

CorrSem™

Corrosion Monitoring System



Track the parameters which drive the formation of corrosion, as well as to monitor corrosion activity itself.

Corrosion costs have been estimated in various studies to be in the range of 3% to 4% of gross domestic product. While many procedures have been put in place to control corrosion, these procedures are typically labor intensive (and expensive) operations that are by no means infallible, and are generally not optimized to account for varying environmental conditions.

To help maintainers proactively address corrosion within a condition-based maintenance framework, Impact has developed the CorrSem™ Corrosion Monitoring System to track the parameters which drive the formation of corrosion, as well as to monitor corrosion activity itself. This system can be used across a variety of aircraft, land and sea vehicles as well as in stationary/structural applications.



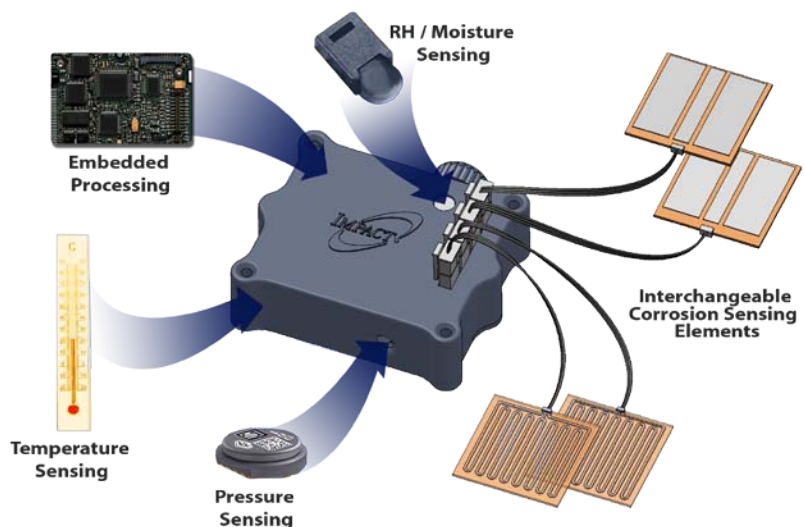
The CorrSem Corrosion Monitoring System

The CorrSem corrosion monitoring system collects, processes, analyzes and stores data from both electrochemical and environmental sensing elements:

- Environmental sensors include those directly related to driving forces behind corrosion: Temperature, Pressure and Relative Humidity.
- The electrochemical sensors used are sensitive to many types of corrosion attack including uniform, pitting, and crack / crevice corrosion. The electrochemical techniques used with these sensors include measuring electrical resistance, electrochemical noise, and electrochemical impedance.

The corrosion sensing elements are attached to the CorrSem monitoring platform via water-tight electrical connectors and can be used interchangeably (i.e. which allows the end-user to mix and match sensing elements to the application).

The CorrSem corrosion monitoring system powers and communicates with these sensors. It also automatically extracts the key summary health values from the raw sensor signals in real-time and stores the results.



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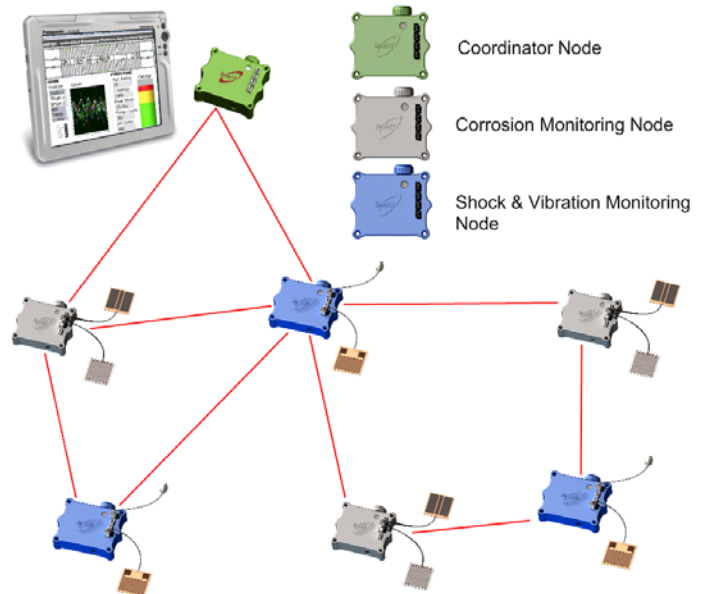
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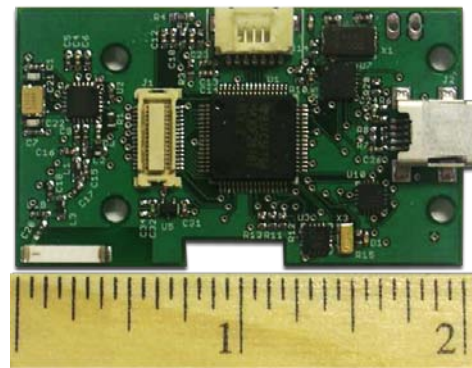
Small, lightweight, networkable & scalable architecture, and low-power operation

CorrSem Attributes:

- Overall package is small and lightweight - able to be placed in areas that are difficult to inspect.
- Designed to operate for several years between battery changes through the use of low-power circuitry and intelligent sleep modes.
- All on-board stored data can be downloaded through a high-speed USB interface.
- Networkable & scalable architecture – network with vibration and other corrosion monitoring nodes for full asset coverage.
- The embedded microcontroller can be reprogrammed to support a variety of application-specific sensor types as well as to customize the health assessment algorithms and communication methods used.
- The form factor and mounting interfaces are flexible.
- Adaptable to any material/coating and corrosion type by changing materials and types of sensing elements used.



Networkable Nodes Enable Full Asset Coverage



Monitoring Platform Electronics