



PORTABLE WATER SPRINKLER SYSTEM

AMINUDDIN BIN ROSLAN
MUHAMMAD AMIRUDDIN BIN ANUAR

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FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

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ABSTRACT

The Portable Water Sprinkler System is used to automatically watering plant. This project is based on microcontroller and sensor operation. The microcontroller used is ATMEGA 328P that attach to Arduino board and the sensor used is a soil moisture sensor. The sensor detects the moisture content of the soil and sent the signal required to Arduino board. If the moisture content of the soil value is lower than the trigger value, the pump will be triggered for sprinkling process. Otherwise, the pump will not be triggered. Then the water tank used to store the water and connect it to water pump. Water level indicator also provided to detect the level of water in the tank. When water in the tank is full, green LED will light up. When water at half full, yellow LED will light up. Red LED will light up when water level in the tank about to empty or low. This Portable Water Sprinkler System will helps for those who got small gardent in their housing area. Their plants will not be dry if no rain when they going out to somewhere else in few days. Users can have different size of the water tank according to their convenient. The bigger the water tank, the longger the systems can be operated and users will not worried about their lovely plants.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

The current sprinkler system that commonly used in every residential area is the automatic irrigation sprinkler system. The primary disadvantage of this type of sprinkler system is the cost. These systems can be quite costly depending on the size of the property. Furthermore, certain portions of the lawn will have to be dug up to install pipework and attach it to the plumbing system of the home. This can equate to days or weeks without the use of the yard. Afterwards, the landscaping will have to be repaired. It is best to install an irrigation system prior to the installation of sod or extensive landscaping because some of it will have to be torn up. Homeowners who already have pristine yards may be turned off by this reality. Even the most efficient sprinkler systems can have their pitfalls. Wind can cause damage on sprinklers, sometimes water will be directing in the wrong direction. Underground pests or insects may damage house water-delivery systems, resulting in water pooling or broken parts. The repairs to fix an irrigation system can be much more costly than replacing a damaged garden hose.

Hence, the idea to make a portable water sprinkler system came up that are low in cost and portable. Using sensor for automatic operation of the sprinkler and it is portable where it will have its own water tank. It does not need to be installed inside the lawn as it has its own water tank, thus avoiding the soil and landscape from being damaged.