

S2G2-800
series

Redefining
Excellence in
Surface Eddy
Current Array
Inspection



Through innovation,
we surpass standard expectations





Capable of
functioning in the
most demanding
environments.



The S2G2-800 is the most recent multi-technology Eddy Current instrument of its generation.

The S2G2 combines a variety of technologies together. The Sky is the limit. Use the S2G2-800 built-in capacities by combining any of the following testing technologies to meet your specific needs:

- Eddy Current Testing (ECT)
- Eddy Current Array (ECA)
- Remote-Field Testing (RFT)
- Remote-Field Array (RFA)
- Near-Field Testing (NFT)
- Near-Field Array (NFA)
- Magnetic Flux Leakage (MFL)

Portability and Autonomy

The S2G2 instrument weighs approximately 4.75 kg (10.5 lbs) with a volume of 10L (688 in³), making it one of the most compact Eddy Current Testing instrument on the market. It is easy to carry and very sturdy.

Other Benefits Include:

- Built-in Versatility
- Superior Signal/Noise Ratio
- Intuitive Motor Controller
- Array Technology



A Probe Interface Module

The standard configuration includes an industry-standard 41-pin Amphenol connector, however, this module can be tailored to include additional connectors, such as a motor controller connector.



B Motor Controller

Used to control and drive a range of motorized rotating devices for tube inspection.

Probe Connector

C An industry standard 41-pin Amphenol connector is used for all probe types including all Eddy Current Array (ECA) surface probes and for tube inspection techniques (Array, ECT, RFT, MFL, FLT and NFT) via a simple 41-pin to 19-pin adaptor or 41-pin to 4-pin adaptor. The S2G2 does not require an expensive 160-pin connector for array technologies.

D I/O Connector to Connect

- 39-pin Amphenol connector
- Several I/O to drive automatic sequencing
- Encoder signals
- 4 real-time Alarms Inputs

E DC Connector

The S2G2 can be operated using either an external mains power 24 VDC power supply/adaptor, or for additional portability an external 24 VDC battery pack can be used.

F Power On/Off

G Ethernet Connection 



Compatible Probes and Accessories

Embedded MUX

SG NDT uses an embedded multiplexer located in the probe to cable connection, which improves performance by locating the multiplexer close to the eddy current coils and also reduces the cost of the array probe. The SG NDT design concept allows for quick and easy replacement of the flexible PCB sensor array, while using the same cable/multiplexer.



Cushioned Array Probe for Surface Inspection

The SG NDT Cushioned probe uses flexible printed PCB technology and is designed to provide additional support for flat surfaces or large-radius inspections. The probe is housed in a body that serves as an ergonomic handle and mechanical encoders can be quickly and easily attached to it.



Flexible Shape Array Probe for Surface Inspection

Fully flexible Shape Array probes enable the operator to easily conform the probe to almost any shape or geometry either by hand or by employing a custom-shaped probe holder.

Flexible probes are ideal for evaluating array capabilities and when inspecting many differing geometries is required.



Customized Rigid Array Probe for Surface Inspection

To improve durability and reduce the costs of repeat inspections, custom-made rigid eddy current array probes can be manufactured for specific geometries.



Internal Bobbin Probes for Tube Inspection

The S2G2-800 also supports a range of tube inspection probes to enable inspection techniques including ECT/ECA, RTF/RFA, NFT/NFA and MFL.





EMMA Software Interface

The heart of all SG NDT inspection instruments is our own EMMA software, having been developed through many years of continuous research and development to support the most demanding of electromagnetic inspection applications.

EMMA is a powerful and intuitive software designed for use across the entire range of SG NDT electronics and supporting several electromagnetic methods, including:

- Eddy Current / Eddy Current Array
- RFT / RFT Array
- NFT / NFT Array
- MFL / MFL Array
- EMMA is your new inspection partner for Eddy Current and Eddy Current Array non-destructive inspections.

LabVIEW Software DevelopmentKit:

The LabVIEW SDK enables users to quickly and easily interface with any S2G2 device.



API Documentation:

SG NDT can provide all necessary information required to interface with the device, to program the device and acquire signals through a TCPIP link.





S2G2 Series - 800 Specifications



General Specifications

Power Requirements	110V-220VAC, 50-60Hz (Auto voltage sensing)
Operating Voltage	24 Volts DC Power
Size (external dimensions)	33cm x 26cm x 14cm (13" x 10.2" x 5.5")
Weight	4.75 Kg (10.5lb)
Environmental	Sealed enclosure, designed for IP55
Computer Interface	Gigabit Ethernet-1000 BASE-T CE, RoHS
Compliance Standards Operating	
Temperature Inputs/Outputs	0°C to 50°C (32°F to 122°F)
	<ul style="list-style-type: none">• RJ45 Ethernet• 39-pin Amphenol I/O Connector• 41-pin Amphenol - Extended ECT Connector• 8-pin Amphenol Motor Controller Connector• 24VDC 3-pin Amphenol Power Input
Encoders	2 quadrature encoder inputs
Remote Controls	<ul style="list-style-type: none">• Start/Stop• Balance• Status
Alarms	4 independent real-time alarms



Eddy Current (ECT) / Eddy Current Array (ECA) Specifications

Frequency Range	20Hz to 2MHz
Generators / Probe Drivers	2 fully independent
Drive Voltage	0-20 Vpp (single driver)
Output Current	1 A max
Reference Generators Probe Inputs	2 generators for electronic balancing 8
Number of EC channels	<ul style="list-style-type: none"> • 128 ECA channels • 256 ECA channels (upgradeable) <ul style="list-style-type: none"> • 512 ECA channels (upgradeable)
Number of frequencies	Up to 5 simultaneous
Data Resolution	32 bits
Data Rate	100,000 data points/s/ input
Connector	41-Pin Amphenol Probe Connector

Additional Inspection Methods Supported

Remote Field (RFT) and Near Field (NFT)	Via 41-pin connector and adaptor
Magnetic Flux Leakage (MFL)	<ul style="list-style-type: none"> • Via 41-pin connector and adaptor <i>Probe types:</i> <ul style="list-style-type: none"> • Inductive • Hall effect • Giant Magnetic Restrictive (GMR)
RFT Array(RFA) and NFT Array(NFA)	Via 41-pin connector
MFL Array	Via 41-pin connector

Motor Controller Drive

Voltage	0-24 V
Maximum Continuous Power	10 A
Maximum Peak Output Current	2 A
Continuous Max. Output Current	1 A