

# Assetivo.com

Asset Management • Reliability • Condition Monitoring

## Case Study

## Case Study: Infrared Thermography Survey Avoids Critical Asset Failure.

### Introduction

Assetivo provide condition monitoring services to a multi-site south Wales manufacturer in the form of vibration analysis and infrared thermography (IRT) surveys. The objective is to improve the long-term availability of critical production equipment by way of reduced downtime and planned outages as part of the wider asset management plan. This case study highlights the use of IR Thermography to avoid a failure and potential fire on an electrical control panel. These types of IRT surveys are often a *mandatory requirement for industrial business insurance* to be valid in the event of a fire.

### The Problem

On the 6 monthly infrared thermography inspection of an electrical control panel on a critical production asset, the contactor cable O304 was found to be operating at 66°C. This temperature was around 35°C above the ambient operating.

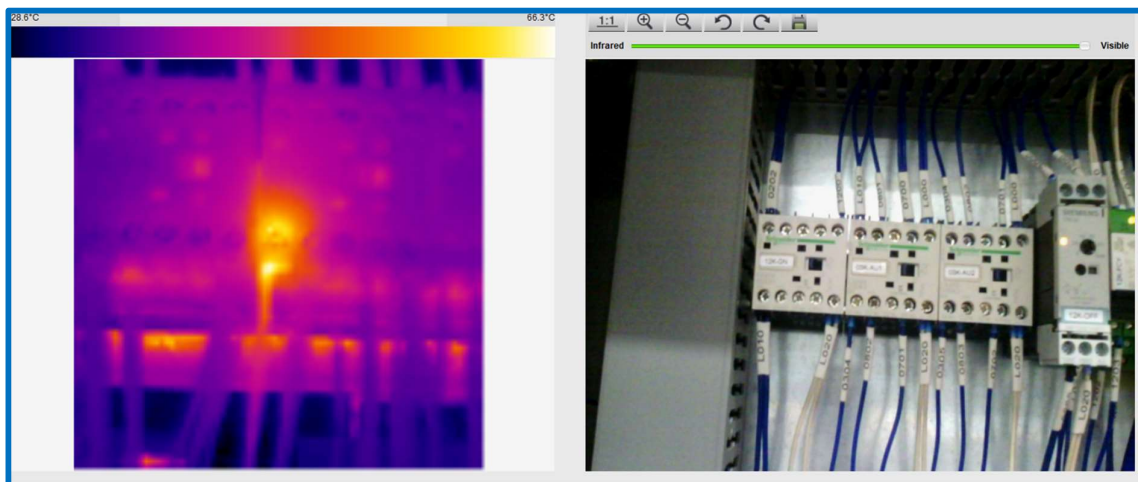


Figure 1: IR thermal image and photo of electrical control panel

### The Solution

On inspection, the cable was found to be loose in the terminal block and thus causing a high resistance joint, but the cable was found to have acceptable cable termination to the ferrule. However, as it was loose in terminal block and therefore a fire risk if the condition was allowed to continue in the long term. The asset was stopped and electrically isolated. The cable was tightened in-situ and temperature

re-measured after 10 minutes of production. The new running temperature was found to be approximately 27°C.

### Cost Benefit Analysis

The CBA assumes a small fire at the contactor only & damaged cables. Production loss costs approximately £1000 per hour and maintenance labour costs at £40 per hour. Consequential losses are lost product or waste.

	Cost for Planned Repair (P)	Cost for Unplanned Repair (U)
<b>Labour Cost</b>	£10 (0.25 hour)	£200 (5 Hours)
<b>Material Cost</b>	£0	£200
<b>Production Lost Cost</b>	£250	£5000 (5 Hours)
<b>Other Consequential Losses</b>	£0	£1000
<b>Total Cost</b>	£260	£6400
<b>Total Cost Benefit (U-P)</b>	<b>£6140</b>	

### Conclusion

Applying IRT surveys to industrial plant allows condition-based maintenance to replace the more costly run to failure strategy. This case study has shown how a simple inspection has allowed the company to avoid unplanned downtime, a potential fire, and approximately £6140 in costs.