

# PX025 "IMPLEMENTATION OF A PLC CONTROL FOR A REGRIGERATION SYSTEM WITH AN AKO REGULATOR" "

PRESENTATION OF THE PROJECTX-FINAL LEVEL 1.

# FOR USE IN THIS CORE AREA: general and particular.

- ▶ GENERAL / KNOWLEDGE:  
Automation,  
electricity and  
pneumatic
- ▶ PARTICULAR / ACTIVITIES:  
Assembly, PLC and  
Maintenance





# LEARNING OUTCOMES. Common to be shared.

- ▶ 1. ATMPL04 - Write PLC program for sequential control systems
- ▶ 2. PNMAS01 - Perform installation, configuration and test of a pneumatic systems.
- ▶ 3. ELYAS01 - Installation and commissioning of electrical components
- ▶ 4. ATMPL02 - Develop connections between the PLC and units of automated control systems, robots or SCADA systems.

# DURATION

- ▶ Theory: 20 hours
- ▶ Practice: 36 hours





# THEORETICAL OBJECTIVES AND ACTIVITIES

## OBJECTIVES

- ▶ 1. Pneumatic system
- ▶ 2. Basic Components Pneumatics
- ▶ 3. Elements Pneumatics and Electro-Pneumatic
- ▶ 4. Connection de Pneumatic and Electro-Pneumatic system
- ▶ 5. Electric Element in control system. Sensors and relays.
- ▶ 6. Design and connection electric components.
- ▶ 7. PLC, structure Hardware and software
- ▶ 8. Software in different language (KOP-AWL-FUP-SCL)
- ▶ 9. Building SCADA Systems.

## ACTIVITIES

- ▶ 1. Assembly of Pneumatics systems and circuits
- ▶ 2. Assembly of a circuit in Electro-Pneumatic systems.
- ▶ 3. Programming PLC and SCADA systems
- ▶ 4. Assembly of wireless elements in project
- ▶ 5. Make software program and simulation.
- ▶ 6. Testing the PLC program
- ▶ 7. Testing the complete installation

# PRACTICE.

## Brief description.

- ▶ The students use a small model of Refrigeration System with PLC available in the automation workshop of Xabec. Students have to wire the electricity and control components, to program the PLC and the Scada systems for the control of the Refrigeration System with PLC. The automated system controls the temperature and the fans of the model. This model is initially controlled by a regulator for Refrigeration Systems of the manufacturer AKO





## PRACTICE. Activities.

1. Studying the theoretical part pneumatic, electro-pneumatic and control elements. To do an oral assessment with the trainer.
2. Assembly of the pneumatic circuit.
3. To wire the electro pneumatic, sensors and relay circuits.
4. Studying the theoretical part of PLC and SCADA
5. To write the program with the instruction of PLC.
6. Building the SCADA and simulation in PLC
7. Integration of the pneumatic and electric circuit controlled by the PLC and SCADA.
8. Test the signals.
9. Dry run. Check mechanical part and adjust sensors.
10. Automatic mode.
11. Check the SCADA
12. Documentation: Electrical Soft, Mechanical documents and Handbook.