CASE STUDY

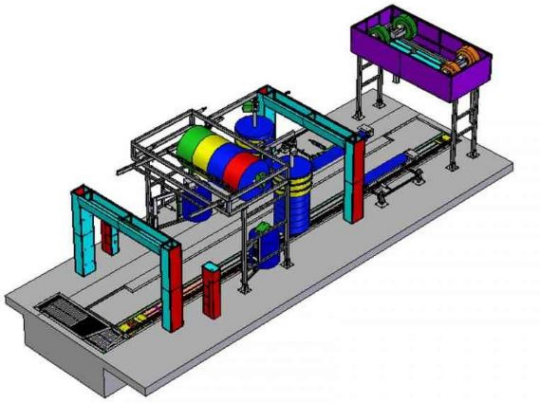
INDUSTRIAL SHIELDS

AUTOMATIC CAR WASH

In this use case, an automatic car wash process is implemented. For this purpose, a PLC of the MDuino family has been used and a set of sensors and actuators which are described below.

When a Car enters the hall, a certain sequence has to be followed automatically.
Steps are:
1) Soaping
2) Washing
3) Drying.

SUMMARY



Car washing is simple activity done in order to keep the exterior of the car clean. Mostly it is done manually in automobile garage or service centres of automobile companies.

This manual way of cleaning car results in more consumption of water, manpower and time.

The automatic car washing system explained in this case study minimises the use of water and also manpower requirement. Our car washing system utilises control using PLC.

To detect the car automatically, load cells can be used, or any other sensor such as Infrared Sensor can also be used.

Soaping, Washing and Drying are performed for a particular time, hence to generate time delay for these outputs become mandatory, so three different timers are used, but you could also have chosen the use of motion sensors to detect when the vehicle reaches each phase

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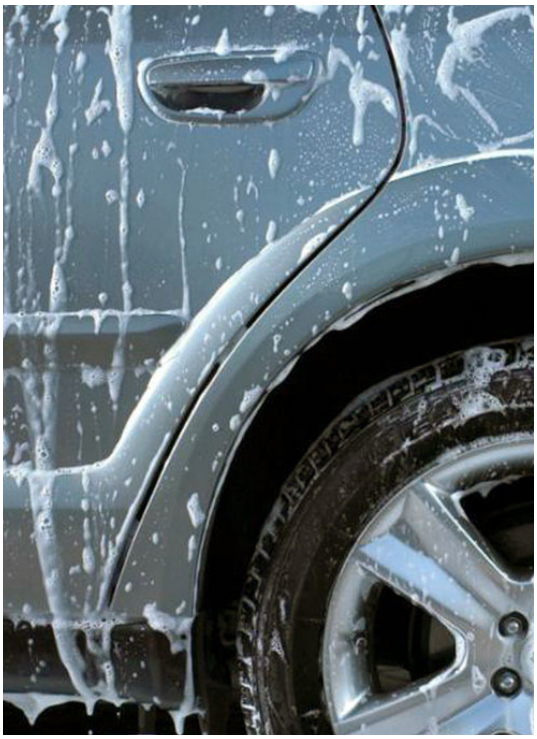
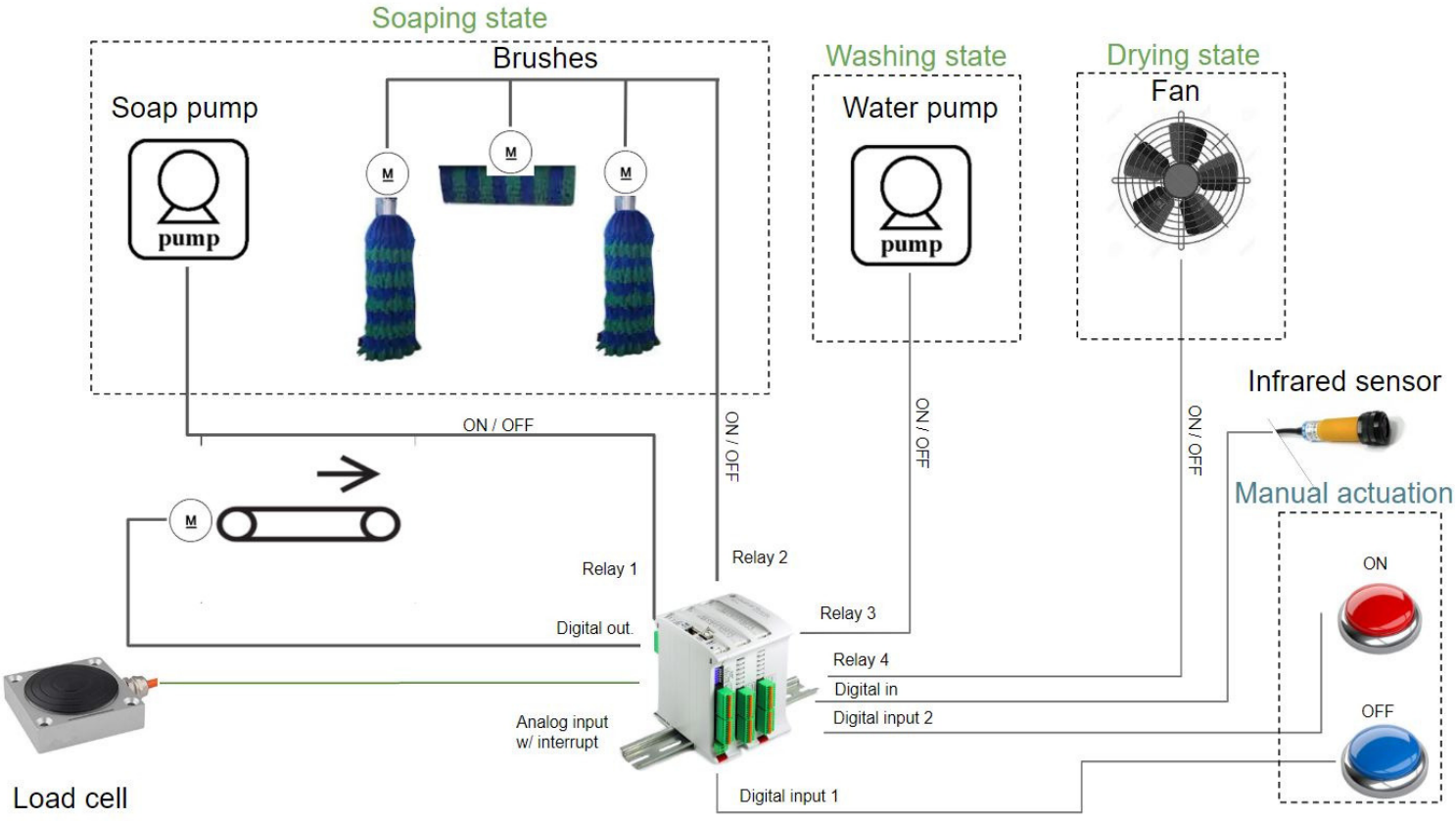


FINAL SOLUTION (HARDWARE)

At the beginning of the circuit, when the load cell detects a weight similar to that of a vehicle, it activates the motor that controls the conveyor belt and begins counting the soap, washing and drying timers.

For the soaping the PLC acts on the soap dosing pump, once the time is completed, the washing pump is activated. In parallel, a relay that controls the 3 motors of each brush is activated to scrub the car with soap.

Finally, when the third timer (the drying one) is activated, the fans are activated.
To finish, the conveyor belt takes the car to the end of the route and when it is detected by the limit switch, the entire process is closed. Manual on / off buttons have been installed to stop or turn it on, when required



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