

Global Controls Solutions, LLC

TIA Portal Application Awards - 2012

Company Name: Global Controls Solutions, LLC

Location of Application: Immokalee, FL

Key Business Activities: Automate and Retrofit Chiller Plants and Refrigeration Plants to Save Time and Money

Name of Application: Refrigeration Plant Control System

Description of Application: Control the sequence of operations in a collection of refrigeration compressors, evaporative condensers and evaporators to maintain the temperature requirements in the refrigerated spaces.

What challenges led you to look at a new solution?

Existing controls for the refrigeration plant were manual on / off switches. Four operators were required to operate the plant on a rotating shift basis. The only feedback for the manual controls were individual thermostats and thermometers. There was no scheduling or optimization of the system, resulting in inefficiencies and high cost of operation.

What Siemens automation products were chosen for this project and why?

For this opportunity we decided to try the TIA Portal Basic software with S7-1200 1214C, Analog Input signal module SM 1231 AI4 and KTP600 Basic Panel HMI. We chose the TIA Portal after attending a seminar hosted by AWC, our local distributor. The S7-1200 and Basic Panel fit the I/O and visualization requirements of the application and were cost effective enough to keep us in line with competition. Our competitors sell a simple front end screen that has pretty pictures of what is going on, but offers no central control or optimization capability.

We brought in all of the inputs and outputs of the existing hardware into the S7-1200, developed the code and PID loops to optimize coordination, and created informative screens to view and control the entire system from one HMI.

What features in the TIA Portal addressed your project challenges?

It was much faster to program in the TIA Portal (vs. STEP 7 v5.5 and WinCC Flexible). Before, whenever you configured the HMI, you had to import the tags from the PLC as an additional step. Now with the TIA Portal, once the tag is created, it is automatically available for use in the HMI. This saves time and prevents engineering errors. It was simple to tune the PID loops with the included loop tuner. We quickly determined the target limits to maintain temperatures, programmed the set-points into the PLC and easily integrated the HMI to display critical values and control functions.

How has your business improved?

We completed the program engineering in 40% less time than previous projects. The system we installed in December 2011 hasn't had a failure or call back and has allowed the customer to reduce the number of operators from 4 to 1. Now, with the TIA Portal, S7-1200 and Basic Panel, we are at a price point where we can sell the value of our solution and win against the low end competition.



