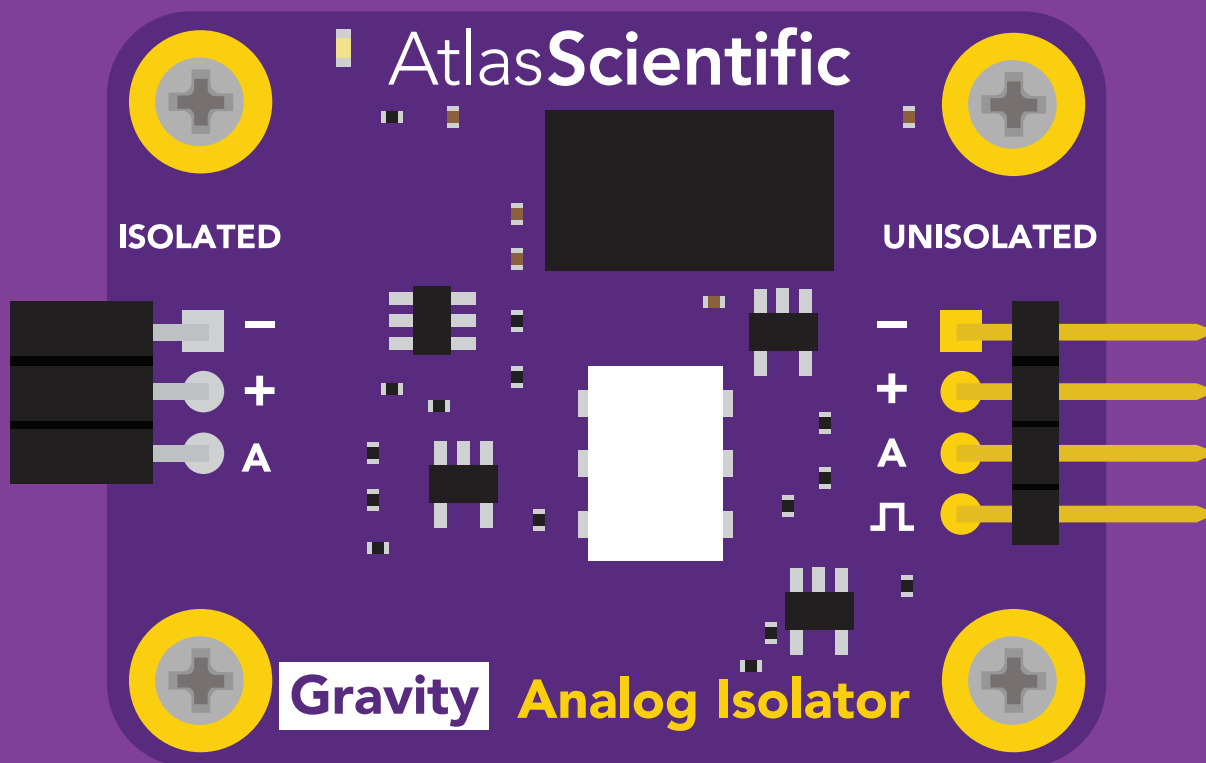
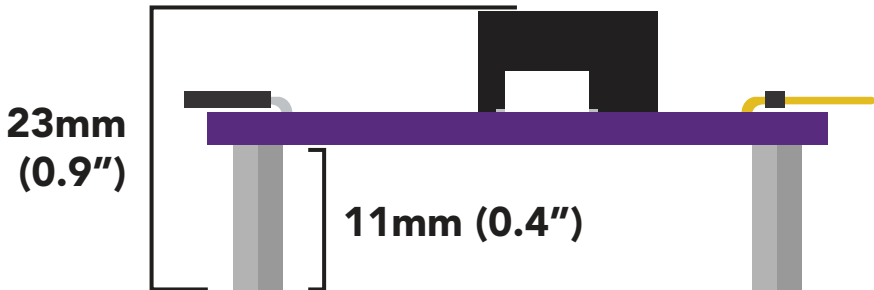
