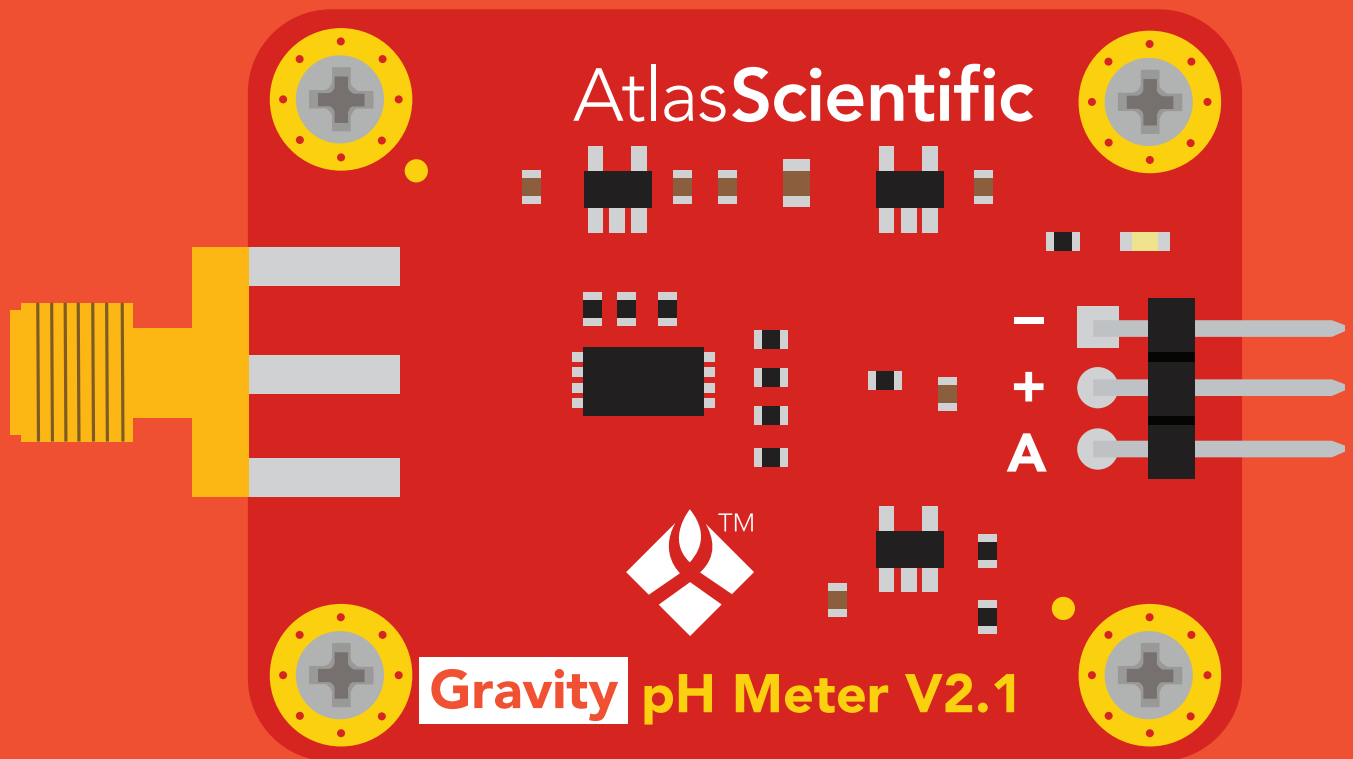


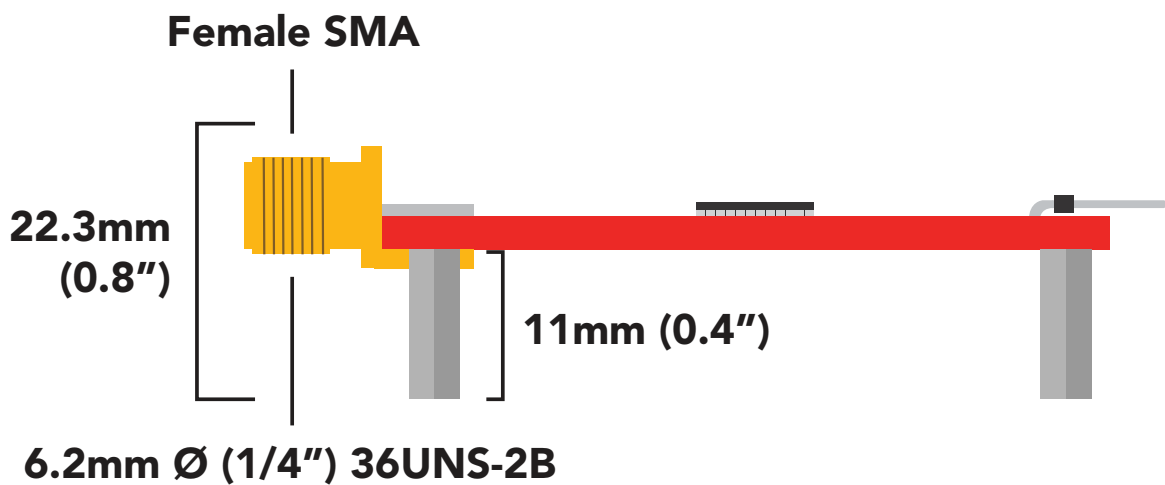
