

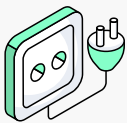
Monitoring hard-to-reach areas on bulk handling cranes

Situation

- Cracks were discovered in **difficult-to-access areas** of a bulk handling crane.
- These were identified cracks with slow propagation rates until now.
- Annual inspection costs reached \$20,000 per crane due to the need for scaffolding.

Solution

- Combined a one-time scaffolding setup with inspection and sensor installation in hard-to-reach zones.
- Installed 16 sensors per crane to continuously monitor structural health.
- Rolled out an **identical monitoring setup across all 3 cranes**.



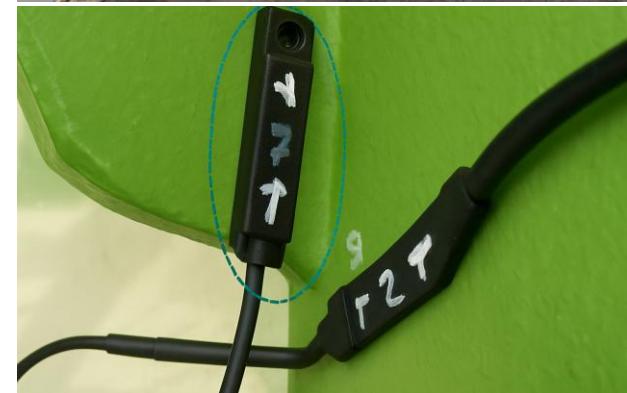
3
bulk handling
cranes



48
sensor probes
installed



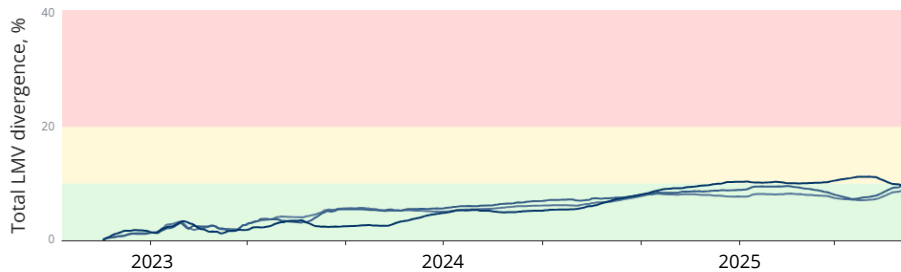
75%
less inspection
costs



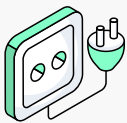
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Results

- Monitoring approach is 75% more affordable than traditional inspections.
- Enabled continuous **monitoring of previously inaccessible areas**.
- Crane operations are now optimized based on real-time sensor data.



Slow and steady LMV rise over multiple years means the crack might remain unrepaired until end-of-life



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