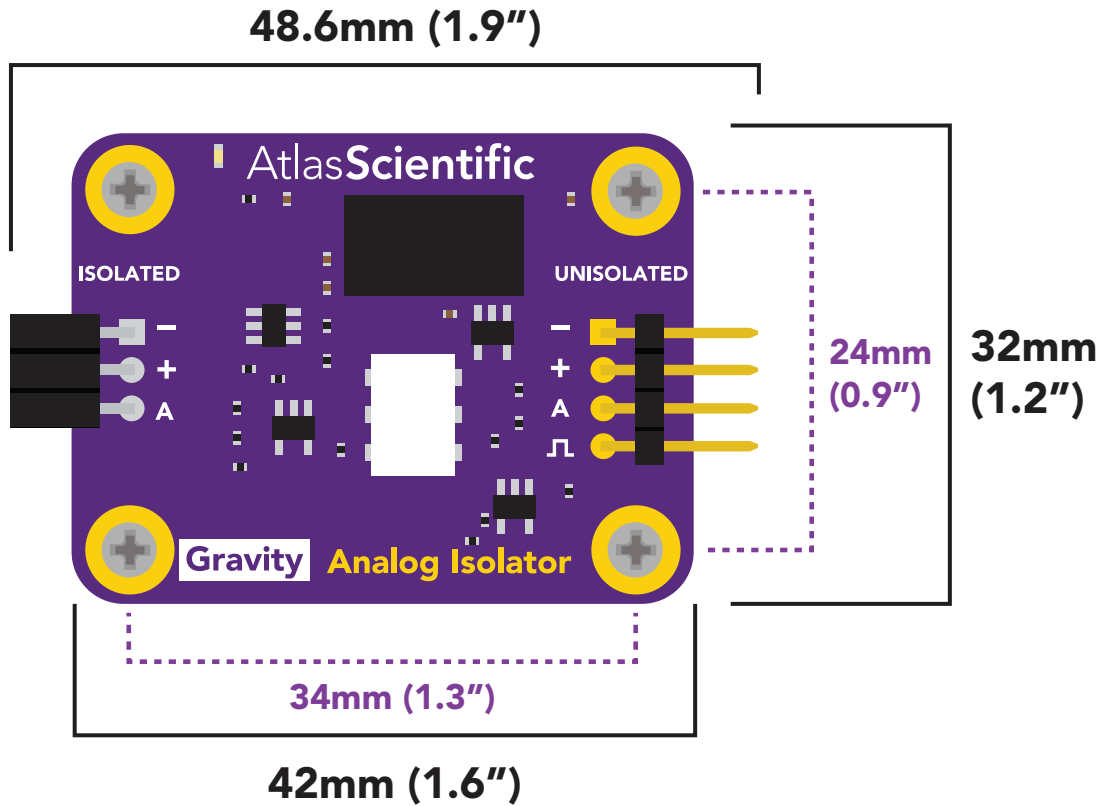


