

Radially Polarised Shear Wave EMAT HWS2225-GC

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Product Features

- ▶ No couplants required, works on rough surfaces
- ▶ Generates and detects at 3-5 MHz centre frequency
- ▶ Compatible with all Sonemat's bulk wave electronics
- ▶ Operates on conductive and/or magnetic samples

The HWS2225-GC is a high-performance, broadband, radially polarised shear bulk wave Electromagnetic Acoustic Transducer (EMAT), ideal for pulse-echo inspections. Designed to work seamlessly with Sonemat's GS2020 EMAT adaptor box and the PR5000 or PR5020 pulser-receiver systems, this probe delivers reliable and precise measurements across a variety of applications.

Utilizing a Lorentz-driven working principle, it generates a centro-symmetric shear wave, providing broad frequency coverage with peak energy around 3-5MHz. Its robust construction, featuring a single permanent magnet, ensures a stable working field and exceptional performance. It can be used at up to 2mm lift-off.



Applications



The HWS2225-GC is suitable for a range of industrial applications, in non-destructive testing (NDT) in sectors such as energy generation, petrochemical and oil & gas. Its broadband frequency response and adaptability make it perfect for material characterization, flaw detection, and thickness measurement.

- Thickness gauging ($\pm 0.1\text{mm}$)
- Corrosion monitoring
- Acoustic birefringence
- Crystallographic texture
- Boiler tube inspection
- Defect detection

Feature	Description
Probe Configuration	Pulse-Echo, can be used in pitch-catch with two probes
EMAT Working Principle	Lorentz force mechanism Magnetostrictive effect (if sample is magnetostrictive)
Weight	0.2kg
Dimensions	40mm (55mm with BNC) length x 31mm diameter
Operating Temp.	0 – 80 °C
Working Voltage	300 – 1000V pulse
Excitation Frequency	Broadband (spike) optimised for peak energy around 3–5 MHz
Wear Face	Alumina ceramic (as standard, composite can be used)
Connections	BNC socket (50Ω)
Magnet Type	Neodymium Iron Boride (NIB); field normal to sample
Recommended Electronics (Driver and Amplifier)	Sonemat's GS2020, PR5000 or PR5020 Contact us for more information
Options	High temperature and large lift-off variants are available Contact us for more information

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