

Critical Systems Monitored - Reducing Operational Costs



State of the art in the art of metal.

For more than 50 years, ATEK Metal Technologies has delivered superior aluminum castings that meet the specifications of the world's most demanding industries. To ensure that their customers have the best products delivered on time, they closely monitor their critical cooling and compressed air systems.



Applications:
Filter Monitoring

Market:
Manufacturing

Challenge

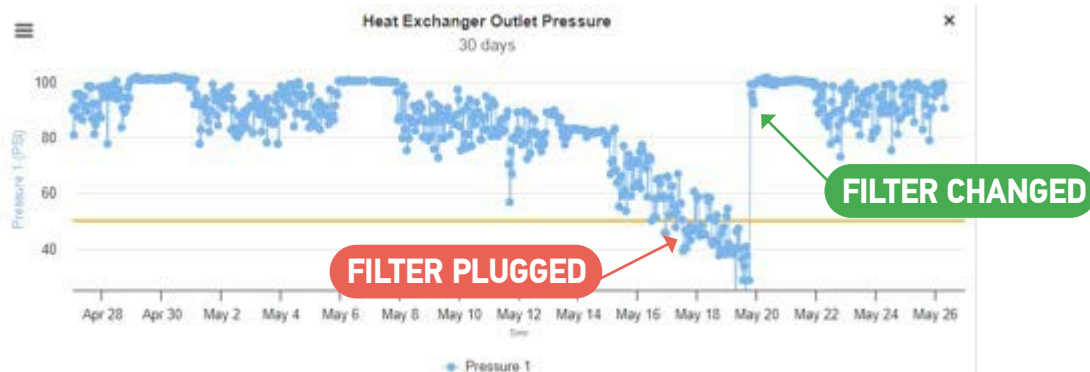
ATEK Metal Technologies was challenged with reducing scrap and related costs. The cooling system's performance was one point of interest. If the low-pressure aluminum molding tools have inadequate cooling, they would produce out-of-specification products, resulting in high scrap costs, lost time trying to find the source of the problem, and ultimately a dissatisfied customer. The plant wanted to start small and concentrate on monitoring what could have an immediate impact. They also needed the entry cost to be low with minimal costs associated with engineering, integration, and installation services. Lastly, they wanted the system to scale in size, allow mix and match of sensor hardware, and allow a mix and match of connectivity of cellular and Wi-Fi technologies all while using the same software for on and off-premise analytics and alerting.

Previously ATEK Metal Technologies would walk to the assets and check the local gauges to monitor for abnormal pressure. The major concerns were to reduce unnecessary tasks, improve frequency of data collection, and improve the reliability of the operation to avoid unexpected slow-downs and scrap.

"The cooling water filter can plug unexpectedly when idle machines are brought back online and rust or debris is circulated into the cooling loop. A plugged filter on our cooling system has severe downstream effects on our product quality and it can be difficult to find the root cause," said Larry Piehl, Manufacturing Process Specialist.

Solution

In 2023, ATEK Metals installed the TankScan TSG cellular to 4-20mA sensor gateway at their New Hampton, IA location to monitor their critical cooling systems. The monitoring system leverages cellular wireless technology, battery power, magnetically connected temperature sensors, 1/4" NPT pressure sensors, and a cloud software application for the complete solution. The measurements are monitored by the cloud software which alerts, emails, and/or texts out defined conditions.



Results

The manufacturer has seen numerous benefits from performance monitoring including:

- Immediate discovery of a plugged cooling water filter
- Reduced labor associated with inspection rounds
- Improved reliability of their operations with remote visibility to off-site and on-site personnel
- Improved confidence and reduced risk of out-of-spec product

“With our new monitoring system, we were alerted of a low-pressure condition on our cooling water supply. Within a few minutes, we had a maintenance tech at the asset, confirmed the low pressure, and proceeded to change the plugged filter. The system paid for itself with this one catch”, said Larry.

Return on investment – 60 days

Installed in March, in May the condition was alerted, proactive maintenance was conducted, and a manufacturing slow-down was avoided!

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