

Success story

Industry: Refrigeration

**PLC
+ HMI**
ALL IN ONE™



With such a challenging application, we felt we were pushing the limits for a PLC, but with well-structured programming we developed a very stable and reliable system.



Can't find a solution to fit your application? Modular PLCs offer customizable control

Summary:

ECH Engineering designs and manufactures refrigeration chambers. They needed a high functioning PLC to measure and calculate refrigeration duty.

They implemented a Unitronics UniStream modular PLC+HMI, which captures data about temperature, pressure and mass flow and processes it in real time.

ECH Engineering is a UK based engineering and research firm; they design, build, test and manufacture refrigeration technology. In particular, they specialize in creating refrigeration cabinets and control systems.

One of ECH Engineering's top concerns was the continuous metering of refrigeration duty. Refrigeration duty is a measure of how efficiently a refrigeration system is working, so being able to accurately track it was vital to ECH's research and development of new refrigeration systems. Unfortunately they were having trouble finding a single instrument that could measure the various different aspects of the complex refrigeration duty process.

ECH had already used Unitronics PLCs with great success for some of their other refrigeration applications, so they decided to try Unitronics again. ECH Engineering settled on the UniStream line of modular, all-in-one PLCs for their new refrigeration duty system. With blank-inch color-touch HMI panel, a powerful dual CPU and a range of I/O modules, the UniStream accurately measured temperature, pressure and mass flow data at an impressive sampling rate.

The UniStream was programmed to continually calculate the refrigeration duty using the data collected; this capability eliminated the need to download the data and use alternate software to run the calculations, increasing the efficiency of the entire process. Additionally, running all the calculations on the PLC, enabled ECH Engineering to view the results in real time both locally and remotely. The UniStream's trends and charting features help reveal warning signs of any possible problems.

Accurate measurements, fast data collection and real-time charting and analysis are vital to ECH's success testing and developing new cabinets. Not only do these features help them create efficient and effective refrigeration cabinets, they also provide data to compare energy saving measures. Moreover Unitronics UniStream PLC+HMI was more than capable of handling each step of the complex refrigeration duty process, saving ECH Engineering time and effort. The principle engineer, Edward Hammond explains the success they've had with Unistream, saying "With such a challenging application we felt we were pushing the limits for a PLC, but with well-structured programming, we developed a very stable and reliable system; this little PLC still has processing power to spare."

