



CASE STUDY

INDUSTRIAL SHIELDS



CONTROLLING AN HVAC SYSTEM WITH ARDUINO BASED PLCS

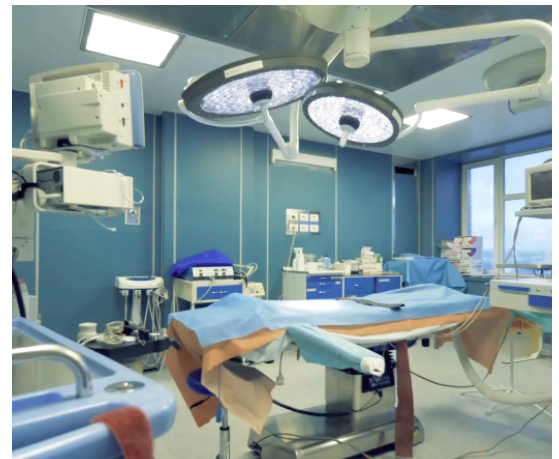
The purpose of this case is to show our customers that we can implement an HVAC system using Industrial Shields Arduino based PLCs addressed to hospitals, factories, pharma industry, etc.

The installation that we want to describe is composed of a control system with communication protocol in association with cooling and dehumidifier devices.

SUMMARY

As hospitals, pharma industry, food factories, etc. need accuracy in their climatic conditions -necessities of air conditioning and saving energy-, Industrial Shields has thought about an effective solution to guarantee a high performance technology of control and monitoring the climatic parameters using its Arduino PLCs.

Due to the open source programming software Arduino IDE , the real cost of the project will consist just in the initial investment of the devices because the software will not have to be updated and no payment of license is requested.



CASE STUDY



GOAL

The HVAC system has to control temperature, humidity and air quality, using a set consisting of: air conditioning equipment, humidifiers and dehumidifiers, fans, sensors, an Industrial Shields PLC and a panel PC. We have thought about this application due to the difficulty that involves keeping this kind of parameters in a certain range in hospitals, laboratories, pharma factories and all kinds of rooms where an exact regulation of climatic conditions is needed.

Apart from that, we need to save the energy used to operate these devices making them work just the time required.

CONCLUSION (HARDWARE)

To control these parameters, we just need the devices mentioned above. The PLC will get all the information from these sensors and it will be processed to actuate the air conditioning, the de/humidifiers and the flow system, depending on the values and the hysteresis that has the system. Due to the implementation of a PC panel, we can monitor the evolution of all the variables and make changes if necessary, activate and deactivate rooms, save historical data and send it by LORA to the cloud.