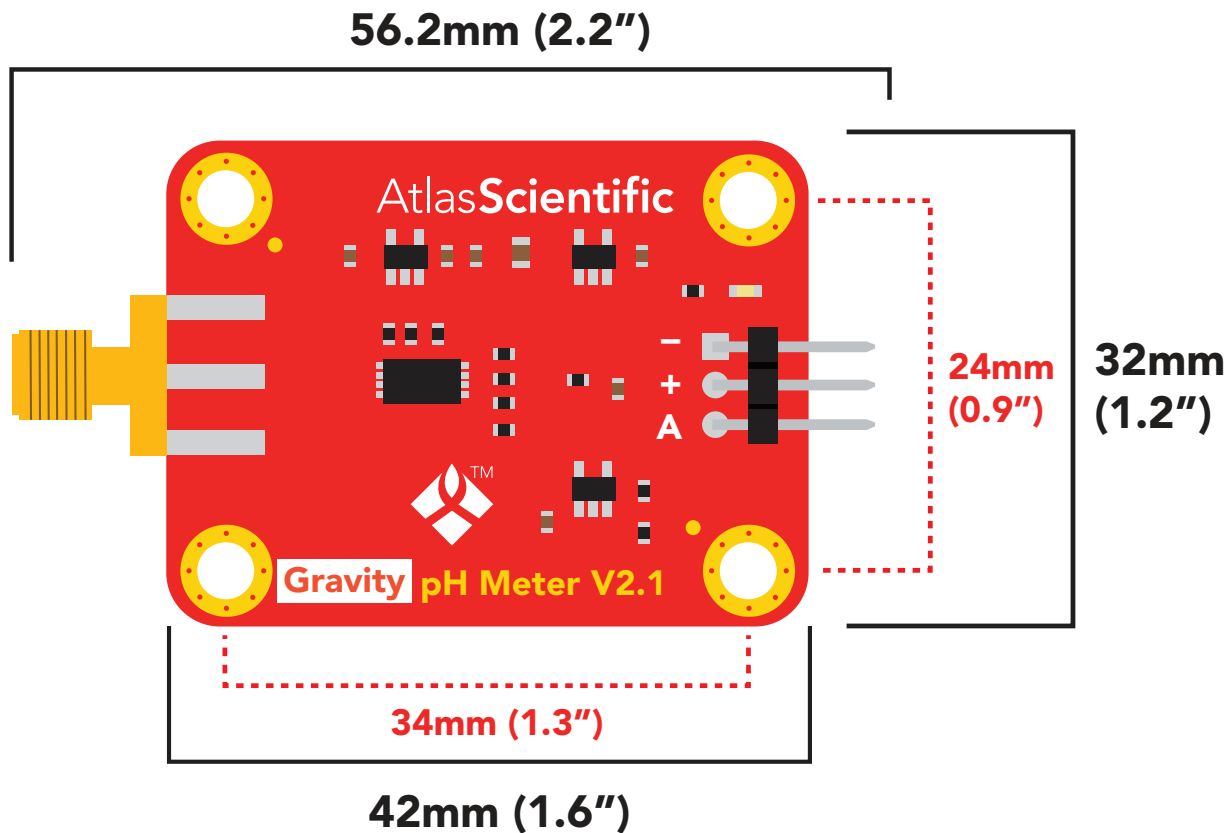
GravityTM

