

## Ultrasonic Ranging Module HC-SR04

Download the Library , unzip the release package to arduino-0018/libraries/ folder. Open the Arduino IDE , you can include the library by Sketch-Import library-Ultrasonic . And you can find the example sketch in

File-Examples-Ultrasonic-UltrasonicDemo .

Here we give out a brief introduction of this ultrasonic ranging library.

It includes 3 function for user :

### **1. ULTRASONIC(INT TP , INT EP)**

This is a initial function for ultrasonic ranging module, choose the pins for module Trig and Echo pin.

example: Ultrasonic(13,12);

then you define the digital pin 13 of Arduino for the Trig pin of HC-SR04. And the pin 12 for Echo pin.

### **2. LONG TIMING()**

Trigger the ultrasonic ranging module work and return the duration that Echo pin keep high level.

example: long time; Ultrasonic hcsr; time = hcsr.Timing();

Then you start the HC-SR04 for ranging and you get the time the Echo pin keep high, you can change the time corresponds to the distance :

Distance = ((Duration of high level)\*(Sonic :340m/s))/2

### **3. LONG RANGING(INT SYS) — (SYS : CM / INC)**

If you don't want to change the time into distance yourself , this function will help you get the distance immediate. And the function has a parameter sys, you can use CM or ICN , than you get the distance show as centimeter or inch. This function will call the Timing() and you don't need to use the Timing() before it.

example: long distance; Ultrasonic hcsr; distance = hcsr.Ranging(CM);