft engines, structures, and landing gear; land-based turbines; bolt holes; and pipeline/tubing.

Engine Component Inspection with Low False Indication Rates

Inspection of Bolt Holes with and without Installed Bushings

Stress Corrosion Crack Imaging in Pipelines with and without Coating Removal

Pipeline Crack Detection at Mechanical Damage Sites and “Magnetic Profilometry”
Embedded Sensor Networks for Corrosion & Fatigue

Capabilities: Surface-mounted and embedded fatigue & corrosion sensors, for surface and buried damage. Applications: Aircraft, rotorcraft, pipelines, refineries, bridges, other high-value assets.

Linear Arrays (Surface Mounted and Embedded Between Layers)

MWM-Rosettes for Surface and Buried Crack Detection at Bolt Holes

Integrated Sensors for Corrosion & Fatigue
Quality Assessment

Capabilities: Cold work quality assessment (burnishing, shot peening, LPB, LSP); Rapid wide area nondestructive testing (NDT) inspection; coating characterization; other process quality assessment (welding, case depth, heat treatment, etc.). Applications: Production, repair/rework, in-service aging/degradation.

Cold Work Quality Assessment (burnishing, shot peening, LPB, LSP)

Composite Quality Assessment using Linear Drive MWM-Arrays

Reinforced Carbon-Carbon Composite (RCC) Space Shuttle Leading edge

Impact damage for composite aircraft skins

Composite Overwrapped Pressure Vessel (COPV) NDT for impact damage

Coating Characterization

(for complex components such as turbine blades, pipelines, and gun barrels)

Current Condition Assessment and Remaining Life Prediction Using the Component Adaptive Life Management (CALM™) Software
About JENTEK Sensors, Inc.

JENTEK Sensors, Inc. was founded in 1992 to address the need for enhanced life management of high-value assets (pipelines, refineries, aircraft, rotorcraft, spacecraft, ships, power plants) and for quality assessment and control of high value-added processes (coating, welding, heat treatment, shot peening).

JENTEK’s GridStation® products, together with our MWM®-Array eddy-current sensors are now U.S. military and commercial OEM standard practice for inspection of engine and other critical components. This includes FAA approval for the technical aspects of a recent commercial engine application and successful implementations for demanding applications such as the Space Shuttle leading edge composite and military aircraft engine disk slots. Our patented technologies and products offer unique, cost-effective solutions to address critical and challenging customer needs.

JENTEK is a growing commercial enterprise with competitive and proven products. We have delivered numerous fully-integrated systems and solutions to the aerospace, defense, energy, manufacturing, and consumer products industries.

Customers who have purchased our systems include Fortune 500 companies, the U.S. Air Force, Navy, Army, NASA and FAA, as well as first-tier prime contractors, and international systems integrators. Our customers’ use of these systems has generated savings of hundreds of millions of dollars. We continue to provide practical solutions to difficult problems that could not be addressed adequately by conventional eddy current testing (ET) methods. Now, we also offer superior solutions to common applications such as bolt-hole inspection, at competitive prices.

JENTEK is introducing an In-Line Inspection (ILI) product line in 2015. These ILI tools will support internal corrosion imaging, crack detection, and stress mapping with a tool that is similar in size to a cleaning pig. For many applications, inspections can be performed without a reduction in the production flow rate and do not require extensive cleaning of the pipeline. Since the deployment overhead is reduced, the new ILI tools can be run more frequently, similar to a standard cleaning pig.

JENTEK’s products – comprised of our leading edge sensor technologies, our breakthrough GridStation decision support software and our high-performance parallel architecture instrumentation – are portable and user-friendly. Our focus is on solutions that deliver substantial near-term cost savings, significant long-term return on investment, readiness/yield enhancement, and functional performance improvements.

JENTEK is built around a core of dedicated engineers, many of whom earned Ph.D.s from the Massachusetts Institute of Technology’s Laboratory for Electromagnetics and Electronic Systems (LEES). Our team brings together cutting edge engineering practice and scientific understanding (that we call Engineering-Science) and a passion for solving real world problems to create the unique JENTEK line of products. But our efforts don’t end with outstanding products. Instead, we work with each customer to make sure the JENTEK solutions meet their needs. The result is innovative, practical, cost-effective solutions, each one backed by dedicated individuals and a growing organization committed to customer success.

Our products and approach have been recognized with high-profile awards. JENTEK received the Navy’s Outstanding Phase III Transition Award after successful delivery of several high Return-on-Investment solutions to U.S. Navy Depots, the FAA/Air Transport Association “Better Way” Award for engine component inspection technology and the National Tibbetts Award in recognition of outstanding contributions to the Small Business Innovation and Research program. We also received the ASNT “Best Paper Award” for our innovative surface mounted/embedded fatigue sensors.

We look forward to solving your most challenging – as well as your every day – NDT problems with solutions that not only save you and your customers money, but also improve the reliability, yield and readiness of your products/processes and fleets.

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JENTEK solutions offer high Return on Investment (ROI) to owners and operators of high-value assets and high value-added processes.

JENTEK GridStation® advanced eddy-current inspection systems have been called “the gold standard” of inspections at U.S. Navy Depots.

For more information, please visit us at www.jentek sensors.com

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JENTEK issued patents include U.S. Patent #s: 8,928,316, 8,803,515, 8,768,657, 8,494,810, 8,237,433, 8,222,897, 8,050,883, 7,994,781, 7,876,094, 7,812,601, 7,696,748, 7,589,526, 5,533,575, 7,526,646, 7,518,360, 7,467,057, 7,451,657, 7,451,639, 7,411,390, 7,385,392, 7,348,771, 7,289,913, 7,280,940, 7,230,421, 7,188,532, 7,183,764, 7,161,351, 7,161,350, 7,106,055, 7,095,224, 7,049,811, 7,022,982, 6,992,482, 6,952,095, 6,798,198, 6,784,662, 6,781,387, 6,727,691, 6,657,429, 6,496,673, 6,433,542, 6,420,867, 6,380,747, 6,377,039, 6,351,120, 6,198,279, 6,188,218, 6,144,206, 5,966,011, 5,793,206, 5,629,621, 5,990,677 and RE39,206 (other patents pending).