

# Using a HC-SR04 distance sensor

The HC-SR04 is a ultrasonic distance sensor, it uses ultrasound to send out a ping and measure how long the sound takes to come back, exactly like bats use to fly in the dark.

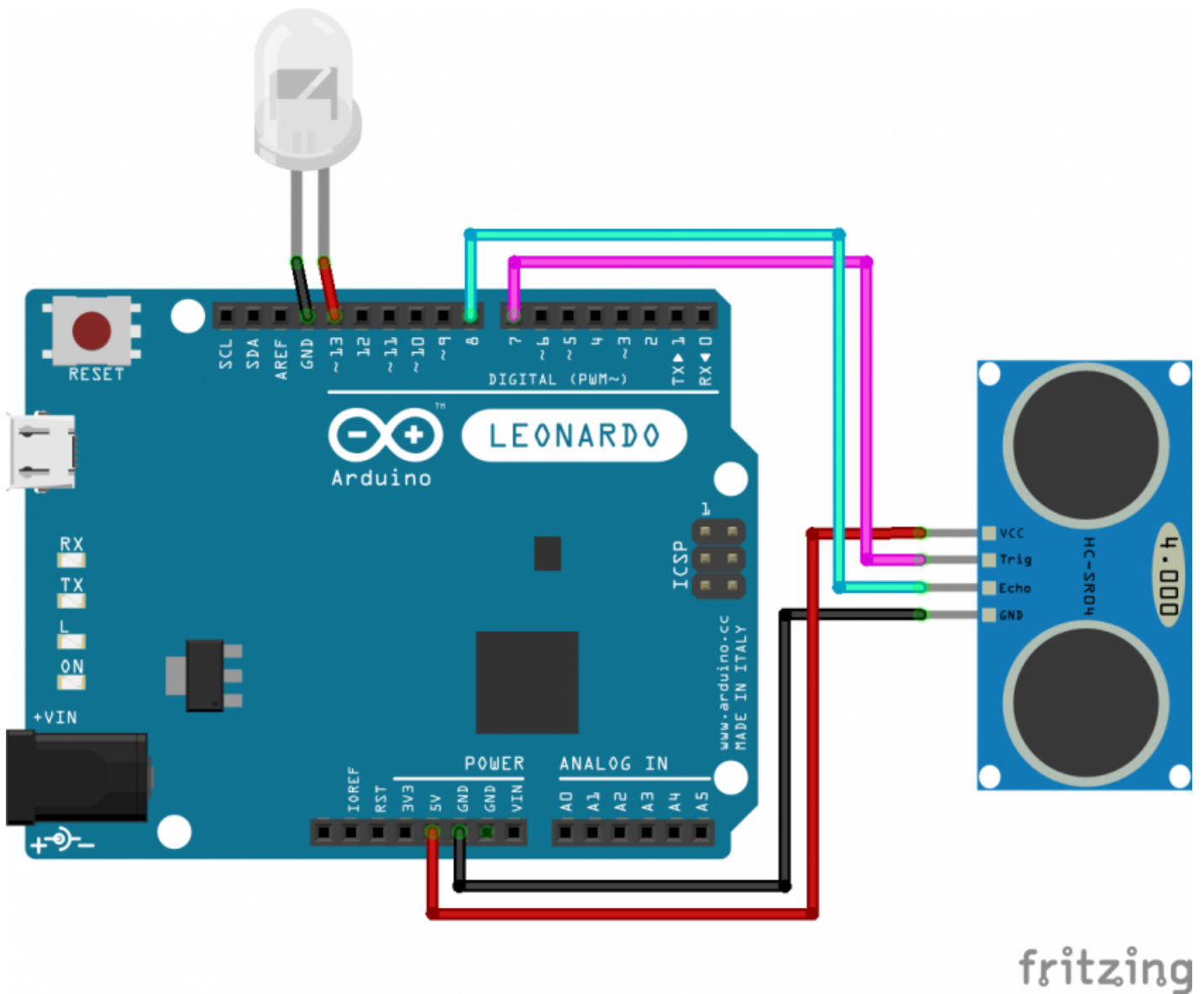
The sensor works between 2-400cm however if the ping sound is reflected away from the sensor by an a divergent (not parallel) surface, or absorbed by a soft surface like fabric there may no measurement.

There are other types of distance sensors that are more accurate for projects where needed, this is a cheap < £5 sensor, while more accurate ones are over £100.

## Wiring

Wiring up buttons and switches is simple:

1. Power (VCC to 5V)
2. Ground (GND to GND)
3. Echo to digital pin 8
4. Trigger to digital pin 7



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Additionally in this diagram there is a LED attached to digital pin 13 for the getting started example code, however this isn't required for other projects.

## Getting started

This example turns on an LED when the distance measured is less than 50cm and back off when the distance goes over 60cm.

```
#include <NewPing.h>

#define trigPin 7
#define echoPin 8
#define maxDistance 400

NewPing sonar( trigPin, echoPin, maxDistance);
```

```
void setup() {  
  Serial.begin( 9600 );  
}  
  
void loop() {  
  Serial.println( sonar.ping_cm() );  
  delay( 100 );  
}
```

To use this code you will need the [NewPing Library](#).

We have a tutorial on [how to install a library](#) here.

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