Summarized Final Results

The Keystudio KS0048 Water Level Sensor is designed to detect the presence of water or the level of water. It is an analog sensor that runs on DC 5V and an operating current of less than 20 mA. It works well in humidity levels ranging from 10% and 90% and temperatures ranging from 10℃ and 30℃. As seen in my data it has a high level of repeatability. However, the measurement levels will change if the contents of the water changes. Due to fluctuating impurities in different types of water it is no suggested to expect the same readings if different types of water are measured at the same level. The amount of measurement drift from the sensor is relatively small. The Water Level Sensor reaches a steady state very quickly. My data shows that outside of water (completely dry) the sensor will drift 0% if left alone for a long time. While in the water the drift is roughly 3.88%, meaning that one would not have to recalibrate the sensor very often or at all if it was left alone for an extended period. The sensor's range is from 0 to whatever reading the sensor outputs when all the traces are fully submerged. In may case the max range was around 673, but this value is expected to change with different water sources. From my readings I determined the sensor to have a good rate of linearity. From my data I was able to determine a function: $y = 142.8x - 53$. While not perfectly linear it still gives a highly linear response.

Discussion

It is suggested that whoever uses this sensor should calibrate it based on their water. It can be used for a few novel uses such as detecting if a sump pump's water level is too low or too high. You could also use this sensor to detect leaks in appliances like sinks, water heaters, or washing machines. Because it can operate in up to 90% humidity you can also use this sensor as a rainfall or dew detector.