Technical
Specifications

R-SCAN ARRAY

Semi-automated phased-array corrosion mapping solution.

Semi-automated phased-array corrosion mapping solution incorporating M2M Gekko or Mantis phased-array instruments

Eddyfi Technologies

NON-INTRUSIVE INSPECTIONS (NII) FASTER, EASIER AND SAFER

R-Scan Array phased-array solution for the inspection of complex geometry components including curved surfaces from 4 inch (100 mm) diameter and restricted access areas.

The R-Scan Array scanner allows for semi-automated phased-array corrosion mapping of smaller areas and assets ranging from 4 inches (100 mm) to flat plate.

With integrated data collection controls such as pause/resume, index/stitch scan and encoder reset, operators can quickly complete a scan without touching the data collection instrument.

The dual-sided quick release probe locks provide equal pressure across the probe, ensuring the signal remains perpendicular to the scanning surface. The release valves in the portable water chamber enable a consistent pressure, which creates a seal at all circumferential positions around the pipe or vessel.

Designed to work seamlessly with the cutting-edge M2M Gekko and Mantis phased-array systems. M2M is the first brand to deliver portable phased-array flaw detectors capable of driving matrix arrays and perform TFM in real-time.

Having this unique ability with a manual phased array scanner, allows operators to determine defect type and morphology quickly and also navigate restricted and complex scanning surfaces.

Benefits

- Inspect assets from 4 inches (100 mm) diameter
- Quick and easy PAUT probe setup
- 1 x 1 mm resolution
- Reliable seal in any orientation
- One-handed operation
- Improved inspection dexterity and accuracy

Features

- Onboard buttons to pause/resume scan and stitch data sets
- One-handed control options and scanning handle
- Air release valves allowing for reliable seal and stable signal
- Dual-sided quick release probe locks
- Attach to the automated RMS scanner for larger inspections
- Integrated easy apply brake for placement and setup

ADVANCED PHASED-ARRAY CORROSION MAPPING

Versatile, portable phased-array ultrasonic testing solution offering real-time Total Focusing Method (TFM).

Phased-Array Corrosion Mapping

The phased-array configuration utilizes the water-column concept that eliminates the need for a wedge, thus providing the benefits of improved signal consistency, accuracy, and limited dead zone. This concept offers enhanced surface conformance and improved coupling.

Real-time TFM

TFM is a powerful technique that focuses at each point of a user-specified zone for accurate defect characterization and high-resolution imaging. Real-time imaging with a speed of up to 30 frames per second can be achieved for the obtention of a clear image and defect contouring. The TFM has a 256 x 256 pixels image resolution (65K points focusing).

Non-Intrusive Inspection (NII)

This unique technology combination allows inspection versatility when performing a non-intrusive inspection of pressure vessels and associated pipework.

To complete a thorough NII inspection, there are requirements to perform numerous advanced Ultrasonic Testing (UT) methods. In addition to corrosion mapping of the shell, the industry recommended practice is to perform Time of Flight Diffraction (ToFD) on welds, manual phased-array for flange face and nozzle welds.

The R-Scan Array is the perfect complementary system when navigated restricted inspection surfaces and complex geometries.

RMS PA Automated Scanning

The robust, field-proven RMS robotic scanning head has been successfully deployed on various assets such as storage tanks, pressure vessels, pipelines and other critical structures in harsh environments including oil and gas, offshore and mining.

RMS-600 ideal for scanning rates on large surface areas such as tank shells, pressure vessels, and other structures.

RMS-450 is designed for operating circumferentially on curved surfaces such as pipelines or pressure vessels from 152 mm (6 in) up to flat plate.

RMS-300 a general-purpose scanner for inspecting areas with limited access, vessel heads or other applications where smaller scan widths are required.

SPECIFICATIONS

R-SCAN ARRAY SCANNER SPECIFICATION

Dimensions	W: 117 mm x L: 159 mm x H 116 mm
Weight without probe	1.2 Kg
Scan grid	Configurable from 1 × 1 mm (0.04 × 0.04 in)
Typical near surface resolution	1.5 mm
Inspection range	4 inches to flat plate
Maximum scan speed	1mm x 1mm resolution = 220 mm/sec (Based on 40mm range using M2M instrument)
Typical single line scan width	61 mm (Based on 4 element aperture)
Scanner control	Manual (On board indexing and pause/resume controls)
Delay line wedge height	15mm & 30mm
Umbilical cable	5 m (16 ft) standard. 7.5 m (24 ft), 15 m (49 ft) and 30 m (98 ft) optional
Max surface temperature	80°C (176°F)
Water pump power requirements	100 to 240 VAC - 50-60Hz

M2M Gekko and Mantis

GENERAL

Dimensions (L × W × H)	**Gekko**	410 × 284 × 126 mm (16 × 11 × 5 in)
	Mantis	320 × 220 × 100 mm (13 × 7 × 4 in)
Weight	**Gekko**	6kg (13 lb) without battery
	Mantis	4kg (8.8 lb) without battery
Screen	**Gekko**	0.4'' high contrast resistive screen Resolution 1024 × 768 px
	Mantis	8.4'' high contrast resistive screen Resolution 1024 × 768 px
Operating temperature range:		-10°C to 45°C (14°F to 113°F)
Operating time:		4h (hot swappable battery)
IP Rating		Designed for IP66

RECEIVERS

Phased array channels:	Input impedance: 50 Ω
	Frequency range: 0.4 to 20MHz
	Max. input signal: 1.2Vpp
	Gain: up to 120dB (0.1dB step)
	Cross-talk between two channels < 50 dB

PULSERS

Phased array channels:	Negative square pulse, width: 35ns to 1250ns
	HT voltage: from 12V to 100V (with 1V step)
	Max. PRF: up to 20kHz

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