

# Koppers Carbon Materials and Chemicals uses advanced edge analytics to monitor specialized, process-critical hot-oil pumps in real-time

## RESULTS

- Real-time maintenance decisions with 24/7 vibration data
- Reduction in risk of significant loss of oil
- Less maintenance expense thanks to fewer \$20K pump failures



## APPLICATION

Unstaffed, process-critical, and highly specialized magnetic drive hot-oil pumping system.

## CUSTOMER

Koppers Carbon Materials & Chemicals (Koppers) is a key contributor to Australia's aluminum supply that reuses coal tar from steelworks to produce coal tar pitch – essential for aluminum smelters.

## CHALLENGE

Koppers needs to maintain a consistent flow without unexpected equipment downtime in its hot-oil pumping system. Because the pitch solidifies at approximately 110°C, pipe temperatures must be maintained above 200°C to promote continuous flow.

Any disruption to the flow negatively impacts shipping, the logistics of Koppers' processing facility, and Kopper's customers and suppliers. Disruption at Koppers' unstaffed, remote site could also mean a containment shell failure – with the associated fire risk, danger to the environment, and fines. Complicating the situation, personnel faced challenges to manual vibration data collection because the equipment was enclosed in protective heat shrouding.

Koppers wanted to monitor and analyze machinery vibration data in real time to determine asset condition and avoid risks. An ordinary solution would not work for this project because a standard time-based, manual data collection approach to monitoring could miss a fault that potentially could lead to failure.

*“The AMS Asset Monitor has already led to savings of critical assets. We hope it will continue to guide the maintenance strategy in this unstaffed plant.”*

Project Manager

### SOLUTION

Now that Koppers has adopted the Emerson solution, which includes two 12-Channel AMS Asset Monitors and specialized high-temperature accelerometers, operators can monitor and analyze vibration conditions 24/7 for seven critical hot-oil pumps at the unstaffed pumping facility.

Edge analytics helps them identify faults and determine the severity of the faults. The tools also recommend maintenance actions in real time to personnel who might not have expert knowledge of vibration analysis techniques.

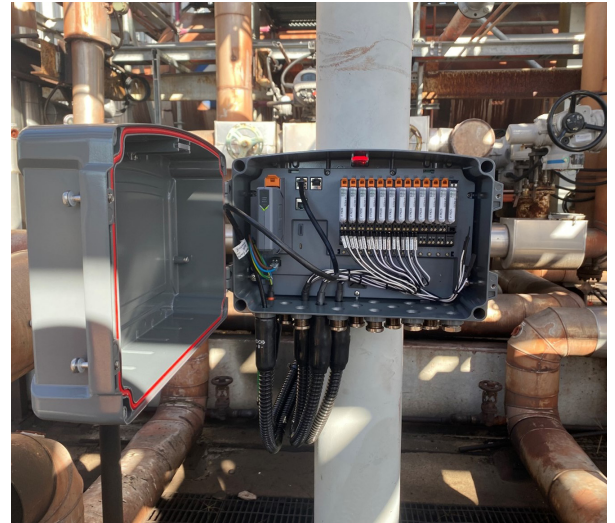
Koppers can use their SCADA system to trend overall vibration levels, which helps operators and engineers monitoring conditions. Alarms are reported to the reliability engineer who can use the edge analytics to determine the maintenance strategy for the plant item.

The solution has already delivered results. Koppers has changed out two pumps based on the Asset Monitor information. When technicians examined the pumps, they found significant wear in carbon bushings — a primary cause of pump failure. This finding is important because a major pump failure can result in significant maintenance costs of approximately \$20K, depending on the extent of the damage. Pump failures can also mean long delays because, due to the specialized nature, pump parts are expensive and face long lead times.

For more information on the AMS Asset Monitor, go to [Emerson.com/AMSAssetMonitor](https://www.emerson.com/AMSAssetMonitor).

*“Emerson staff were very helpful and professional in setting up the system on site.”*

Plant Manager



©2023, Emerson. All rights reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. The AMS logo is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while diligent efforts were made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

### Contact Us

🌐 [www.emerson.com/contactus](https://www.emerson.com/contactus)

AMS

For more information:  
[www.emerson.com](https://www.emerson.com)

  
**EMERSON**<sup>™</sup>