Gravity™

Analog isolator



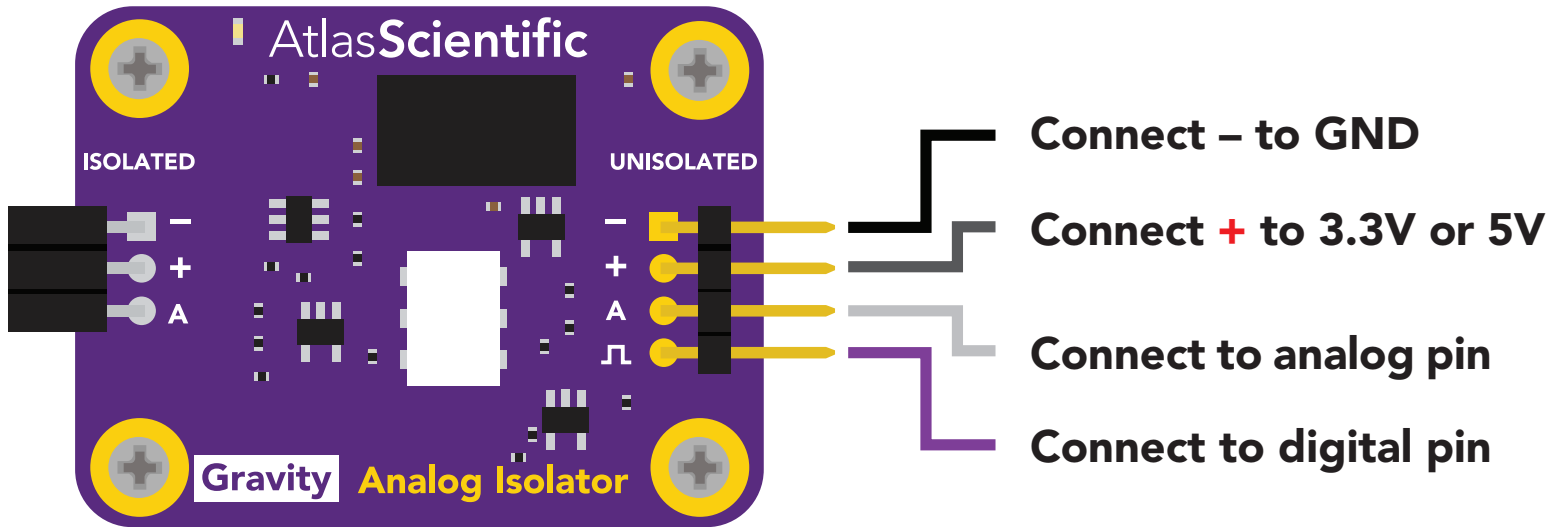
Gravity dimensions



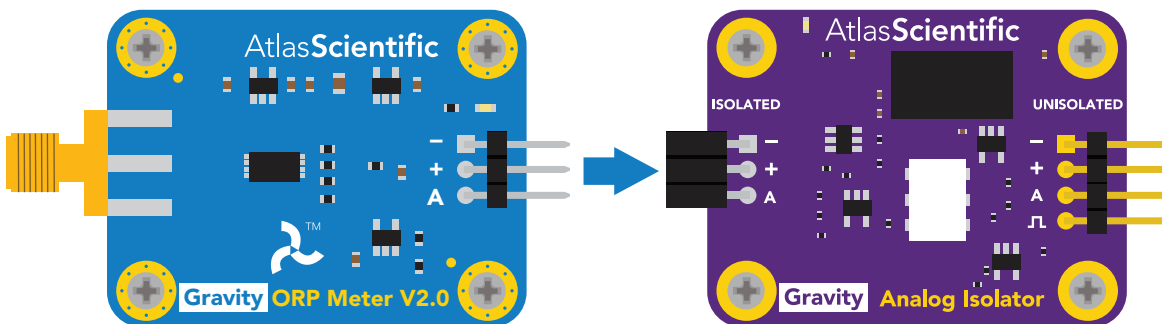
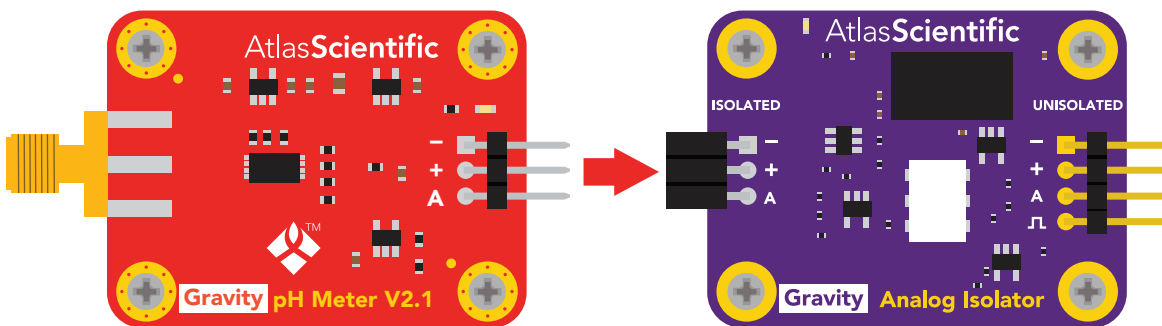
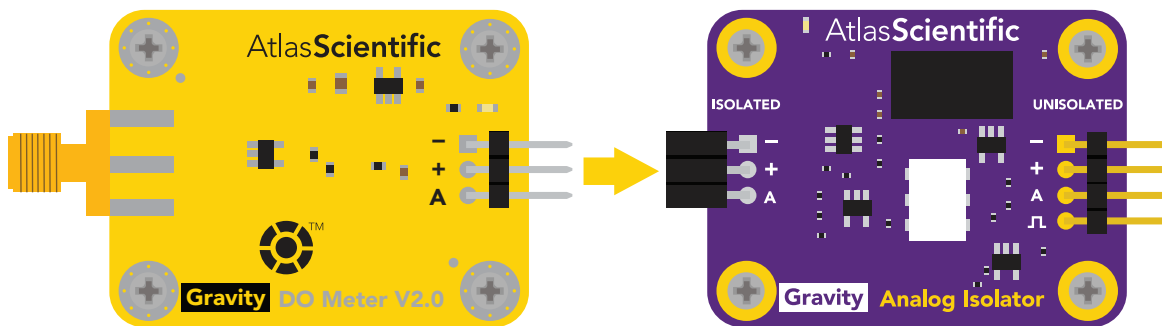
Current consumption