Analog pH Sensor / Meter



PATENT PROTECTED

Gravity dimensions



Power consumption

5V = 3mA
3.3V = 3mA

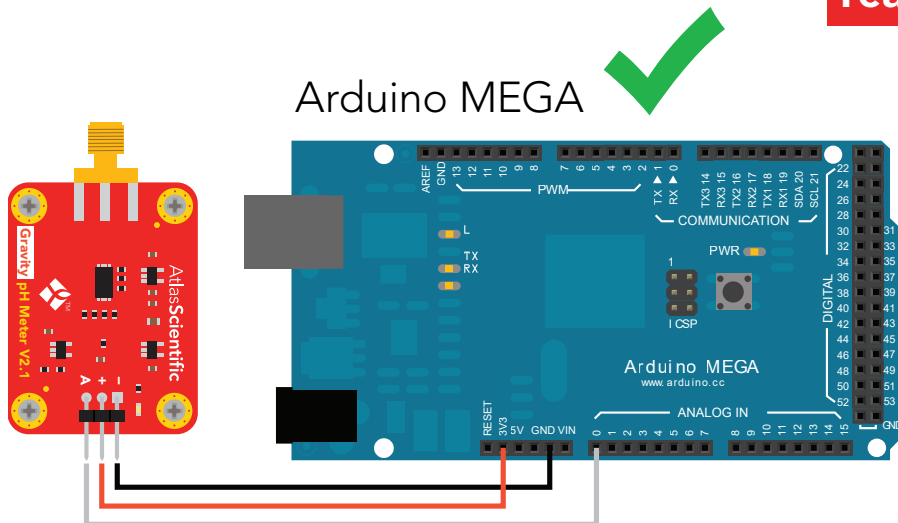
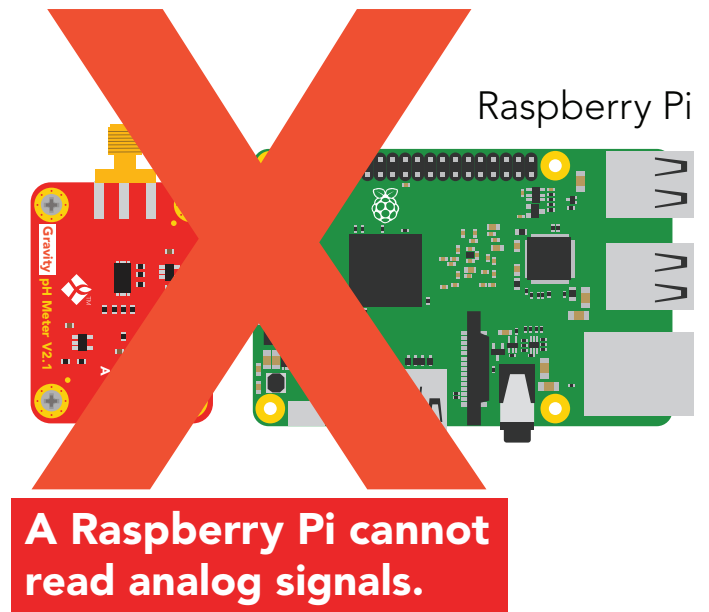
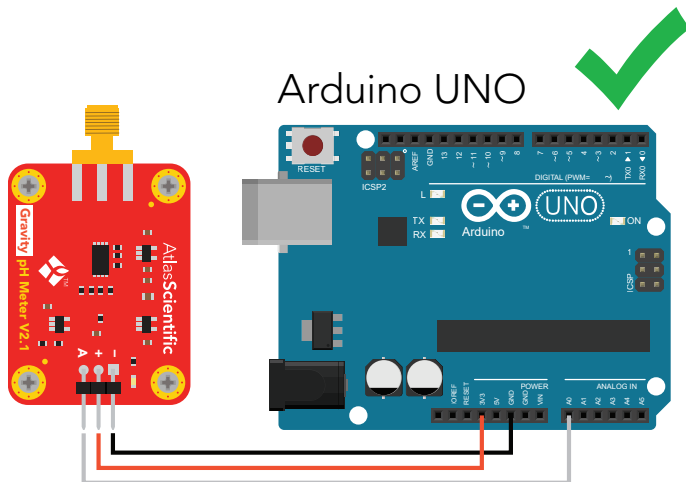
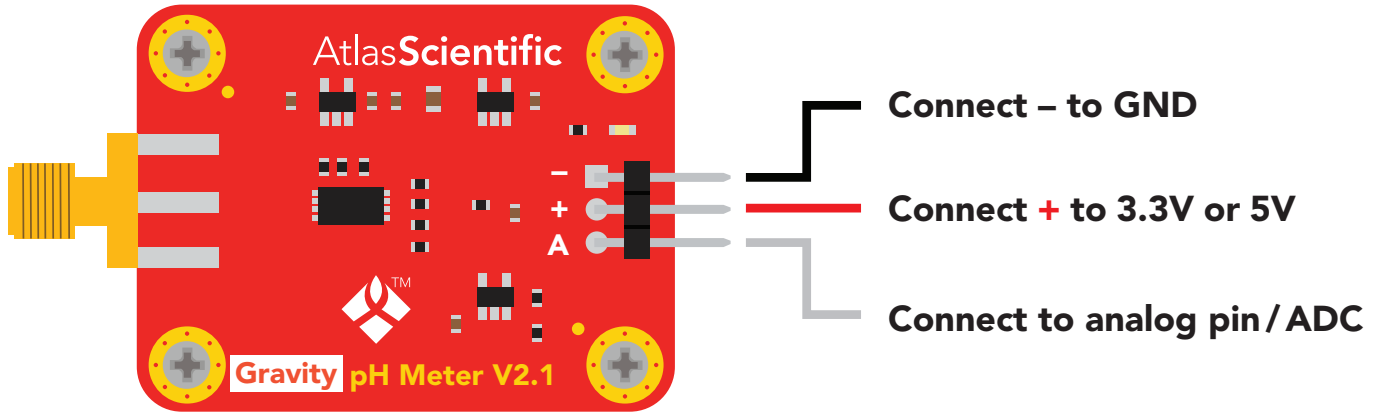
Absolute max ratings

