

ELSA Scales Up Feelit's Steam Trap Continuous Monitoring Solution **to Save Up to 11,400** Tons of Steam and 2,200 Tons of CO2 Emissions Annually

Approximately 25% of the steam traps consistently monitored, failed or were not working to optimal performance



BACKGROUND

Estavayer Lait SA is part of the ELSAMifroma Group, and is the largest single
site dairy processing plant in Switzerland.
At ELSA, the high level of automation
and expert management enable the
Company to manufacture an extremely
wide range of products, while observing
strict hygiene and quality requirements.
ELSA processes more than 269 million
kilograms of milk annually.

ELSA-Mifroma is committed to the most up-to-date technologies throughout the production process, consistently investing in technology, enabling optimal levels of quality and hygiene. The Company meets the expectations and requirements of its consumers by ensuring constant innovation in its products and technologies.

As part of these ongoing efforts ELSA and Feelit have partnered to provide more optimized solutions to sustainable manufacturing efforts.



Feelit's cutting-edge sensor technology and services have convinced a demanding technical team in our dairy facility. Besides the technical and financial benefits, the proactive, flexible and customer friendly approach of the Feelit Team has greatly contributed to the success of the pilot and our decision to expand the relationship.

Matthew Robin, CEO ELSA-Mifroma Group



CHALLENGE

Within the Food, Beverage and Dairy industry, quality is imperative. The industry is highly regulated, and the slightest deviation from strict manufacturing control can lead to contaminated products incurring financial loss and potentially, loss of life. Process flow systems are essential to this type of manufacturing, and steam systems are integral to these process flow systems and are critical to the success of the facility.

Steam traps are currently part of almost every major industrial process, and are an essential part of the steam system, with significant effects on performance optimization. Their basic function is to allow condensate to flow, while preventing the passage of steam until it has given up its heat by condensing back to water. As with most industrial equipment, steam traps suffer from wear over the years. If the traps fail to open or close, the effects may be very far reaching over the entire industrial process within the plant. Faulty traps can cause damage ranging from energy loss and individual equipment shutdown, to shutdown of an entire line.

Annual physical inspections and audits are not enough and leaks are expensive. Steam trap leaks and blockages may cause loss of energy, financial loss, increased emissions and increased general deterioration of equipment.





SOLUTION

Predictive maintenance and continuous monitoring have become integral for sustainable smart manufacturing, better supporting value creation. Predictive maintenance not only prevents unscheduled downtimes in production but makes a critical contribution to manufacturing sustainability and the efficient use of resources by ensuring optimum system availability.

Feelit's predictive maintenance solutions provide continuous monitoring of the steam traps, identifying these problems in real time and delivering actionable and relevant insights about the specific state of the steam trap and what exactly needs to be done, enabling quick and effective resolution of the issue. Feelit has developed an ink-based sensing technology which combines a printed nanotechnology sticker sensor and a wireless edge device, that can detect parameter changes and predict upcoming failures in the steam traps. Feelit turns a standard asset into a smart asset. The solution delivers proprietary data analytics which can easily integrate into current UI and IoT systems with a quick ROI.





FEELIT AND ELSA

ELSA wanted to improve its system performance and chose Feelit's Smart Steam Trap Solution as a first step in a pilot program to ascertain overall effectiveness and efficiency. The Company chose 25 out of approximately 500 steam traps in the facility to be monitored by Feelit's Steam Trap Predictive Maintenance Solutions, augmenting the annual physical inspection/audit. A Feelit field service engineer was dispatched to ELSA's facility in Switzerland for installation and training, in order to support ELSA's maintenance team in getting the most out of Feelit's solution. ELSA received ongoing reports from Feelit with respect to the status of the installed base of monitored Steam Traps.

Tag Name	HEIDI ST12
Feelit Edge Device Mac Address	FC:7E:84:A5:16:F6
Manufacturer	Gestra
Туре	Thermodynamic
Steam Pressure difference	13 barg
Connection size	DN50
Application	Process
Monitoring Report Cycle	October.21
Monitoring Duration	31 Days
Condition	Blow Through
Comments	None
Weekly Steam Loss (CHF)	1573.5
Suggested Action Items	Replace the steam trap

Tag Name	PU area ST 147
Manufacturer	Spirax Sarco
Model	FT47-4.5
Туре	Float
Steam Pressure difference	5 barg
Connection size	DN25
Application	Process
Monitoring Report Cycle	18 December 2020 - 18-February 2021
Monitoring Duration	59 Days
Condition	Abnormal Behavior
Steam Loss(USD)	0
Suggested Action Items	"1. Stuck close inspection 2. Steam line inspection"







Over the pilot phase, Feelit reported that approximately 25% of the steam traps which were consistently monitored, to be failing or not working to optimal performance. Feelit also reported on additional related asset anomalies and failures, such as damaged non-return valves, that caused un-desirable back pressure events.

As a next step following the success of the pilot, ELSA is doubling the subscription of Feelit's monitoring solution to 50 Steam Traps. Direct savings were incurred in steam energy, with an average yearly saving of 230 metric tons of steam per steam trap, resulting in a total saving of 5,720 metric tons of steam during the pilot program. This extrapolates to savings of approximately 11,400 tons of steam per annum over the 50 steam traps which will be monitored by Feelit in the ELSA facility. It is also important to note that Feelit's monitoring solutions contribute to better environmental policy to save 2,242 metric tons of CO2 emissions per year, that are not released into the environment due to more efficient and effective management of steam traps.

BENEFITS

Innovation and digitization have become increasingly important in the trend towards sustainable manufacturing and throughout the Covid 19 pandemic, remote monitoring became an even greater necessity. ELSA's production increased due to increased sales throughout the pandemic, but its workforce remained the same. The partnership between Feelit and ELSA assisted in meeting its goals of increased production capacity, more fully maximizing the facility's production potential.

RESULTS

As a result of this successful pilot program, ELSA is planning to roll out the Feelit Solution to additional Steam Traps, as well as other industrial assets in their facility such as valves and heat exchanges. This will more effectively monitor ELSA's assets in the flow process and optimize overall production capability.



