

## Remote Washing Machine Pump Trigger

- (a) **Descrição:** Inside industrial environments, there is a functional problem when dealing with industrial machines and chemical refilling. This problem is given by how cleaning industrial machines are still built nowadays, as the time has passed this field kept its configuration technology outdated. The major problem is the way the chemical pump is refilled, most of the machines keep their reservoir deep inside the machine body, making it hard to see the chemical level and refill if needed. Also, leaving a gap for intruders to manually change the machine configuration to give bad results.
- (b) **Objetivo:** Developing a remote system for measuring the chemical level of the machine, and storing the data in a database for analysis.
- (c) **Contexto de aplicação:** In an industrial laundry scenario, there are big old machines that complete the cleaning process daily with a standard quality. Taking in care the main issue that is refilling the chemical reservoir, the work shifts are getting extended to deal with the demand. To solve this problem, a Internet of Things device will be developed to read the chemical reservoir level, trigger the chemical pump to refill the liquid, and send the data collected to a database for further analysis.

User application: Gives the user the possibility to see the actual chemical level, trigger the pump if considered needed, and analyse the chemical level changes during the day.

(d) **Considerações:**

- Using the esp8266 for connecting to the wifi and from mqtt to trigger the chemical pump and see the chemical level.
- Store data in InfluxDB.
- Show a dashboard with information for analysis.

(e) **Recursos:**

- O aluno deve utilizar os conceitos e ferramentas que foram apresentadas durante as aulas práticas e teóricas de IdC: protocolo MQTT, ESP8266 e sensores, Node-RED, base de dados (InfluxDB), serviços REST e mecanismos de segurança.
- Outros recursos/materiais ficam a critério do aluno.