

# $\mu$ S2G2-series

**For Compact,  
Lightweight and  
Powerful Eddy  
Current Array  
Inspections**



**Through innovation,  
we surpass standard expectations**

**(SG) NDT**  
AN EKOSCAN COMPANY





**Easy to  
Use in the  
Tightest of  
Spaces.**



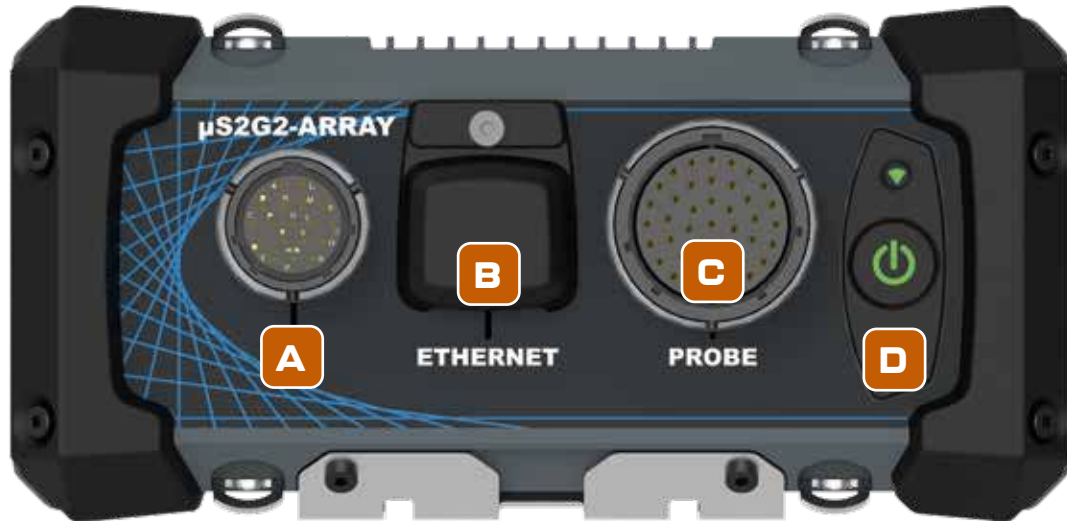
**The microS2G2** represents refined design principles, simplicity and superior technical capability, all wrapped up in a rugged, attractive case. "Everything you need, nothing you don't."

The  $\mu$ S2G2 is a user-friendly instrument that has been designed specifically with portability and ease of use firmly in mind. It comes with only the essential connectors required for quick and efficient ECA inspections, yet it boasts an impressive 128-channel capacity and can function for up to 8 hours on battery power. Furthermore, the instrument and PC can be connected to the probe using only one cable, thanks to the Wi-Fi protocol connection. Connect the  $\mu$ S2G2 to a rugged tablet PC for the ultimate in portable ECA inspection, with no compromise on capability.

## Key Advantages

- Battery operated  
(8 hours typical worktime)
- Easy-to-use,  
hot-swappable batteries
- RJ-45 Ethernet connection OR  
Wi-Fi protocol connection to PC or  
Tablet





## **A** I/O Connector

- 18-pin Amphenol connector
- Several I/O configurations to drive automatic sequencing
- 2 real-time alarms

## **B** Ethernet Connector

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

## **C** Probe Connector

Standard 41-pin Amphenol connector is used for all Eddy Current and Eddy Current Array (ECA) surface probes and can be used for tube inspection techniques (ECT/ECA) via a simple 41-pin to 4-pin adaptor.

## **D** Power On/Off

- Illuminated push button



# Compatible Probes and Accessories

## Flexible Shape Probes

These probes are some of the most versatile ECA probes available today. They allow the user to conform a single probe to a variety of shapes in a way that was previously impossible. The probes come in various sizes, topologies, and shapes. They can be supplied with a flexible rubber backing for ultimate durability, or without the rubber backing for situations where increased physical flexibility is crucial.



## Cushion Probes

These probes are designed with flexible Printed Circuit Boards (PCBs), similar to the SHAPE probes. However, they are enclosed in a rigid casing, making them more manageable and allowing easy attachment of mechanical digital encoders. Although the Cushion Probes offer less physical flexibility than SHAPE probes, they provide better repeatability of scans and are easier to handle.



## Gear Tooth Probes

These probes are highly specialized probes that are designed and manufactured to match the unique geometry of the gears being inspected. They are ideal for detecting defects such as cracking, pitting, corrosion, etc. in a quick and reliable single pass scan. Typically, these probes are rigid to withstand harsh environments. These gear tooth probes can replace time-consuming penetrant or magnetic particle inspections that are often used for gear inspection.



## Wave Weld Inspection Probes

These probes are designed to provide exceptional inspection capability for carbon steel welds by using tangential coil technology. These probes can accommodate both butt welds and fillet welds and generate a clear, measurable inspection C-scan image that is easy to interpret. With the use of WAVE probes, the crack length and depth can be accurately measured. Moreover, they don't require the removal of paint to be used reliably.



## Custom ECA Probes

Can be designed for a wide range of inspection purposes. They are highly useful for inspecting complex geometries, reducing inspection times and ensuring the quality of the product. These probes are developed specifically for the intended application, and therefore, require customer involvement in the design process. If you require a custom ECA probe for your inspection needs, feel free to consult with the experts at SG NDT.



## Digital Encoders

Digital encoders can be utilized in numerous applications. They prove to be highly beneficial when precise positional data is necessary, such as when monitoring the size or location of a defect over a period of time. Encoders are an inexpensive and simple accessory that can aid in conducting better inspections.





## 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 for Tubes and Surface Inspection
- "EMMA is your new inspection partner for Eddy Current and Eddy Current Array non-destructive inspections."

### LabVIEW Software Development Kit:

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.



**Small,  
Powerful  
and Weather  
Resistant.**





# μS2G2 series Specifications

## General Specifications

Power Requirements	110V–220V, (Auto voltage sensing) 50–60Hz <b>OR</b> Lithium-Ion Battery DoT compliant (RRC2054-2) – 8Hrs typical run time
Operating Voltage	12 VDC Power
Environmental	Sealed enclosure, designed for IP65
Size (external dimensions)	17.5cm x 9cm x 10cm (6.9" x 3.5" x 3.9")
Weight (excl.batteries)	1.5 Kg (3.3lb)
Weight (incl.batteries)	1.7 Kg (3.7lb)
Computer Interface	Gigabit Ethernet-1000 BASE-T <b>OR</b> 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"><li>• RJ45 Ethernet</li><li>• 18-pin I/O Connector</li><li>• 41-pin Amphenol – Extended ECT Connector</li><li>• 18-pin I/O Connector</li><li>• 12VDC Power Input</li></ul>
Encoders	2 quadrature encoder inputs
Remote Controls	<ul style="list-style-type: none"><li>• Start/Stop</li><li>• Balance</li><li>• Status</li></ul>
Alarms	2 independent real-time alarms

## Eddy Current

Frequency Range	20Hz to 6MHz
Generators / Probe Drivers	1 fully independent
Drive Voltage	0–10 Vpp (single driver)
Output Current	0.220 A max
Reference Generators	1 driver for Electronic balancing
Probe Inputs	2
Number of frequencies	Up to 5 simultaneous
Number of ECA channels	128
Data Format	32 bits
Data rate	100,000 data points/s/ input



**Are you interested  
in  $\mu$ S2G2?**

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

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