Active Harmonic Filter

Quality Milk Dairy reduces harmonics with Merus™ A2 – Active Harmonic Filter

Challenge

A large quality milk dairy in USA had problems with high 5th, 7th and 11th harmonic currents. The harmonic currents were mostly caused by the variable speed drives located in the dairy production which is operating 24/7.

In order to eliminate penalties applied due the distortion in currents the dairy needed power quality equipment. A third party performed power quality measurements to help the dairy meet the IEEE 519-2014 standard limits. Based on the measurement data, an UL 508 certificated Merus™ A2 – Active Harmonic Filter was chosen to be delivered to achieve the standard requirements.

Solution

An UL 508 certificated Merus™ A2-series Active Harmonic Filters was chosen to solve the harmonic distortion. Merus™ A2-Series devices has extremely fast response time, a small footprint and very low audible noise level, thanks to the modern 3-level topology.

The sizing of the compensation system was based on power quality measurements data to meet IEEE 519-2014 standard limits. Based on the information, an A2-150A cubicle was delivered to the dairy and commissioning took place in March 2020. Production operates 24/7 and loading of production is never zero. The commissioning did not cause any downtime and it was done while the plant was operating normally.

Result

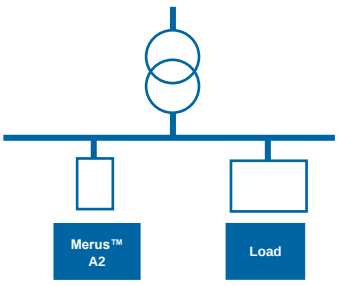
With the Merus™ Solution, 5th, 7th and 11th harmonics were mitigated with splitting the compensation capacity to all three harmonics to achieve lowest total harmonic distortion (THD) compensation capacity. The THD(I) decreased by 14.6% and the dairy meets IEEE 519-2014 standard limits. Improving the quality of electricity brings direct and indirect savings to the dairy. The most significant direct savings are that they do not have to pay penalties for poor power quality.

Application:
Dairy

Location:
USA

Power quality issues:
- High harmonic current distortion

Merus™ Solution:
- Merus™ A2-series Active Harmonic Filter



Customer Benefits:

- Fulfill the power quality standards and elimination of penalties
- Effective mitigation of harmonics
- Small footprint
- Low noise

Merus Power Plc

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