Parameter	MIN	TYP	MAX
Storage temperature	-65 °C		125 °C
Operational temperature	-40 °C	25 °C	50 °C
VCC	3.3V	5V	5.5V

The Atlas Scientific Gravity™ Analog pH Sensor / Meter is a low-cost solution specifically designed for

- **Students / education**
- **Proof of concept designs**
- **Moderate accuracy applications**

Connection pins

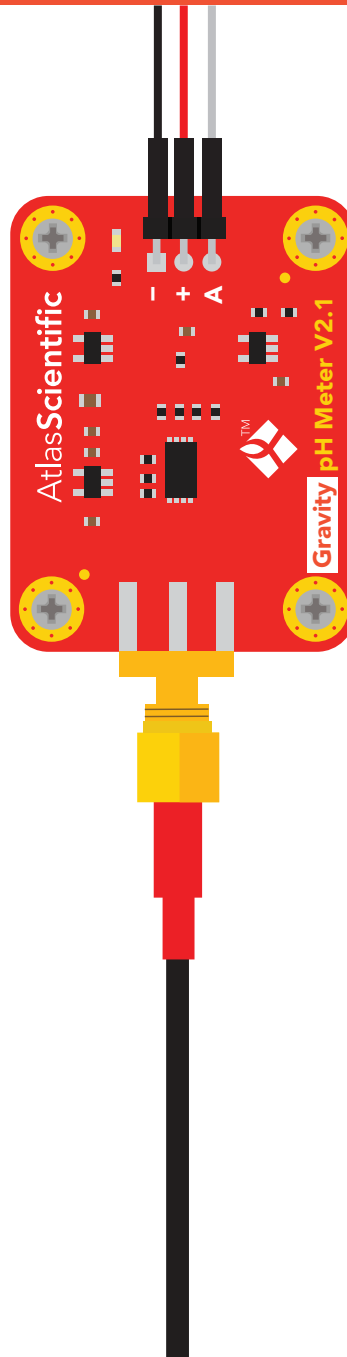
