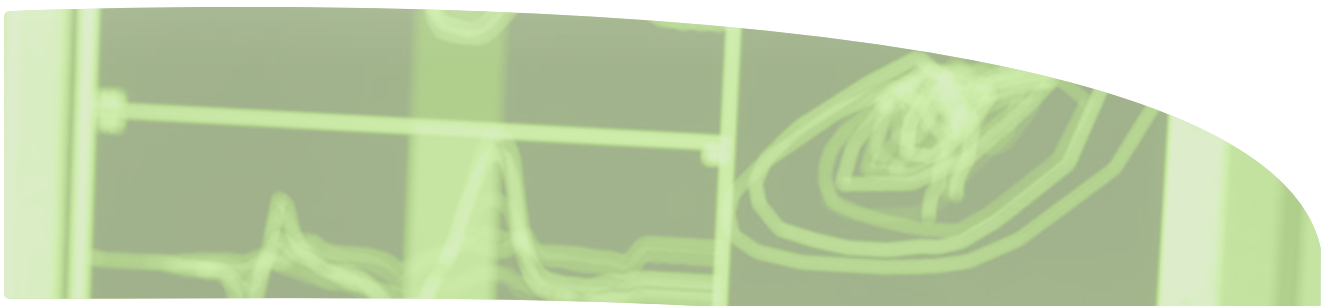
TSC

Part of Eddyfi Technologies

AMIGO™

ACFM® Inspection Technology



Leaders in Advanced Non-Destructive Testing

ACFM® Inspection Technology

The AMIGO™ provides the operator all the functionality and advantages of TSC's Alternating Current Field Measurement (ACFM®) in a portable package.

Reliable crack detection with accurate sizing, in both length and depth, is quickly achieved using a rapid scanning technique with a hand held probe. Reduced cleaning requirements, as there is no need to clean to bare metal, add to the time savings gained when using ACFM® for your inspection campaigns.

The AMIGO™ has the benefits of a long battery life and is a rugged site unit, rated to IP54.

Capable of inspecting through thin metallic coatings and non-conductive coatings several millimetres thick, for a wide range of geometries, the AMIGO™ provides ACFM® solutions for a broad scope of general inspection applications. These features make the AMIGO™ Instrument the best solution for top-side inspection crack detection.

Features

- Rapid scanning using a hand-held probe.
- Reliable crack detection with accurate sizing (length and depth).
- Reduced cleaning requirements, no need to clean to bare metal.
- Rugged site unit, IP54 rated.
- At least 5 hour operation on one fully-charged battery pack and easy exchange of battery packs in the field.
- Mains-powered battery charger for use with 110 to 240V AC (50 or 60 Hz).
- ASSIST™ software (Microsoft Windows®) for ease of operation and compatibility with other Windows® applications.
- Full data storage for back-up, off-line view and audit purposes.
- On-board buttons for RUN / STOP and MARKERS and larger probes to allow one man operation in difficult access areas.

Probes

Access to a wide range of geometries is possible using TSC's wide range of topside single sensor and array probes.

- Dual frequency probe option:
  - 5kHz (for optimum performance on ferritic steel).
  - 50kHz (for improved sensitivity on non-magnetic materials).
- Standard probes contain a tangential field inducer giving a locally uniform input field and concentric or adjacent sensors to measure Bx and Bz fields simultaneously.
- Array probes contain up to 32 sensors and up to two orthogonal field inducers.
- All probes contain electronics providing signal filtering and pre-amplification, a pic containing a unique serial number, and firmware to support optional switches and LEDs.

ASSIST™ Software

The AMIGO™ is supplied with ASSIST™ software, TSC's comprehensive instrument control, data collection and analysis package, which features include:

- The creation of professional client reports of inspection data and results.
- Real-time output of graphic based results enabling instant defect recognition.
- Immediate defect identification and sizing.
- Automated data saving management for reliability, time-saving and auditing.
- Powerful graphical views including butterfly, surface contours, zooming, panning etc.
- Recording of inspection notes and identified regions of other areas of interest.
- Data analysis possible on or off-site.
- Full range of ACFM® probes supported.
- Simple clock-marking capability during scan.
- Mouse/Pen controlled defect marking and sizing.

