Instituto Superior de Engenharia do Porto

Terms and Conditions for the implementation of watering control system.

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Terms and Conditions

Technical specifications

General overview

A. Implement a monitoring system for the water flow regarding the water table, as well as the water hole and the watering system.
B. This monitoring should be implemented by the use of sensors (position and humidity) and through the aid of a general controller.
C. The system should regulate the volume of water in the cisterns, so that:
    1. The cisterns are full when the watering begins (night-time);
    2. During Winter, the cisterns should be full once a week;
    3. Guarantee that the volume of water is enough to insure the pump maintenance rate of the water hole;
D. In case of emergency, a sound alarm is set to go off, turning on immediately the electro-valve connected with company water (bought water).
E. The electro-valve that connects to the company water is already installed.
F. There are considered 2 states of emergency:
    1. In the case of fire. When the fire alarm is set (already installed);
    2. In the case of water level of the cistern is bellow de necessary for a watering.
G. For an external control (a web page) of the system, the access to a management application should be contemplated.
H. The sprinklers are already installed and can be divided in 2 categories:
    1. Rain Bird 5004 - Reach: 7,5 a 15 meters and Flow: 0,17 a 2,19 m3/h. - 246 sprinklers.
    2. Rain Bird 3504 - Reach: 4,5 a 10 meters and Flow: 0,12 a 1,04 m3/h. - 114 sprinklers.

Functional requirements

A. The system and its' components should be easily managed and configured.
B. The system and its' components should be user friendly and intuitive.
C. The system should minimize its' maintenance needs.
D. The system should allow for a remote control.
E. The system should be scalable.
F. The system should use to maximum extent possible the means and infrastructures already built.

Technical requirements

A. The controller should work in a mix of two modes, online and offline. Its' regular use should be in offline mode, but the controllers should have the possibility of a remote access (online), prioritizing offline management.
B. The system should allow for a remote control (Ethernet).
C. The supplier should have the technical skills in terms of hardware to maintain and develop;

Map of the watering regions/sectors