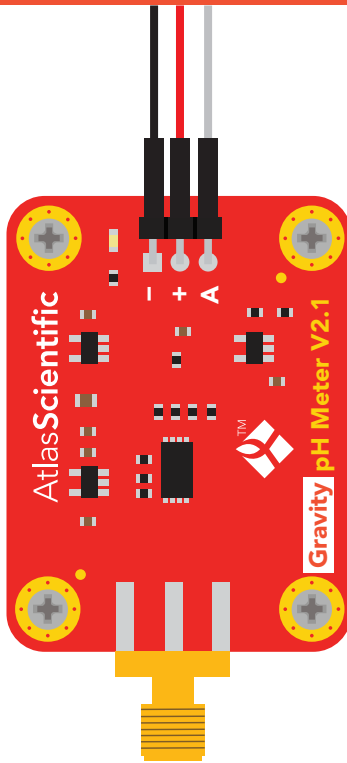


Converting the analog signal into pH

The Atlas Scientific Gravity™ Analog pH Sensor / Meter will output a voltage from 3.00V to 0.265V.

Equation to convert voltage to pH

$$pH = (-5.6548 * voltage) + 15.509$$

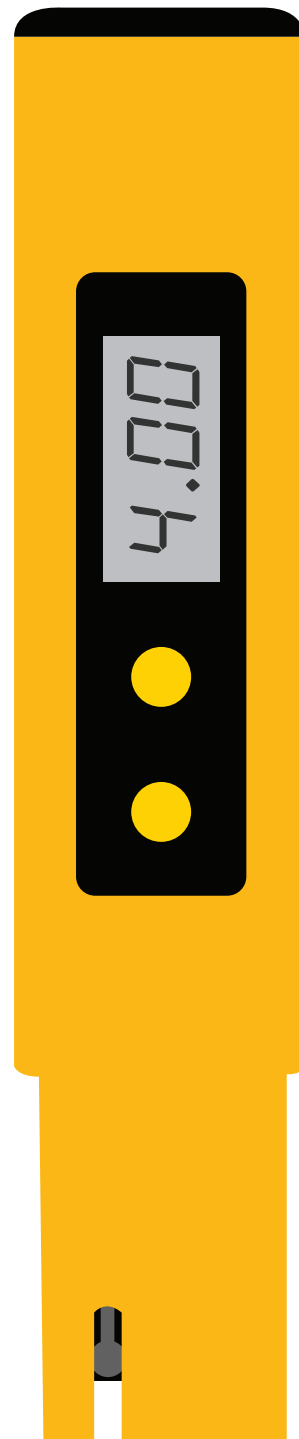
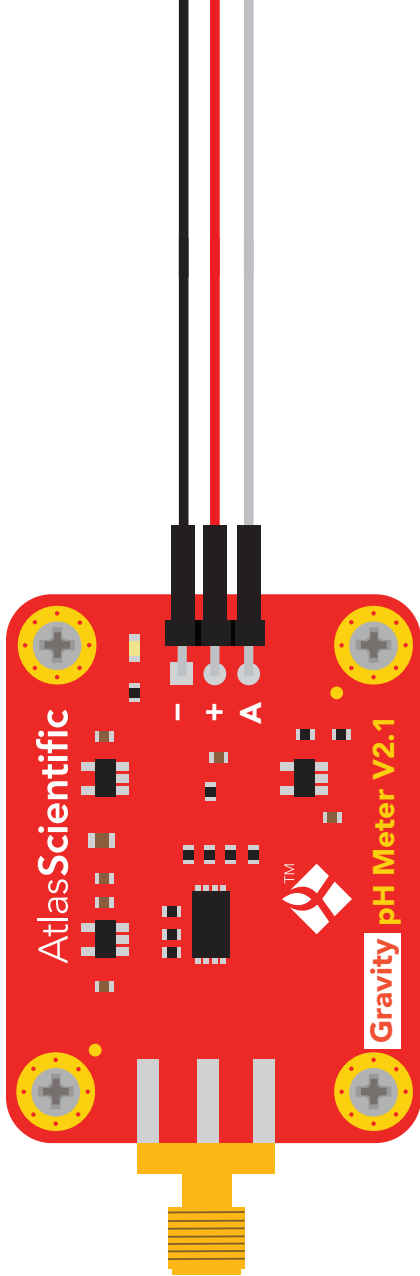