		5V	3.3V	
23mA 5V	15.7mA 3.3V	Gravity™ Analog pH	26mA	18.7mA
		Gravity™ Analog ORP	26mA	18.7mA
		Gravity™ Analog D.O.	26mA	18.7mA

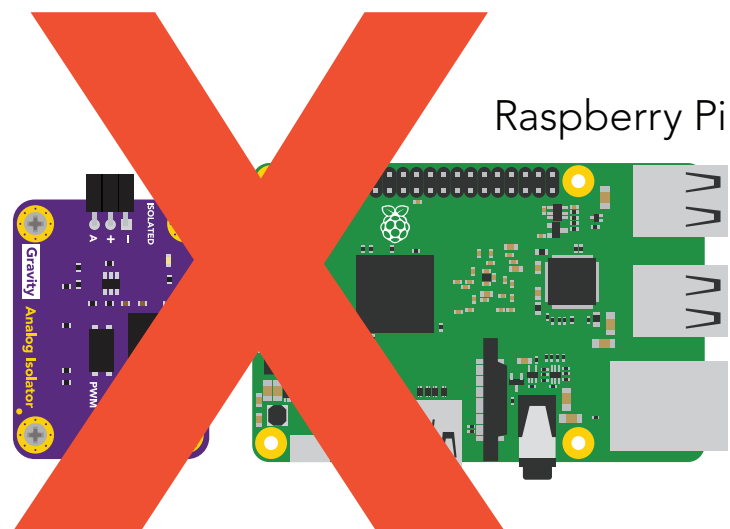
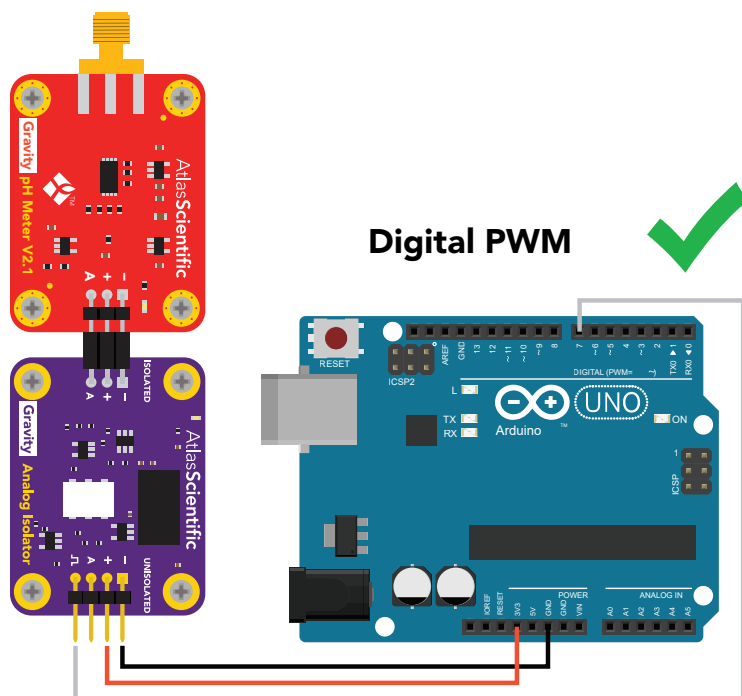
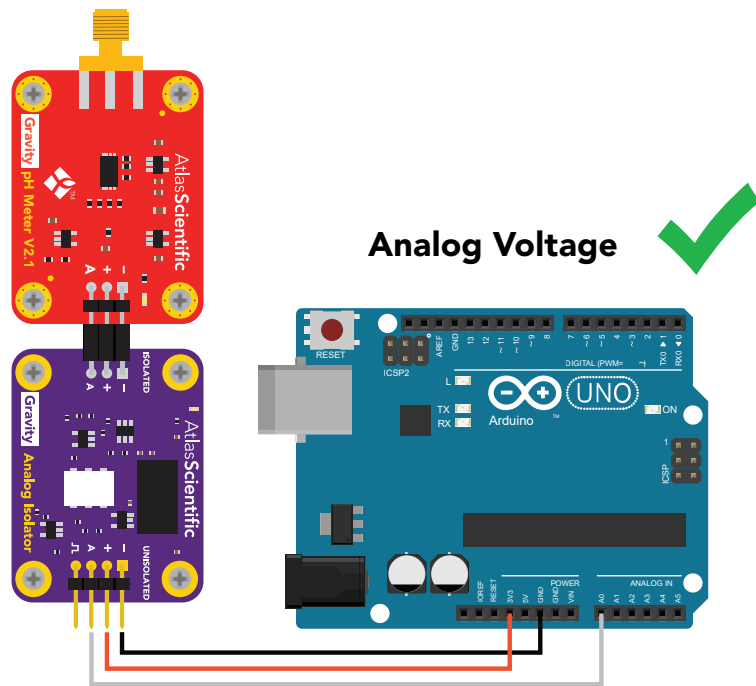
Connection pins



