

Erriez HC-SR04 ultrasonic distance sensor library for Arduino
1.0.0

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Chapter 1

HC-SR04 Ultrasonic Distance Sensor library for Arduino

This is a HC-SR04 I2C RTC library for Arduino.

Library features

- Measure distance between 3cm .. 400cm or 1.18" .. 157.48"
- Accuracy around +/-1cm
- Optimized pin control for AVR

Hardware

Arduino UNO

- TRIG pin to Arduino Uno pin 2
- ECHO pin to Arduino Uno pin 3
- VCC pin to Arduino Uno pin VCC
- GND pin to Arduino Uno pin GND

Examples

Arduino IDE | Examples | Erriez HC-SR04:

- [HC-SR04 Centimeter](#)
- [HC-SR04 Inch](#)

Documentation

- [Doxygen online HTML](#)
- [Doxygen PDF](#)
- [Datsheet](#)

Example

```
{c++}
#include <ErriezHCSR04.h>

// Pin defines
#define TRIG_PIN    2
#define ECHO_PIN    3

// Create sensor object
ErriezHCSR04 hcsr04(TRIG_PIN, ECHO_PIN);

void setup()
{
    // Initialize serial port
    delay(500);
    Serial.begin(115200);
    while (!Serial) {
        ;
    }
    Serial.println(F("\nErriez HC-SR04 ultrasonic distance sensor example\n"));

    // Initialize pins
    hcsr04.begin();
}

void loop()
{
    int16_t distance;

    // Measure distance in centimeter
    distance = hcsr04.getDistance();

    // Print distance
    Serial.print(F("Distance: "));
    if (distance >= 0) {
        Serial.print(distance);
        Serial.println(F(" cm"));
    } else {
        Serial.println(F("-"));
    }

    // Wait
    delay(250);
}
```

Distance in Inches

```
{c++}
void loop()
{
    float distance;

    // Measure distance in Inch
    distance = hcsr04.getDistanceInch();

    // Print distance
    Serial.print(F("Distance: "));
    if (distance >= 0) {
        Serial.print(distance);
        Serial.println(F("\n"));
    } else {
        Serial.println(F("-"));
    }

    // Wait
    delay(250);
}
```

Library dependencies

- None

Library installation

Please refer to the [Wiki](#) page.

More Arduino Libraries from Erriez

- [Erriez Libraries](#)

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

ErriezHCSR04	
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Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

src/ ErriezHCSR04.cpp	??
src/ ErriezHCSR04.h	
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Chapter 4

Class Documentation

4.1 ErriezHCSR04 Class Reference

[ErriezHCSR04](#) class.

```
#include <ErriezHCSR04.h>
```

Public Member Functions

- [ErriezHCSR04](#) (uint8_t triggerPin, uint8_t echoPin)
Constructor.
- void [begin](#) ()
Initialize pins.
- int16_t [getDistance](#) ()
Get distance in cm.
- float [getDistanceInch](#) ()
Get distance in Inch.

4.1.1 Detailed Description

[ErriezHCSR04](#) class.

Definition at line 58 of file ErriezHCSR04.h.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 ErriezHCSR04()

```
ErriezHCSR04::ErriezHCSR04 (
    uint8_t triggerPin,
    uint8_t echoPin )
```

Constructor.

Parameters

<i>triggerPin</i>	Trigger pin
<i>echoPin</i>	Echo pin

Definition at line 43 of file ErriezHCSR04.cpp.

4.1.3 Member Function Documentation

4.1.3.1 `getDistance()`

```
int16_t ErriezHCSR04::getDistance ( )
```

Get distance in cm.

Return values

<i>-1</i>	Out of range
<i>0..400cm</i>	Distance in cm

Definition at line 78 of file ErriezHCSR04.cpp.

4.1.3.2 `getDistanceInch()`

```
float ErriezHCSR04::getDistanceInch ( )
```

Get distance in Inch.

Return values

<i>-1</i>	Out of range
<i>0.00"</i>	.. 157.48" Distance in inch

Definition at line 111 of file ErriezHCSR04.cpp.

The documentation for this class was generated from the following files:

- [src/ErriezHCSR04.h](#)
- [src/ErriezHCSR04.cpp](#)

Chapter 5

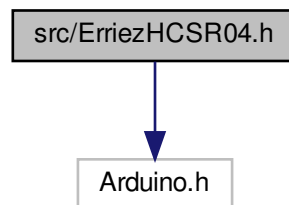
File Documentation

5.1 src/ErriezHCSR04.h File Reference

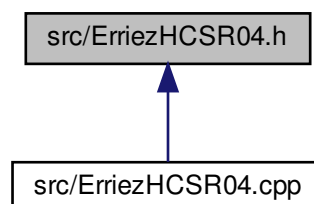
HC-SR04 ultrasonic distance sensor library for Arduino.

```
#include <Arduino.h>
```

Include dependency graph for ErriezHCSR04.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [ErriezHCSR04](#)
[ErriezHCSR04](#) class.

Macros

- `#define HCSR04_TRIG_LOW() { digitalWrite(_triggerPin, LOW); }`
Trigger pin low.
- `#define HCSR04_TRIG_HIGH() { digitalWrite(_triggerPin, HIGH); }`
Trigger pin high.
- `#define HCSR04_TRIG_OUTPUT() { pinMode(_triggerPin, OUTPUT); }`
Trigger pin output.
- `#define HCSR04_ECHO_INPUT() { pinMode(_echoPin, INPUT); }`
Echo pin input.
- `#define HCSR04_ECHO_READ() (digitalRead(_echoPin))`
Echo pin read.

5.1.1 Detailed Description

HC-SR04 ultrasonic distance sensor library for Arduino.

Source: <https://github.com/Erriez/ErriezHCSR04> Documentation: <https://erriez.github.io/ErriezHCSR04>

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