Tolerance $\pm .015V$

pH **Volts**

0	2.745
1	2.570
2	2.390
3	2.210
4	2.030
5	1.855
6	1.680
7	1.500
8	1.330
9	1.155
10	0.975
11	0.800
12	0.620
13	0.445
14	0.265

No probe = Unpredictable



Accuracy

+/- 0.2

Life expectancy

~10 years

Accuracy

+/- 0.2

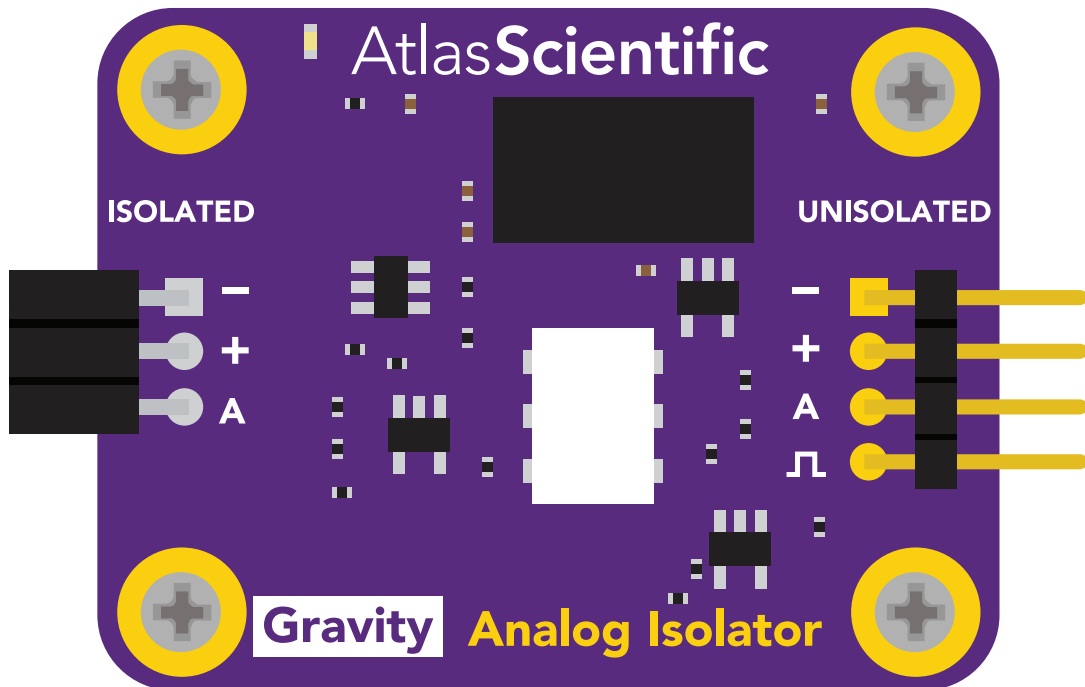
Life expectancy

~6 – 10 months

Electrical isolation

The Atlas Scientific Gravity™ Analog pH Sensor / Meter is a very sensitive device and is susceptible to electrical interference from external sources. This interference is caused by micro-voltages entering the water from unnatural sources such as pumps, solenoid valves, or other probes / sensors. When electrical interference is affecting the pH readings, it is common to see rapidly fluctuating readings or readings that are consistently off. To verify that electrical noise is causing inaccurate readings, place the pH probe in a cup of water by itself. The readings should stabilize quickly, confirming that electrical noise was the issue.