The Gravity™ Analog Isolator mates with Atlas Scientific Gravity™ Analog Sensors / Meters through their 3 pin headers.



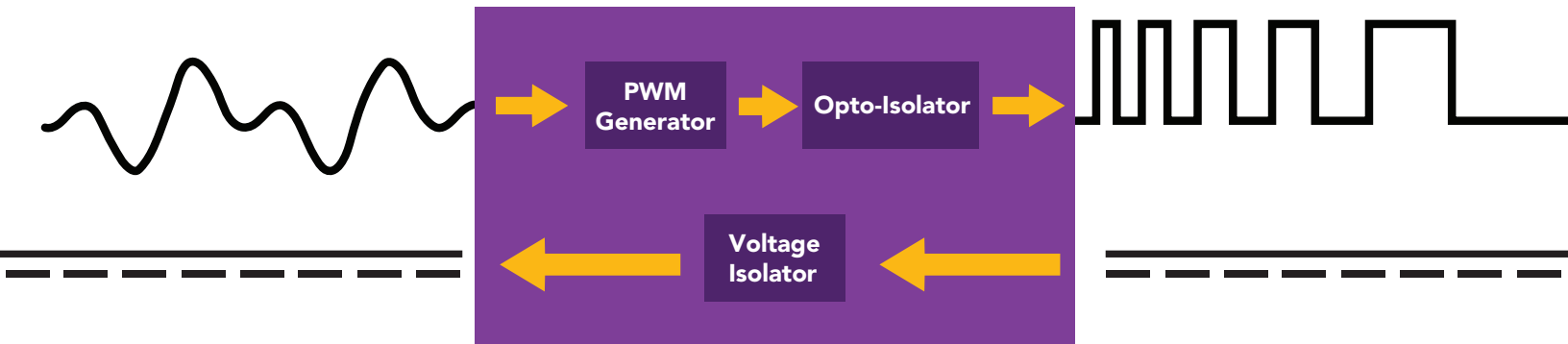
Wiring diagram



A Raspberry Pi cannot read PWM or analog signals.

Operating principle

There is no simple way to isolate an analog signal without converting it to something else; this isolator uses pulse width modulation (PWM) to encode the analog pH readings.



Block diagram of the analog isolator

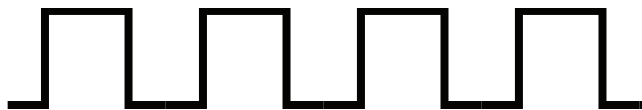
The output of the analog isolator is a 10.6 KHz square wave. No matter what the reading is, the frequency is always 10.6 kHz. The data is encoded in the width of each square wave, PWM (*pulse width modulation*).

Example PWM

pH 4



pH 7



pH 10



Example Voltage

3 Volts

1.5 Volts

0 Volts

pH 4

3 Volts

1.5 Volts

0 Volts

pH 7

3 Volts

1.5 Volts

0 Volts

pH 10

The frequency is always 10.6 kHz; it is only the width of each pulse that changes.