PREVENTING ELECTRICAL FAILURE THROUGH THERMAL IMAGING

AVT Reliability® conducts monthly thermographic surveys on electrical distribution boards and control panels, identifying potential failure points early. This proactive approach helps maximise site safety, reduce unplanned downtime, and support continuous production.

THE CHALLENGE

The electrical control panel is responsible for operating the labeller machine on the bottling line. If the system were to fail unexpectedly, it could cause unplanned downtime, disrupt production, and potentially result in equipment damage.

In the worst-case scenario, undetected faults could lead to electrical fires, posing a significant safety risk and impacting wider site operations.

THE FINDINGS

During a scheduled inspection, AVT identified a high-temperature reading across a cabled connection on a 24V power supply within the panel.

Thermal analysis indicated a high-resistance fault, most likely due to a poor or defective termination. Left unresolved, this type of issue can escalate into electrical failure or fire, resulting in safety risks and production loss.

The anomaly was clearly visible in the thermal profile, prompting immediate escalation to the site's engineering team for planned intervention.

THE APPROACH

AVT Reliability® provides monthly thermal imaging inspections, covering all electrical distribution boards and control panels across the site.

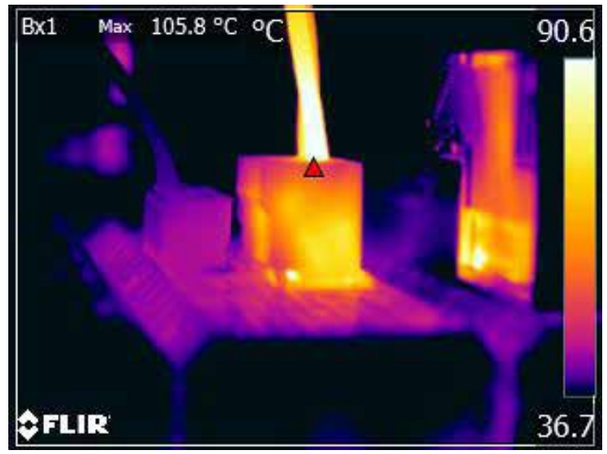
Each panel is surveyed twice annually. The site has partnered with AVT since 2018 as part of a long-term reliability strategy. Engineers use thermal imaging to detect early-stage faults such as overheating, loose connections, and load imbalances.

All captured data is uploaded to the Machine Sentry® platform for analysis and secure storage. Reports, including annotated thermographic images and actionable recommendations, are submitted monthly to the site's engineering team.

THE SOLUTION

The panel was isolated and the suspected fault confirmed upon inspection. A crimped termination was introduced to secure the cabling, and the connection between the cable and component was remade to eliminate the high resistance.

A follow-up thermal inspection verified the repair was successful, with the component returning to normal operating temperature. No further revisions to service scope were required.



FOLLOW UP

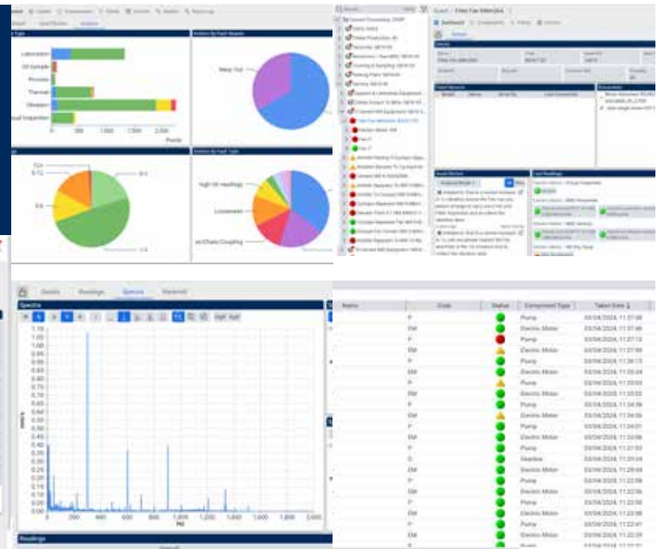
Despite the panels being relatively new, similar thermal anomalies have since been identified in multiple labeller control panels across the site, in the same cable location. AVT has recommended that the site preemptively apply the same corrective action across all similar assets, indicating a potential design or manufacturing issue.

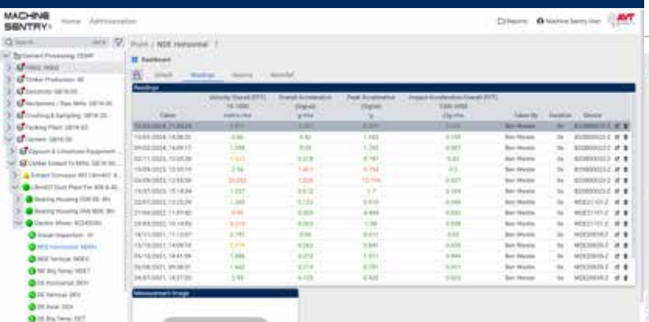
Although the site owns a thermal imaging camera and performs basic inspections as part of their PM routine, they lack formal training. In response, the lead bottling technician has requested AVT provide on-the-job thermography training to upskill the team.

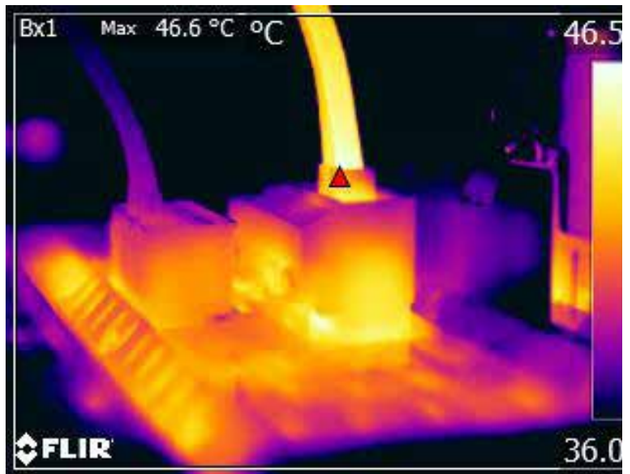
If this fault had remained undetected, the result could have been unplanned line stoppages, significant production losses, or a fire event requiring site evacuation, complete shutdown of operations, and possible HSE investigation.

MACHINE SENTRY SOFTWARE

With a revolutionary approach to condition monitoring, Machine Sentry® is the portal for all your condition monitoring needs:







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