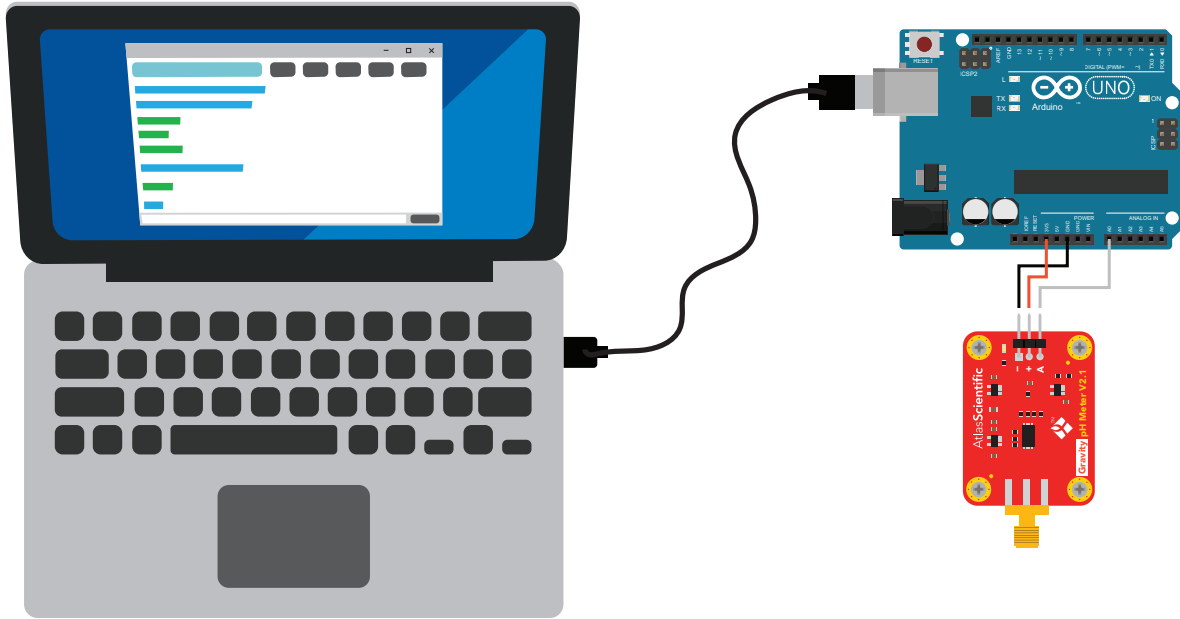
To stop electrical interference from affecting the readings, Atlas Scientific **strongly recommends** using our [Gravity™ Analog Isolator](#). It is 100% effective at preventing electrical currents in the water from entering the probe and interfering with the readings.



Refer to the [Gravity™ Analog Isolator datasheet](#) for more information about how the isolator works and how to use it.

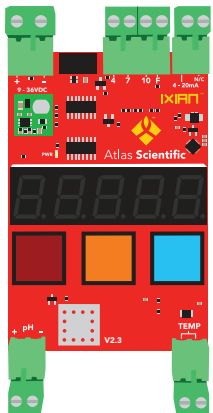
Calibration

Using the [free downloadable arduino software](#), one, two or three-point calibration can be performed. The calibration procedure requires standard pH calibration buffers (pH 4, 7, and 10). Any brand of pH quality calibration buffers can be used.

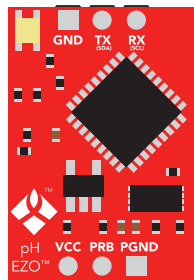


Temperature compensated readings

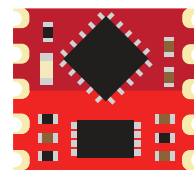
The Atlas Scientific Gravity™ Analog pH Sensor / Meter lacks the accuracy necessary for temperature compensation to have a meaningful effect on the readings. If more accuracy is required, Atlas Scientific offers a wide range of embedded pH monitoring products that are significantly more accurate than this device.



IXIAN-pH™
pH Transmitter



EZO-pH™
Embedded pH Circuit



OEM-pH™
Embedded pH Circuit