

# EDDYFI REDDY

Portable electromagnetic NDT system  
for rapid crack and corrosion assessment



# THE BEST PORTABLE INSTRUMENT FOR RAPID CRACK AND CORROSION ASSESSMENT

A modern, rugged, portable, and high-performance multi-technology instrument providing intuitive C-Scan imaging through a user-friendly interface.

## Intuitive real-time C-SCAN imaging

High-quality C-scans convey a wealth of information. Analyzing signals is much more intuitive thanks to Reddy's on-the-fly 2D imaging.

## Massive multi-touch display

Reddy's premium-quality 26.4 cm (10.4 in) LED display is optically bonded, non-reflective, and comes with 3 mm (1/8 in) strengthened glass. The instrument has been designed to be used on-site, with gloves under any lighting condition. The multitouch capabilities enable easily zooming and rotating views.

## The power of eddy current array

Reddy's state-of-the-art electronics offer up to 128 built-in Smart-MUX™ channels, making high-resolution, single-pass scans with wider coverage possible. Surface ECA with Reddy means a high probability of detection and significantly faster inspections.

## The power of magnetic flux leakage

Rapid far side corrosion assessment in magnetic materials with all the benefits of array technology - wide coverage, high POD and visual intuitive data display.

## Designed for field use

Reddy is sealed and it is designed for IP65. The magnesium alloy housing is tough, water and dust resistant, and cools down without any need for external air exchange. The adjustable stand, top handle, and four corner anchor points make Reddy practical for on-site inspections.

## Modern computing performance

Reddy benefits from a robust, 100 GB internal solid-state disk (SSD) drive for secure inspection data. It runs an embedded Microsoft® Windows® PC, which provides standard, connectanywhere capabilities and advanced productivity tools that optimize field testing.



# THE FIRST REAL ECOSYSTEM FOR SURFACE INSPECTION

When you combine Reddy's portability with Eddyfi standard ECA, tangential ECA (TECA™), MFL and/or custom probes, you unlock the power of the first true standard system for surface inspection.

## Embedded software

Reddy runs Magnifi® GO, our powerful, yet easy-to-use acquisition and analysis software. It's especially tailored for surface inspections and relies on well-designed wizards to create setups. Furthermore, Magnifi GO makes collecting and reporting data incredibly intuitive.

## Desktop data analysis

Magnifi GO is compatible with its full-fledged big brother Magnifi CPN. With it, configure inspection setups for Reddy and analyze in-spection data in depth directly on your computer, with full 3D C-scan capabilities.

## The right probe for the right application

Eddyfi's standard surface array probes ([www.eddyfi.com/surfaceprobes](http://www.eddyfi.com/surfaceprobes)) are all engineered for ferrous and non-ferrous materials, as well as a variety of applications in the oil & gas, power generation, and aerospace industries.

| APPLICATION              | FERROUS       | NON-FERROUS |
|--------------------------|---------------|-------------|
| Welds                    | ✓ (ECA, TECA) | ✓ (ECA)     |
| Far-side corrosion       | ✓ (MFL)       | ✓ (ECA)     |
| Surface-breaking defects | ✓ (ECA, TECA) | ✓ (ECA)     |
| Near-surface defects     |               | ✓ (ECA)     |

If these standard probes don't meet your specific requirements, you can still leverage the full might of Reddy—Eddyfi Technologies experts can design custom probes to suit your exact needs.



# KEY APPLICATIONS

## Detecting and sizing cracks in carbon steel welds

Eddyfi Sharck™ is engineered around tangential ECA (TECA™) technology, which was developed for cracking in carbon steel. It can locate surface-breaking cracks and assess their length, as well as size cracks as deep as 7 mm (0.28 in). Sharck can also simultaneously scan the weld cap, toe area, and heat-affected zone for longitudinal and transverse cracks without surface preparation or paint removal.

## Assessing corrosion on aluminum and stainless steel tank floors

Semi-flexible ECA probes can adapt to a tank floor's curvature and other geometric features, offering sufficient penetration to scan through thick aluminum/stainless steel (over 6.35 mm or 0.250 in thick). So doing, the solution is capable of detecting and characterizing corrosion-related defects such as pitting and thinning affecting as little as 10% of a plate's thickness.

## Assessing corrosion on ferromagnetic pipes, tank walls and more

MFL pipescan can adapt to a wide range of diameters (48 mm (1.9 in) to flat surfaces. The Magnetic Flux leakage option allows you to fully benefit from the REDDY versatility in order to fast screen large areas for corrosion indications. The array of sensors provides large coverage and high POD. Lift-off and thick magnetic walls are now at reach.

## Detecting and assessing stress corrosion cracking in base metal

Eddyfi I-Flex™ ECA probes are the most versatile in the industry. Their multiple built-in topologies and flexible bodies enable them to address a variety of applications. I-Flex probes are perfect for stress-corrosion cracking (SCC) in ferrous and non-ferrous materials. Whether SCC is affecting the integrity of pipelines, pressure vessels, or tanks (on base metal or internal cladding), I-Flex encoded scans allow efficiently sizing clusters.

# SPECIFICATIONS

| GENERAL                     |  |                                     |
|-----------------------------|--|-------------------------------------|
| Dimensions (WxHxD)          | 355x288x127 mm (14.0x11.3x5.0 in)  |                                     |
| Weight                      | With batteries   | 6.6 kg (14.5 lb)                    |
|                             | Without batteries  | 5.7 kg (12.5 lb)                    |
| Volume                      | 13 L (791 in <sup>3</sup> )  |                                     |
| Power requirements          | 100–240 VAC, 50–60 Hz  |                                     |
| Power supply                | Direct VAC or onboard batteries  |                                     |
| Batteries                   | Type   | Li-ion, rechargeable, DOT compliant |
|                             | Typical life   | 6–8 hours                           |
| Display                     | 26.4 cm (10.4 in)  |                                     |
| Video output                | HDMI   |                                     |
| Storage                     | SSD, 100 GB  |                                     |
| Cooling                     | Sealed and fanless   |                                     |
| Encoders                    | 2 axes, quadrature   |                                     |
| Connectivity                | Gigabit Ethernet, Wi-Fi, Dual Mode Bluetooth® 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), USB 2.0 (x3) |                                     |
| Probe recognition and setup | Automatic  |                                     |

| ECA/ECT                       |  |
|-------------------------------|--|
| Channels                      | ECA: SmartMUX 32, 64, or 128<br>ECT: 4<br>MFL: 32, 64 or 128 |
| Frequency range (ECA, ECT)    | 5 Hz–10 MHz  |
| Frequencies                   | ECA: 2 simultaneous<br>ECT: 4 simultaneous                   |
| Array Connector               | 160-pin  |
| ECT connector                 | 19-pin Fischer   |
| I/O connector                 | 12-pin Fischer   |
| Generator output / Coil drive | Up to 20 Vpp   |
| Injection modes               | Multiplexed, simultaneous, continuous                        |
| Receiver gain                 | 41 dB range, 23–64 dB  |
| Data resolution               | 16 bits  |
| Acquisition / Sampling rate   | Up to 50 000 samples/s                                       |

| ENVIRONMENTAL         |   |
|-----------------------|---|
| IP rating             | Designed for IP65   |
| Operating temperature | 0–40 °C (32–104 °F)   |
| Operating humidity    | 95%, non-condensing   |
| Compliance            | ASME, EN 61010-1, CE, WEEE, FCC Part 15B, ICES-003, AS/NZS CISPR 22, RoHS |

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