EAST WEST UNIVERSITY

Water Sensor Connection Using Arduino Uno

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Introduction

In today's lab, our group tried to build a basic water level sensor system with an Arduino Uno and a water level sensor. The system will monitor different water levels. The water level status can be seen in the Serial Monitor for real-time monitoring.

This system is used in many real-world applications like tracking overhead water tanks, flood detection, automated irrigation and so on.

Components

Hardware:

- Arduino Uno
- Water Level Sensor
- Breadboard
- Jumper Wires
- USB Cable

Software:

- **Arduino IDE** - *https://support.arduino.cc/hc/en-us/articles/360019833020-Download-and-install-Arduino-IDE*

Circuit Diagram

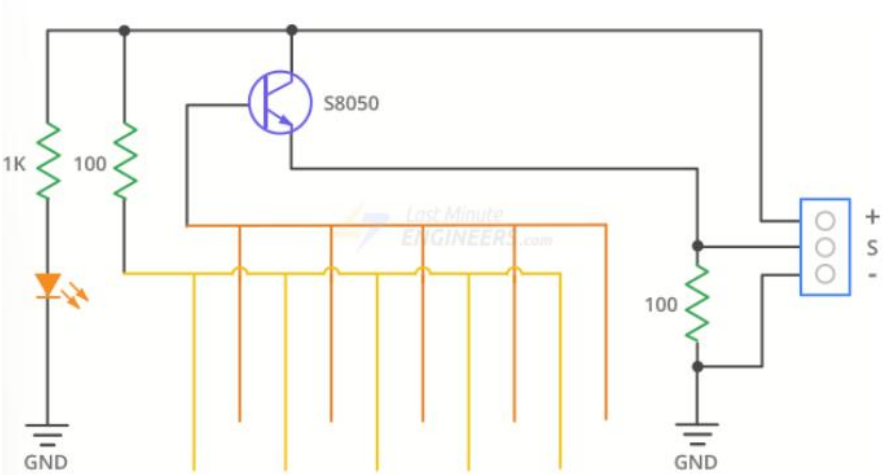

Figure 1

- The **Signal (S)** pin of the water level sensor is connected to the **A0** analog input pin on the Arduino.

- The **VCC** and **GND** of the sensor are connected to Arduino **5V** and **GND**, respectively.
- Optionally, the **VCC** pin can be connected to a **digital pin (D7)** to allow software-controlled power to the sensor.

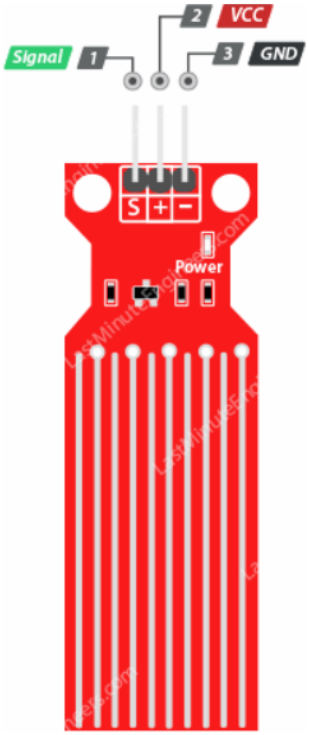

Figure 2

Working Principle

The sensor level provides an analog voltage that depends on the level of water covering the sensor strip. The more depth the sensor is submerged, the bigger the analog reading.

Using the analogRead() function on the signal pin, the Arduino reads this value and prints it out in the Serial Monitor. The values range from 0 to 1023 and can be interpreted into different levels of water.

Code Explanation

- sensorPower (pin 7) is used to supply power to the sensor only when taking a reading.
- sensorPin (A0) reads the analog signal.
- readSensor() powers the sensor momentarily, reads the analog value, then shuts it off for energy efficiency.
- The value is printed in the Serial Monitor for real-time observation.

Results

- The analog readings from the water level sensor were successfully captured and printed to the Serial Monitor.
- Readings increased as the sensor was submerged in more water.
- The setup efficiently demonstrated reading analog sensor data and managing power through digital control.

References

1. **Last Minute Engineers: Water Level Sensor with Arduino**