

Waterproof Ultrasonic Obstacles Sensor, Reversing Radar Sensor With Separate Probe



This ultrasonic sensor is very similar to the ultrasonic sensors which are found in cars. This Waterproof Ultrasonic Obstacle Sensor shows some important constructional advantages over the conventional sensors. It comes in two separate parts one being the transducer which is the sensing element and the other being the control board.

The module is capable of providing information of the objects between the distance range of 250 mm to 4500 mm. The great advantage of using this Waterproof Ultrasonic Obstacle Sensor is you can put the sensing element far away from all the control circuitry.

This Ultrasonic Distance Sensor is an industrial-grade sensor to measure distance. Interfacing with it is the same as another cheap ultrasonic sensor, but it offers better performance and is compatible with harsher environments and is waterproof too.

It is very easy to use, a control port with a 10US above high level can wait for high-level output at the receiving port. An output can drive the timer when this port is low can read the timer value, this time for the location of the time can be distance measurement. Constantly cycle tests that can achieve the measurement of the value of your mobile.

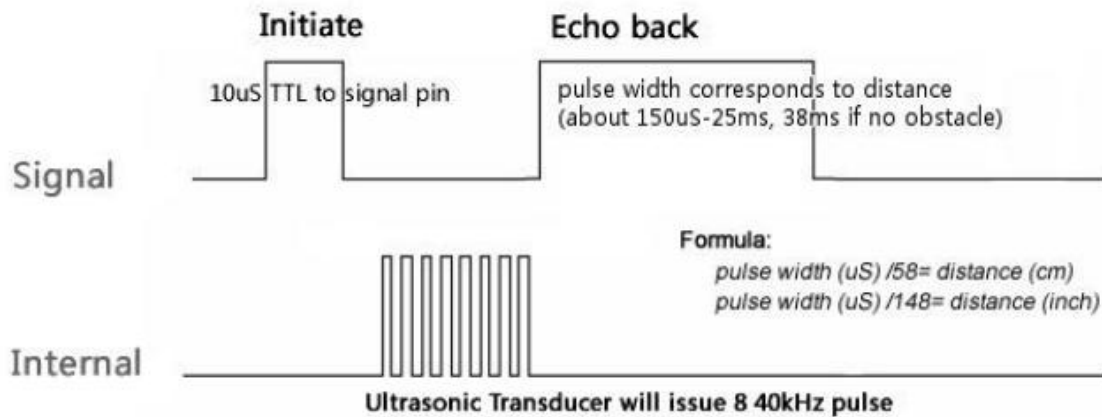
FEATURES:

- Small size, easy to use.
- Low voltage, low power consumption.
- High accuracy.
- Strong anti-jamming.
- Integrated with wire enclosed waterproof probe, suitable for wet, harsh measurement occasions.

SPECIFICATIONS:

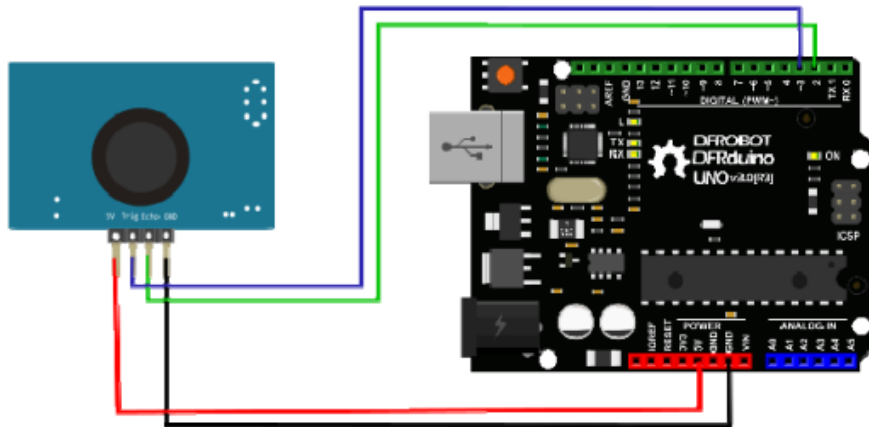
- Operating voltage (v): 5
- Operating Current (mA): 30
- Static Current (mA): 5
- Operating Range: 25cm ~ 4.5m
- Resolution: 0.5 cm
- Detecting Angle: $< 70^\circ$
- Operating Temperature (\hat{a}, f): -10 ~ +70
- Cable Length: 2.5 meter
- Dimension(LxWxH): 41x28x12.5
- Weight(gm): 50

WORKING PRINCIPLE:



- A short ultrasonic pulse is transmitted at the time 0, reflected by an object. The sensor receives this signal and converts it to an electric signal. The next pulse can be transmitted when the echo fades. This time period is called cycle period.
- The recommend cycle period should be no less than 50ms. If a 10μs width trigger pulse is sent to the signal pin, the ultrasonic module will output eight 40kHz ultrasonic signals and detect the echo back. The measured distance is proportional to the echo pulse width and can be calculated by the formula above. If no obstacle is detected, the output pin will give a 38ms high level signal.

CONNECTION DIAGRAM:



```
1 #define ECHOPIN 2// Pin to receive echo pulse
2 #define TRIGPIN 3// Pin to send trigger pulse
3 void setup(){
4   Serial.begin(9600);
5   pinMode(ECHOPIN, INPUT);
6   pinMode(TRIGPIN, OUTPUT);
7 }
8 void loop(){
9   digitalWrite(TRIGPIN, LOW); // Set the trigger pin to low for 2uS
10  delayMicroseconds(2);
```

```
11 digitalWrite(TRIGPIN, HIGH); // Send a 10uS high to trigger ranging

12 delayMicroseconds(10);

13 digitalWrite(TRIGPIN, LOW); // Send pin low again

14 int distance = pulseIn(ECHOPIN, HIGH,26000); // Read in times pulse

15 distance= distance/58;

16 Serial.print(distance);

17 Serial.println(" cm");

18 delay(50);// Wait 50mS before next ranging

19 }
```

PIN FUNCTION:

Pin No	Pin Name	Description
1	5V	Power Input +
2	Trig	Trigger Signal
3	Echo	Echo Signal
4	GND	GND

APPLICATIONS:

- Horizontal distance
- Obstacle avoidance, automatic control
- Traffic control
- Security, industrial control
- Artificial intelligence, and research.

PACKAGE INCLUDES:

1x Waterproof Ultrasonic Obstacle Sensor, with 2.5m Separate Probe.

