

S2G2-WS-CT
series

Bridging the Gap Between Power and Affordability



Through innovation,
we surpass standard expectations

(SG) NDT
AN EKOSCAN COMPANY



A Portable High-Quality Electromagnetic Tube Inspection Instrument.



In search of an affordable, no-nonsense, and high-quality electromagnetic tube inspection instrument? The SG NDT S2G2-WS-CT is an excellent choice. It offers an economic alternative for conventional tube inspection requirements, while also retaining the ability to upgrade to array capabilities when you need them. The S2G2-WS-CT is easy to use and adjust to your specific needs, with improved functionalities and an industry leading signal-to-noise ratio for the cleanest tube inspection data on the market.

Key Advantages

Several advantages can be found in the S2G2-WS-CT which is a low cost, conventional only inspection instrument. The S2G2-WS-CT does not support array technologies, however, it can quickly and easily be upgraded to give this additional capability when it's required.



- Battery operated
- Easy-to-use, hot-swappable batteries
- Industry standard connectors for tube inspection
- RJ-45 Ethernet connection OR Wi-Fi protocol connection to PC or tablet
- Lightweight and compact 4.75kg (10.5lbs)



A**RFT/NFT/MFL Probe Connector**

- 19-pin industry-standard Amphenol connector
- Used for conventional methods only, not array

S2G2-WS-CT
series**B****Extended ECT Probe Connector:**

- 41-pin industry-standard Amphenol connector
- Used for conventional methods (Via adaptor) and tube inspection methods
- May be used for various bespoke probes or probes with additional capability requirements

C**Eddy Current Probe Connector**

- 4-pin industry-standard Amphenol connector
- Used for conventional ECT methods only, not array

D**Power On/Off**

- Illuminated push button

E**I/O Connector**

- 18-pin Amphenol connector
- Several I/O configurations to drive automatic sequencing

F**Ethernet Connector**

- RJ-45 industry-standard connector
- Used for connecting instrument to PC
- Instrument can also be connected wirelessly using the Wi-Fi protocol

G**External Power Connector**

- 12VDC-2-pin Amphenol Power Input





Compatible Probes and Accessories

Eddy Current Test (ECT)

These probes are commonly used for inspecting non-ferrous heat exchanger tubes made of materials such as austenitic stainless steel, brass, Inconel™, titanium, and copper. These probes are particularly effective in detecting and analysing defects such as erosion, baffle cuts, pitting, and cracking. Additionally, they are sensitive to defects that may be present under support plates in shell-and-tube heat exchangers.



Magnetic Flux Leakage (MFL)

Probes utilize a permanent magnet to magnetize the tube wall, which enables magnetic sensors to detect the leakage field. These probes are specifically designed for inspecting the aluminium-finned carbon steel tubes on fin-fan coolers. They can accurately and reliably detect internal and external defects, such as corrosion, erosion, pitting, and circumferential cracking.



Remote Field Testing (RFT)

These probes are commonly used to inspect ferrous heat exchanger tubes made of materials such as carbon steel. They are especially effective in detecting common defects such as corrosion, erosion, wear, and pitting.



SPEN Weld Inspection

These probes employ a tangential coil arrangement enabling dynamic lift-off technology. These probes are ideal for inspections where access is limited, or where arrays are not suitable.



Near Field Testing (NFT)

NFT probes are commonly utilized to inspect ferrous heat exchangers that have external cooling fins. The Near Field is limited to the thickness of the tube wall, making them perfect for identifying defects in the inner diameter as they eliminate interference from the fins.





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

Try the S2G2-WS-CT Plus EMMA with a ruggedized tablet PC for ultimate portability.





**Built to
Work in Any
Environment.**





S2G2 series - WS-CT Specifications

General Specifications

Power Requirements	110V–220VAC, 50–60Hz (Auto voltage sensing) OR Lithium-Ion Battery DoT compliant (RRC2054-2) – 10Hrs typical run time
Operating Voltage	12 VDC Power
Environmental	Sealed enclosure, designed for IP55
Size (external dimensions)	33cm x 26cm x 14cm (13" x 10.2" x 5.5")
Weight (excl.batteries)	4.75 Kg (10.5lb)
Weight (incl.batteries)	5.75Kg (12.7lb)
Computer Interface	Gigabit Ethernet–1000 BASE-T OR Wi-Fi protocol
Compliance Standards	CE, RoHS
Operating Temperature	0°C to 50°C (32°F to 122°F)
Inputs/Outputs	<ul style="list-style-type: none">• RJ45 Ethernet• 18-pin I/O Connector• 41-pin Amphenol<ul style="list-style-type: none">– Extended ECT Connector• 19-pin Amphenol Connector (RFT/NFT/MFL)• 4-pin Amphenol Connector (ECT)• 12VDC –2-pin Amphenol Power Input
Encoders	2 quadrature encoder inputs
Remote Controls	<ul style="list-style-type: none">• Start/Stop• Balance• Status
Alarms	2 independent real-time alarms

Eddy Current

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	2 generators for Electronic balancing
Probe Inputs	8
Number of frequencies	Up to 5 simultaneous
Data Resolution	32 bits
Data rate	100,000 data points/s/ input
Connector	41-Pin Amphenol Connector OR 4-pin Amphenol connector

Additional Inspection Methods

Remote Field (RFT) and Near Field (NFT)	Via 19-pin connector
Magnetic Flux Leakage (MFL)	Via 19-pin connector (may require an adaptor) Probe types: <ul style="list-style-type: none">• Inductive• Hall effect• Giant Magnetic Restrictive (GMR)



**Are you interested
in S2G2-WS-CT?**

**Our team are ready
to answer your
questions.**

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