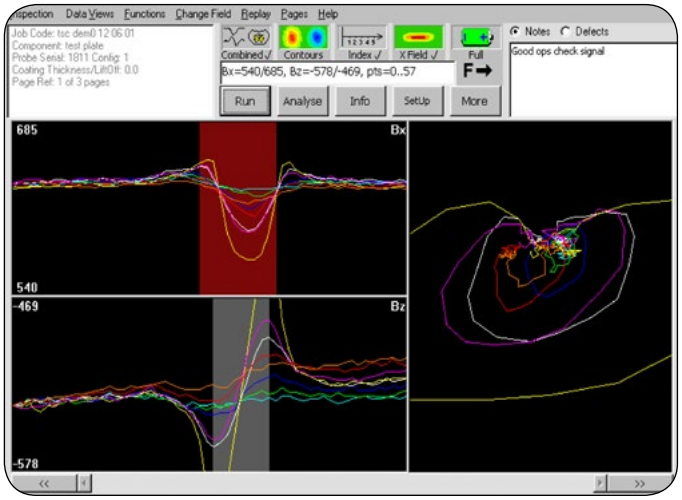
Common Applications

- ✓ Topside Crack Detection
- ✓ Weld Inspection
- ✓ Through Coating NDT
- ✓ Drilling Thread Inspection
- ✓ Bridges and Infrastructures
- ✓ Storage Spheres and Tanks
- ✓ Splash Zone Inspections
- ✓ Rail Track, Wagon and Axles
- ✓ Pipelines, Welds and Damage Assessment
- ✓ Subsea Weld Inspection

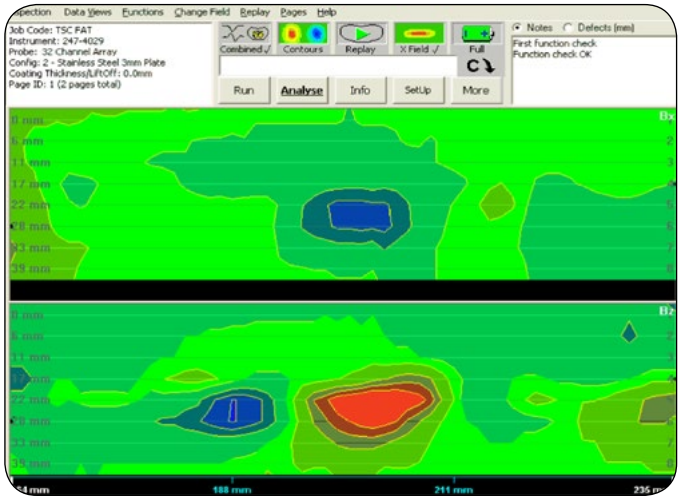
Advantages of ACFM®

Feature	ACFM®	MPI	Conventional Eddy Current
Reduced dependence on operator competence. • Detection reliability and repeatability • Confidence in integrity data	✓	✗	✗
Detection through coatings. • Avoids cost and disruption of coating removal	✓	✗	✓
Detection in normal ambient light. No pollutants used.	✓	✗	✓
Detection in Duplex and non-magnetic materials.	✓	✗	✓
Can be remotely deployed. • Enables deep water or hazardous zone deployment • Reduced cost of dive support vessels and systems	✓	✗	✗
Provides accurate and auditable inspection records. • Enables effective integrity and risk management • Supports regulator verification and audits	✓	✗	✗
Determines crack length and depth without calibration. • Allows crack criticality assessment	✓	✗	✗

ASSIST™ Software



Typical signal of a longitudinal defect detected with an array probe, showing Bx and Bz traces on the left and the Butterfly plot on the right.



Typical signal of a transverse defect detected with an array probe, shown as a contour plot. Bx and Bz signals are depicted above and below.

AMIGO™ System Specifications	
Unit Weight	4.5 kg
Unit Size	206 x 292 x 127mm
Probe Cable Length	5 metres (standard). Up to 50m upon request.
Serial Communications Cable	Up to 30 metres
Operating Temperature	-20°C to 40°C
Environment Protection	IP54 rated
Battery Life	>5 hours continuous operation with array probe >10 hours continuous opertaion with a single probe
Recharge Time	4 hours
Array Support	32 channels standard (i.e. 16 sensor pairs) + position encoder More channels by special request

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