HICS

SMART HOME IRRIGATION SYSTEM -BY TEAM SMARTGRASS

Team: Smart Grass

Members:
Billy Haile Mariam
Jeremiah O'Connor
Tung Vo
Gautam Adhikari

User Manual

OVERVIEW

HICS is an intelligent home irrigation control system that utilizes soil moisture sensors to measure the amount of moisture present in the user's lawn and use this information to water the lawn in an efficient way. The rain sensors and the temperature sensors help prevent watering when unnecessary. The sensors, hardware and their proper integration and programming make HICS a machine that's smart enough to save people time, effort, and money on their home

PURPOSE OF MANUAL

This manual contains basic information about the HICS that a user can use for installation and maintenance.

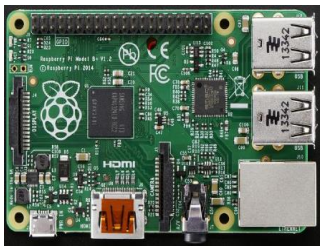
HARDWARES:

HICS Box (Top Layer)

HICS Box (Bottom Layer)

Hardware used:

Raspberry pi (1)

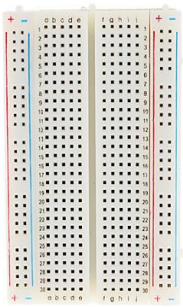


Arduino Module (2)

Relay Module (3)

AC Power (4)

Bread Board (1)



Fan (1)

Ethernet cable (1)

Switch (1)

Power Strip (1)

Housing (1)

INSTALLATION GUIDE

HICS is very easy to install. HICS can be mounted on any places. The most common place to mount the HICS would be the back yard of a house. For house owners with existing sprinkler system, HICS can be replaced with the existing sprinkler system. Here are the steps to install HICS.

- Take out the existing sprinkler system
- Mount HICS on the existing location
- Plug the power cable.
- Plug the Ethernet cable to the Raspberry pi module.
- Plug sensor cables to sockets
- Plug valves cables of existing irrigation to the socket
- Install the soil moisture sensors for each zone
- Install the rain sensor out door and plug it to rain sensor socket

* We highly recommend that you get professionals for the installation of HICS to avoid any complications

WIRING

Proper wiring is necessary for the HICS.

It's highly recommended that you use a power controller to prevent damage to the HICS.

The wires going in and coming out of HICS must not be loose and bare. Make sure there is nothing pressing or disturbing the route of wire to prevent any possible hazard due to electricity.

TROUBLE-SHOOTING

For any problem that you encounter, turn off the HICS and turn it back on after a minute so that the module can re-boot the necessary files.

Following are few basic scenarios and solution to the problems you might encounter:

- You cannot login to the web page.
  You may have entered wrong password
  Click on forgot password and reset the password.
- There is no reading from few sensors.
  The wires connecting the sensors are not connected
  The sensors are bad and needs to be replaced
- There is no reading from all sensors.
  The Internet connection to the Raspberry pi module
- There is no power on the HICS.
  Check the power/cable.
- There is no water when the system status is Active
  The water supply to the valve is not on.

CONTACT US

Website:

http://smartgrass.azurewebsites.net/

Email:

smartgrass@uta.edu

Phone number:

(817) 178-8718

Location:

Engineering Research Building
Room 208
University of Texas At Arlington
Arlington TX 76019