The following project specifications were finalized during the water level sensor development:

- Reliable/repeatable measurement characteristics
- No false alarms
- Measurement of at least 4 water level increments (for example one sensor that detects at 0.5cm,, 2cm, 5cm and 10cm of water)
- The measurement heights are configurable – ie, the sensor can be built with measurement readings also at 1cm, 10cm, 20cm, 50cm) with same interface and output values
- Sensor should be reusable and can measure more than one water intrusion event.
- One digital or analog (0-2.5V) output signal
- Small cross section (<6.25cm^2) as it has fit into limited space
- Small power usage (<1mA @ continues 12 VDC)
- Inexpensive and simple to construct
- The original specs had required for the sensor to be powered from 5-30 VDC and also offered availability of RS-232 communication port. We have been given access to regulated 5 VDC power supply and the access to RS-232 communication port has been taken away.

One more design limitation we found, after presenting our first prototypes to Axys Technologies, was that the stainless steel or aluminum hull has the negative terminal of the buoy power system attached to it.