# Abstract

I have chosen to implement a frequency drive in a cooling installation with the goal of improving its efficiency. I find the process of cooling installations fascinating, which is why I selected it for my project.

During the implementation of the frequency drive, I made sure to preserve the traditional method of controlling the installation. This allows for a clear comparison of the two systems. The different control methods can be selected when the compressor is not running, ensuring accurate and meaningful results.

To facilitate a proper evaluation of the two systems, it was essential to ensure the original installation was functioning correctly. Consequently, I performed some necessary repairs and maintenance work.

Upon testing the implemented circuit, I observed that the compressor started and stopped less frequently compared to the original system. This reduction in frequency resulted in less peak currents during motor startup, which is beneficial for the overall system.

However, I encountered an issue during system startup when the water in the barrel was warm. It became evident that the water cooler in the installation was undersized. Consequently, the temperature in the condenser increased, leading to a rise in pressure. The pressure in the condenser matched the high pressure after the compressor, which is limited for safety reasons by the pressure switch. As a result, the cooling process stopped after a certain period of time. While the system was still capable of cooling the water, it took significantly longer. To enhance efficiency and overall performance, it would be advisable to upgrade the water cooler.