CASE STUDY
INDUSTRIAL SHIELDS

PRODUCTION MACHINE CONTROL

The open source M-DUINO PLCs control the production machine

About the customer

This is a company founded in 1992 which is dedicated to the repair and manufacture of spare parts and machines for textile machinery. It has an engineering department and manufactures special machines. In 2018, it expanded its offer of services to its customer portfolio with the incorporation of specialized staff in process improvement solutions, production, automation and other services focused on digital transformation within what can be considered INDUSTRY 4.0.

SUMMARY

Arduino industrial controllers allow the monitoring of complete machines or production lines in order to obtain relevant data. Some data can be monitored in real time using the PC Panel based on Raspberry Pi. The adjustment of specific parameters to be monitored will allow the activation of alarms and/or warnings.

Other data that require analysis and a historical summary, will allow decision-making related to predictive maintenance or continuous improvement. Through the Arduino PLC and the Raspberry Pi Panel working in tandem, control actions can also be carried out on elements of the machine or the production line itself.
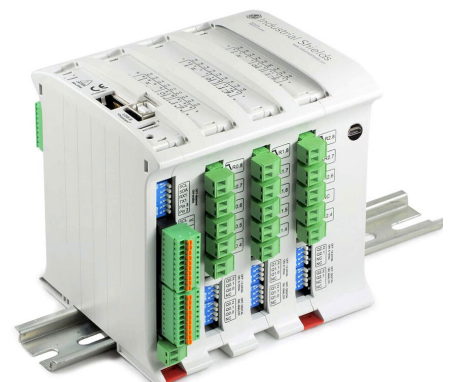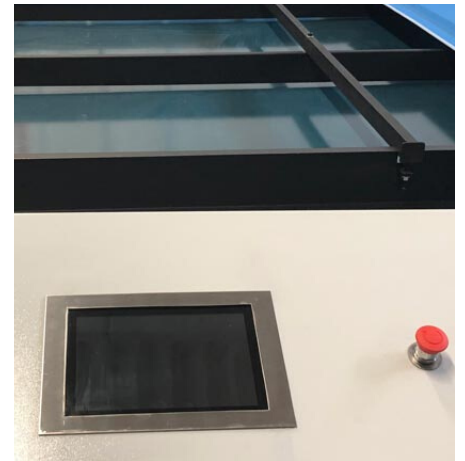
CASE STUDY

GOALS

The Industrial PLC controllers are connected via Ethernet to the production network. The use of this network allows the industrial controller to receive information from the different encoders and sensors to control the state of the machine. All data is sent to a MySQL database, where it is analyzed to control the performance and efficiency of the machine, consumption, etc. This MySQL database is connected to the resource planning tool for machine maintenance.

The company's goals are:
- Improving the efficiency of its production with an Industrial Controller Arduino
- Preventive and predictive maintenance

The installed software allows:
- Capturing data from machine sensors.
- Monitoring the machine with the indicators customized by the customer and receiving alerts sent via mail or mobile messaging.
- Receiving warnings/alerts of preventive maintenance according to established parameters in the production lines.
- Doing a predictive maintenance of the machines thanks to available historical data specific sensors.

Electrical Network analisis with PLC Arduino
Open source hardware for industrial automation, used on the client machine

The Raspberry Pi Panel PCs allow the customer to start monitoring data in real time.