

## Shear Horizontal (SH) Wave EMAT SHG1031-S or SHD1031-S

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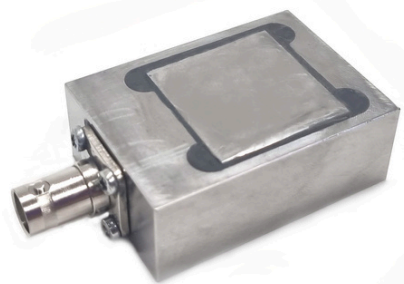
### Product Features



- ▶ No couplants or surface preparation
- ▶ Generates and detects Shear Horizontal (SH) wavemodes for frequency controlled inspection
- ▶ Customisable periodic SH wave EMATs, 10mm wavelength as standard
- ▶ Robust design to withstand industrial environments

These EMATs generate a shear horizontal wave either as a plate mode in a thin sheet, or a bulk wave in thicker material with the angle of propagation dependent on the driving frequency. This allows it to be used in a range of novel applications, such as frequency-controlled scanning. Miniature and broadband SH EMATs, as developed by our research partner organisation (the University of Warwick), now available – please enquire for details.

Designed for Pitch-Catch configuration with broadband drivers (e.g., Low Frequency PulserHPP2000 or using a toneburst system).



### Applications



Energy  
Generation



Nuclear



Tanks and  
vessels



Pipelines



Oil and Gas

Well-suited to a range of industrial applications where high-sensitivity and non-contact is required, including: oil and gas, aerospace, power generation and rail. The design provides detection of structural defects in challenging environments, aiding in preventative maintenance and quality control.

- Corrosion under pipe supports
- Corrosion monitoring
- Inspection in challenging-to-access areas
- Rail tracks
- Thickness measurement
- Robotic scanning applications

Feature	Description
Probe Configuration	Pitch-Catch (generator or detector). Can also operate in Pulse-Echo mode.
EMAT Working Principle	Lorentz force mechanism Magnetostrictive effect (if sample is magnetostrictive)
Ultrasonic Wave Type	Shear horizontal (SH) guided wave (can also generate and detect Rayleigh waves under correct conditions)
Excitation Frequency	Typically optimised for spatial wavelength 10 mm (approx. 300kHz on thin steel). A wide range of other wavelengths (including custom builds) are available, please enquire.
Working Voltage	400 - 1000 V
Dimensions	55mm length x 45mm diameter, width with BNC socket 60mm
Weight	0.25kg
Magnet Type	Neodymium Iron Boride (NIB) magnet array
Front Wear Face	Metal as standard, can be customised
Connector	BNC socket (50Ω)
Operating Temperature	0 - 80°C
Recommended Electronics (Driver and Amplifier)	Sonemat's Toneburst Pulser-Receiver TBPR1000, HPP2000 High Power Pulser, Sonemat SAA1000 standalone Amplifier ; or RITEC's RPR4000 High power Pulser-Receiver - contact us

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