– COMSYS –

CASE STORY

Enhancing Dairy Production Efficiency in Poland with Comsys ADF Technology

» **LOCATION**
Poland, Piątnica, Ostrołęka

» **INDUSTRY**
Dairy production

» **PARTNER**
Aniro

» **CUSTOMERS**
OSM PIĄTNICA Dairy Plants

» **TIMELINE**
2024

BACKGROUND

OSM PIĄTNICA in Piątnica and Ostrołęka are of Poland's respected dairy producers, supplying a wide range of products to domestic and international markets. Both facilities operate high-capacity production lines that rely on advanced frequency converters to ensure precision, consistency, and efficiency in their manufacturing processes.

To support their commitment to reliable and efficient operations, Aniro, Comsys' trusted Polish partner, collaborated closely with both dairy producers to address critical power quality challenges and ensure long-term performance of their electrical infrastructure.

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CHALLENGE

Routine monitoring and maintenance at OSM PIĄTNICA revealed excessive transformer temperatures, signaling a critical risk to the plants' operations. Transformers are essential for maintaining stable power delivery, and overheating can pose serious consequences, including:

- Accelerated insulation degradation, which reduces transformer lifespan.
- Increased likelihood of unplanned downtime, potentially disrupting production.
- Higher energy consumption and rising operational costs.

The root cause of the elevated temperatures was identified as harmonic distortions introduced by the widespread use of frequency converters on the production lines. While these converters are vital for ensuring precision and efficiency in modern dairy production, the harmonics they generated placed additional thermal strain on the transformers.

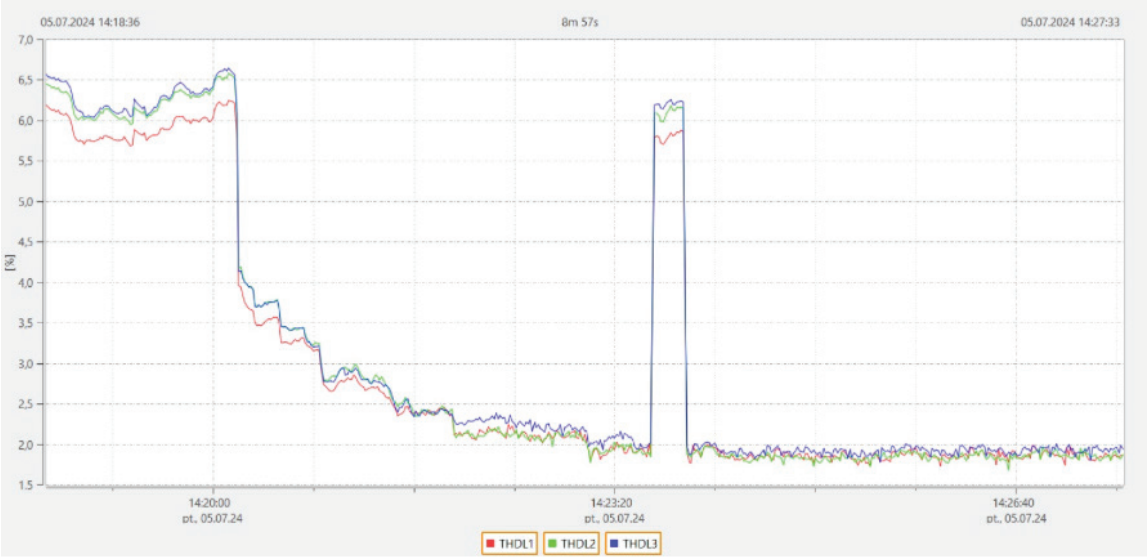
To prevent these potential risks and ensure long-term operational stability, an effective solution was urgently needed to mitigate harmonics and stabilize the electrical infrastructure.

SOLUTION

To resolve these issues, Comsys and Aniro collaborated to install three ADF P300-450A, two ADF P300-375A, and two ADF P300-250A active harmonic filters in the main switchboards supplying power to the production lines. These filters are designed to target harmonic distortions caused by frequency converters, ensuring improved power quality and network stability.

The ADF P300 active harmonic filters deliver dynamic, real-time compensation, adapting to fluctuating harmonic loads. Rated for capacities between for 250 to 450 amperes, they are perfectly suited for the high electrical demands of industrial facilities like OSM PIĄTNICA. By optimizing the power delivery system, the filters also reduce energy losses, improving the overall efficiency of the plants' electrical infrastructure.

Thanks to Aniro's expertise in power quality solutions, the installation process was seamless and non-disruptive to production operations. This close collaboration ensured the filters were fully integrated into the plants' existing systems with minimal downtime.



RESULTS

The implementation of the ADF P300 filters delivered immediate and measurable improvements for OSM PIĄTNICA.

- Transformer temperatures stabilized within safe operational limits, resolving the overheating issue and safeguarding the long-term reliability of the transformers.
- Harmonic distortion levels in the electrical network were drastically reduced, improving the overall stability and efficiency of the power delivery system.
- The production lines now operate more smoothly, reducing strain on transformers, frequency converters, and other connected equipment.

Long-term benefits include extended equipment lifespan, lower maintenance requirements, and reduced energy consumption. These improvements have significantly enhanced operational efficiency and delivered substantial cost savings for both facilities.

PRODUCT USED IN THIS CASE

ADF P300

- » HARMONIC ELIMINATION
- » DYNAMIC VAR COMPENSATION
- » LOAD BALANCING
- » MODULAR & SCALABLE DESIGN
- » FLICKER COMPENSATION
- » 208-690V NOMINAL VOLTAGE
- » CLOSED LOOP, OPEN LOOP & SENSORLESS CONTROL